THE ROLE OF PAY FOR PERFORMANCE IN IMPROVING MATERNAL AND CHILD HEALTH IN MKURANGA DISTRICT TANZANIA

Philemon Kalugira

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THE ROLE OF PAY FOR PERFORMANCE IN IMPROVING MATERNAL AND CHILD HEALTH IN MKURANGA DISTRICT TANZANIA

By

Philemon Kalugira

A Dissertation submitted in (partial) fulfilment of the requirements for the Degree of Master of Public Health of Muhimbili University of Health and Allied Sciences

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CERTIFICATION

The undersigned certifies that he has read and here by recommends for acceptance by Muhimbili University of Health and Allied Sciences a dissertation entitled **'The role of Pay for Performance in improving maternal and child health at Mkuranga district'**, in partial fulfilment of the requirement for the degree of Master of Public Health of Muhimbili University of Health and Allied Sciences

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PROF. PHARE G. M. MUJINJA, BA (Hons), CIH, MPH, MA (Econ), PhD

(Supervisor)

_____

Date

DECLARATION AND COPYRIGHT

I, Philemon Kalugira, declare that this dissertation is my own original work and it has not been presented and will not be presented to any other university for a similar or any other degree award.

Signature_____ **Date** _____

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DEDICATION

This work is dedicated to my beloved wife Sheila and my beautiful daughter Vanesa for bearing with a busy husband and father and their patience during my absence. Furthermore to my mother Mrs Mwanaharusi Kalugira and my late father Mr Simon Kalugira

ABSTRACT

Pay for performance programs are one of the few health policy interventions intended to motivate health workers to improve their performance. This program was introduced in Tanzania with the aim of improving reproductive and child health services. The program was piloted in Mkuranga district in Tanzania since Jan 2011.

Objective of the study is to evaluate the role of Pay for Performance on improving reproductive and child services.

Methodology: Qualitative and quantitative cross sectional explorative evaluation study was conducted involving 31 health facilities in the program and 123 health care workers providing maternal and child health services. Data on performance and level of motivation of four indicators were collected before (retrospectively) and after P4P program. Mean level of motivation was calculated and compared before and after the program and tested for significance. Proportion of number of clients serviced was calculated before and after the program and compared for significance. Qualitative data was collected by conducting indepth interview conducted with health workers.

Results: There was increase in number of ANC clients received IPT2 for hospital, health centre and dispensaries. The observed increase was statistically significant for health centre and dispensary ($p<0.001$). For Children received Measles vaccine there was no statistic significant increase for hospital ($p=0.36$). For dispensaries the number of clients received measles vaccine was greater than target population while for health centre there was statistically significant increase in number of clients attended ($p<0.001$). Facility deliveries findings show statistic significant increase in the number of clients attended at dispensaries and health centres ($p<0.001$). For hospital the number of deliveries exceeded the target population. PENTA 3 vaccine results show slight drop which was not statistically significant ($p<0.001$). Number of facility deliveries for health centres and dispensaries increased statistically significant ($p<0.001$).

Conclusion and recommendation Pay for performance (P4P) program has positive effect on motivating health care workers to improve their performance. The policy of pay for performance should be adopted and rolled out to other regions of Tanzania. Moreover case control studies should be done

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LIST OF ABREVIATION

HF	Health facility
CHMT	Council health management team
P4P	Pay for performance
ANC	Antenatal clinic
PMTCT	Prevention of mother to child transmission
DC	District Council
ART	Ante retroviral therapy
IPT2	Intermittent presumptive treatment (2^{nd} dose)
MUHAS	Muhimbili University of Heath Science
SPHSS	School of Public Health and Social Sciences
NHIF	National Health Insurance Fund
RHMT	Regional Health Management Team
WHO	World Health Organization
HIMS	Health management Information System
RCH	Reproductive and Child Health
DHIS	District Health Information system
Fp	Focal person
HCW	Health Care Worker
MOI	Medical Officer Incharge
CDC	Centre for Diseases Control
DVS	District vaccine store

DEFINITION OF TERMS

Pay for Performance (P4P) - Is an intervention where by health care workers are paid bonus on return for their performance on health service delivery

Incentive- An activity to motivate people to achieve pre determined health goal or defined as all rewards or punishment that providers face as a consequence of organisation in which they work, institution in which they operate and the specific interventions they provide. (WHO 2000)

Motivation- An individual degree of willingness to exert and maintain an effort towards an organisational goal.

Coverage- The extent to which something is observed analysed and reported.

CHAPTER ONE

INTRODUCTION

1.1 Background information

Human resouce for health is among six blocks of health system (WHO 2002). It plays a very crucial role on delivering of health services. Currently is under very serious crisis especially in low income countries. There is big shortage especially in rural areas where there is very big population and demand is intense, but even those few available report a lot of dissatisfaction and are demotivated (Manafa et al. 2009). Africa needs additional of at least 1 million heath workers in order to give basic health services consistent with MDGs (Willis-Shattuck et al. 2008). Furthermore the issue of low motivation of heath workers has increasingly become a focus for poor performance (Manafa et al. 2009).

Motivation is the process that arouses, energises, direct and sustain behaviour and performance, so it's a process of stimulating people to action in order to achieve a desired task which in health is the quality health care delivery (Aslan 2011)

In order to increase human resource productivity they must be motivated and satisfied ,(Manongi et al. 2006). For the health care worker to be motivated there must be interplay of monetary and non monetary factors act together in order to bring long time and sustainable effects to the delivery of health care. These factors are good working environment, continuing education, career progression, performance appraisal, provision of job description, salaries and recognition (Manafa et al. 2009)

However motivation is also influenced by intrinsic and extrinsic factor and it was found that intrinsic factors have more effect than extrinsic factors in terms of giving good results. There are several motivation theories trying to give good understanding of motivation concept but they all explain that if we know what drives people then we are able to make them what we want them to do (Aslan 2011)

There is big concern on how to raise motivation of health care workers so as to increase their productivity which will ultimately improve the quality of health care delivery, which is currently at stake. Several measures have been taken which include introduction and improvement of financial and non financial incentives through various approaches, but it was found that to combine both types of incentives is the best way to deliver good results

and therefore there is need to develop strategies which will influence staff motivation for better performance (Willis-Shattuck et al. 2008).

In the past decade Pay for Performance (P4P) has become dominant approach in health care despite lack of rigorous evidence to support how they are effective and also lack of consensus on how best to design and implement these programs. P4p focus on rewarding quality of care performance by doing so it has also added momentum for improving quality of care services (Shi 2008)

Pay-for-performance system is a remuneration arrangement in which a portion of the payments is based on performance assessed against a defined measure (Shi 2008). But also can be defined as performance indicators which are directly linked to an incentive scheme whereby performance indicators is the performance component of p4p and incentive scheme is the pay component (Cromwell et al. 2011)
Measure performance is not an easy task, it's a bit complex because it consist of several components which includes, defining domains of performance, selecting domains of interest to be measured, selecting indicators that will be used to measure each domain of performance, defining the unit of performance and accountability, choosing sources of data which will be used for measuring performance, and deciding whether participation is voluntary or mandatory (Cromwell et al. 2011)

The scheme in Tanzania has 4 main objectives namely, 1. To improve the efficiency and effectiveness of health service delivery using a results-oriented approach, 2.To increase the generation and use of health information for decision making leading to improved health outcomes 3.To motivate health care workers to provide quality services,4. To effectively manage, monitor and evaluate the P4P in the Pwani region.

The incentive package in Pwani region in Tanzania paid into three categories which are1. All full time staff of dispensaries, 2.All full time staff of health centres where by in this two categories 25% of the bonus have to be used to improve the facility and the decision of how to use have to be decided by the facility governing committee and 75% of the bonus have to be divided equally to all staff, 3.All full staff of hospital who are categorised into RCH staff who receive big share of incentive (60%) and non RCH staff who receive small share of incentives(30%) and this is because all indicators base on reproductive and child

health performance and the remaining 10% is used for facility development. Although in dispensaries and health centres there is no categorisation simply because there is shortage of health care workers so they perform all tasks together and 4. All Core member and co opted members of CHMT and RHMT,

Indicators are derived from routine HIMS data which are collected data on monthly form. There are a list of indicators which are used for bonus payment and this are

• Couple Year Protection Rate
• ANC clients who received IPT 2 Malaria Prophylaxis
• ANC clients on ART for PMTCT
• Percentage of facility-based deliveries
• Percentage of completely and properly filled partographs
• Percentage of newborns given OPV0
• Percentage of newly delivered mothers attending the postnatal clinic in a facility within 7 days after delivery
• Percentage of Children under one year old receiving PENTA 3 vaccination
• Percentage of Children under one year old receiving measles vaccination
• Percentage of maternal and newborn deaths that are appropriately audited on time
• Percentage of facilities reporting stock outs of RCH medicines
• HMIS correctly filled and delivered on time to CHMT
• Percentage of facilities in HMIS monthly reports
• Percentage of districts in HMIS monthly reports
• Submission of Semi-Annual Regional Health Profile Report
• Percentage of facilities receiving Quarterly District Health Profile Reports

Since there is a risk of inflating performance artificially verification of data is done at the facility and community level first by the National verification Committee which have the mandate to approve payments, then at the regional level there is regional Certification Committee their duty is to satisfy target achievements by CHMT and health facilities but they have no mandate to approve payment and also there is independent verifier who is contracted to perform spot check at the facilities and community

Payment cycle is after every six months and payment is processed by NHIF within three months after completion of the cycle, maximum payout per cycle for Dispensaries Tsh

1,052,700/= , Health Centres Tsh 3,935,300/= Hospitals 11,807,350/=, CHMT Tsh 4,660,300/= (DMO, Mkuranga HIMS report, 2012)

Indicator target is set at the beginning of each cycle for each particular health facility depending on the performance of that indicator at that particular time. At the end of the cycle achievement of between 75% and 99% will be awarded 50% of the total bonus of that particular indicator and achievement of 100% will be awarded 100% of the total bonus of that particular indicator (DMO, Mkuranga HIMS report, 2012)

The aim of this study is to evaluate the extent the what extent program has been able to achieve the objective of improving the efficiency and effectiveness of health service delivery through motivating health care workers using a results-oriented approach. This will be done by assessing 4 selected HFs target indicators namely

1. % of Ante natal clinic clients receiving Intermittent Presumptive Treatment (IPT) 2, which evaluates the quality for focused antenatal care at facilities. It measures the number of pregnant women receiving IPT2 (2nd dose of malaria prophylaxis) within the facility's antenatal clinic. This indicator shows the number of women who will be protected from severe malaria infections during their pregnancy.
2. % of Children under one year old receiving PENTA Valent 3 (DPT, Hep B, and Hib) vaccination, which is the WHO and UN selected proxy for vaccine coverage of children under 1 year. This indicator measures the number of children under one year of age who received the Penta3 vaccine within each facility's service area divided by the total number of children under 1 year.
3. % of facility-based deliveries provide coverage on facility-based deliveries as a measure of providing of clean and safe deliveries. It is derived from the total number of deliveries taking place in a given facility by the expected number of deliveries in the population. Hospitals have been excluded from this indicator because they usually exceed the number of expected deliveries for their catchment areas. Difficulties also remain with determining the population of their service areas.

4. % of Children under one year old receiving measles vaccine, which is an important indicator for infant mortality, measures the number of children under one year of age who received the measles vaccine within each facility's service area divided by the total number of children under 1 year.

The program has been implemented in Pwani region since Jan 2011 to date and 4 performance payment cycles has already been done. In all cycles CHMT together with health facilities have manage to get a bonus of Tsh 131,988,826/= (51%) of the allocated total budget Tsh 256,531,313/=which was aimed if all targets achieved by 100%. The trend is as follows, cycle 1 from Jan 2011 to Jun 2011 (49%), cycle 2 from July 2011 to Des 2011 (52%), cycle 3 from Jan 2012 to June 2012 (55%) and cycle 4 from July 2012 to Des 2012 (48%) (DMO, Mkuranga HIMS report, 2012)

1.2 Statement of problem

Mkuranga District is implementing P4P scheme funded by the government of Tanzania and Norway. This scheme aims at increasing utilization and improving quality of health care delivery in order to reduce maternal, neonatal and child morbidity and mortality rate in order to achieve Millennium Development Goal number 4 and 5 targets. Moreover to generate quality data on a timely and complete manner and influence utilization of health information on decision making. The scheme is intended to increase working morally at all levels from council and regional health teams (CHMT and RHMT) to health facility workers by providing bonus payment based on performance.(Canavan & Kit 2008)

Poor performance on health service delivery is a major concern worldwide especially in low income countries. It was found that 95% of maternal and child death occurred in low and middle income countries. Africa work force is insufficient and this has major constraint on achieving MDGs for reducing poverty and diseases by 2015. The word health report 2006 has shown that countries with fewer than 2.3 trained health personnel per 1000 population fail to achieve 80% coverage rate of measles immunization and 57% of sub Saharan countries fall under this threshold (Manafa et al. 2009)

Tanzania is not exceptional and faces challenges like most low income countries. Health survey findings shows that number of women delivering at home is still high (48%), IPT2 coverage is 47%, PENTA 3 and measles coverage is 75% which is below the national target of 90%.These findings shows great variation across regions (Tanzania DHS, 2010).

Another study done in kongwa shows that home delivery constitutes 53% of all deliveries and accounts for most of complications which results into maternal death (Simfukwe, 2008).

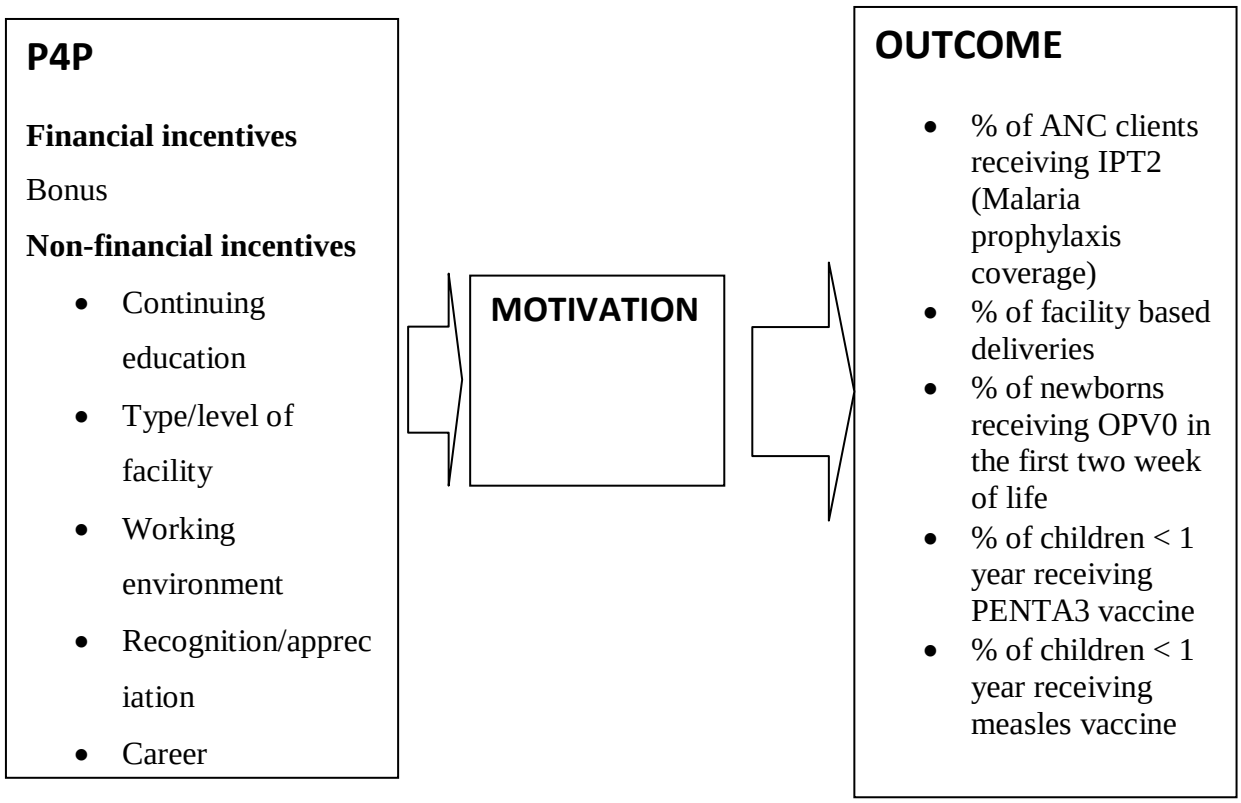
Quality of services can affected by other factors in the health system such as availability of medicine and medical supplies, supportive supervision, reliable transportation, quality of data, health infrastructures and leadership and governance (Busogoro & Beith 2010).

The aim of this study is to evaluate to what extent program have been able to motivate health care workers to increase number of ANC clients received Intermittent Presumptive Treatment (IPT 2), number of Children under one year old received PENTA 3 and Measles vaccine and number of facility-based deliveries and to explore challenges during implementation of the program.

1.3 Rationale of the study

The program has already being implemented for 2 years and evaluation has not been done. This study will generate information to what extent the program has been able to motivate health care workers to improve defined indicators on maternal and child health services. This information will be useful to CHMT and program managers for refining of the program. To understand if there is any problem on the course of its implementation and support. Moreover to understand if there is any ongoing concern that needs to be addressed.

1.4 CONCEPTUIAL FRAME WORK



Summary

Motivation is very important component for health care workers to improve their performance on delivering health care services. For this particular study performance was measured by the number of clients received IPT2, health facility deliveries, children received PENTA3 and measles vaccine. Motivation can be influenced by many factors categorised into financial such as bonus which is paid to health care workers in P4P program or non financial such as level of health care facility or type of health care facility ,working environment, continuing education, appreciation and level of education

1.5 Study questions

1.5.1 Broad

1. What is the role of Pay for Performance (P4P) in improving maternal and child health status

1.5.2 Specific

1. What is the role of P4P on improving focused antenatal care services to increase ANC clients who received IPT 2 Malaria Prophylaxis?
2. What is the role of P4P on improving child health services to increase number of Children under one year old receiving measles vaccine?
3. What is the role of P4P on improving child health services to increase number of Children under one year old receiving PENTA 3 vaccination?
4. What is the role of P4P on improving child health services to increase number of facility-based deliveries?
5. What are the factors affecting achievement on increasing the number of ANC clients received IPT2, number of health facility deliveries, number of children received PENTA3 and measles vaccine during implementation of P4P program

1.6 OBJECTIVES

1.6.1Broad

2. To evaluate the role of pay for performance on improving maternal and child health services

1.7.2 Specific

1. To determine role of P4P on improving focused antenatal care services to increase ANC clients who received IPT 2 Malaria Prophylaxis
2. To determine role of P4P on improving child health services to increase number of Children under one year old receiving measles vaccine
3. To determine the role of P4P on improving child health services to increase number of Children under one year old receiving PENTA 3 vaccination

4. To determine role of P4P on improving child health services to increase number of facility-based deliveries

5. To explore factors affecting achievement on increasing the number of ANC clients received IPT2, number of health facility deliveries, number of children received PENTA3 and measles vaccine during implementation of P4P program.

CHAPTER TWO

LITERATURE REVIEW

2.1 What is motivation

Motivation is the maximum desire for someone to perform the work to achieve maximum productivity. Human resource is the backbone and very important component of the health system. Usually account for the big share of the public expenditure on health sector, so in order to attain good performance in health delivery there is need to have high quality motivated health staff (Peters et al. 2010). In many developing and developed countries the number of health workers is insufficient to achieve population heath goals however financial incentives for return of health service are intended to alleviate health shortages of health care workers (Bärnighausen & Bloom 2009b)

There are several literature and theories that explains about the factors that affect motivation and satisfaction of worker and they are either monetary or non monetary incentives. It has been found that provision of financial incentives and breaking down task is the best way to perform work and increase productivity (Peters et al. 2010)

There are other factors as well which are very important in improving workers motivation namely continuous education and career progression, standard human resource practice such as provision of job description and performance appraisal, good salaries and better working environment (Manafa et al. 2009). This shows that there is interplay of multiple factors that must act together to bring the desired effect of motivating health care workers to maximize their productivity and subsequently improve the quality of health care delivery.

Low motivation and dissatisfaction of health workers has been cited as the major concern especially in low income countries and this have negative impact towards delivery of health system (Chandler et al. 2009). Majority of health care workers are not satisfied and there for less motivated to perform their responsibilities efficiently. It was found that 50% of doctors and nurses were not satisfied with their jobs (Leshabari et al. 2008)

2.2 Incentive as motivating factor

Despite having several types of incentives which can be categorised as financial and non financial it was found that financial incentives to health workers have more positive effect than non financial incentives in motivating workers to improve performance and that is the main reason p4p bonus payment are more preferred approach in recent years (Van Herck et al. 2010)

In order to improve health care workers motivation the best approach is first to understand what they need rather than introducing vertical motivation programs which do not give answers to health workers needs. The truth is that in many cases very little is known about health care workers expectation and motivation to perform well and understanding will provide empirical base for policy decisions to improve quality health care (Chandler et al. 2009). But also understanding relationship between support system such as strong supervision and training is critical in designing of effective interventions to improve motivation to health care workers so that they will maximise their productivity and yielding better health outcomes (Siril et al. 2011)

2.3 The role of P4P on improving performance

As an attempt to improve health care delivery one of the major key issues is to raise health care workers motivation through various approaches and among them is the introduction of Pay for Performance bonus to health care providers. Health care providers are paid financial incentive based on given criteria's. This scheme is the most commonly used and discussed approach and has many challenges in design and execution (Jones et al. 2010). Currently the scheme is operating in many low and high income countries and have shown increased performance on maternal and child health to mention the few are Rwanda (Basinga et al. 2010), Burundi (Busogoro & Beith 2010).

Payment for performance bonus schemes implementation has disadvantages because of its ceiling effect. Some of the good performance is reversed when incentives are withdrawn and improvements shows opportunity cost as absent improvements for indicators which are not object to financial incentives. This shows that long term effect is still a challenge and its sustainability is still questionable (Schrappe & Gültekin 2011).

In many cases performance indicators do not cover broad area of heath care delivery system rather focuses on special areas of interest. For example, in Tanzania all defined

performance indicators based on maternal and child health and reporting of HIMS data on a timely and complete manner (P4P Process Round One Report Data Collection Period: December 2011-March 2012). This means that it is difficult for health care workers to work hard to improve other areas. In Rwanda pay for performance bonus payment have positive effect on institutional deliveries and quality of prenatal care which have highest payment rates and needed low efforts but not on other areas of health care delivery. There for it proved that without incentives the outcome would not be the same (Basinga et al. 2010). However effect of P4P on quality is very limited rather it has to take into account broader definition of quality (Peckham & Wallace 2010). There is no doubt that p4p have positive effect on specified health goals but the issue is that very little is known on how to use the scheme effectively to improve quality care at larger scale (Werner et al. 2011)

Health care workers performance has to be looked at based on their resources and capacities rather than being blamed for the health system failure factors to which they have very little to do to rectify (Gross et al. 2012). For that matter there is need to understand those concepts as to why they fail to deliver quality health care, and not concentrates on factors which belong to the system alone. This will enable to do more investment in those deficient areas and help them to attain their personal and health goals.

Pay for performance is rapidly evolving as the best way to improve quality care but it's difficult phenomenon because it faces many challenges and as a result fails to attain its ultimate goal which is to improve the quality health care delivery in broader meaning (Van Herck et al. 2011).

Another argument about P4P is the fact that it is health care worker cantered and do not take into account patient behaviours which are very important in predicting health of the population. Behaviour change will result in reducing morbidity and mortality of many preventable diseases and there for reducing health cost, which is more sustainable (Long et al. 2008)

2.4 Health indicators performance

It was found that 95% of maternal and child death occurred in low and middle income countries. In June 2010 leaders of the G8 announced a comprehensive and integrated approach to accelerate progress towards MDG 4 and 5 for maternal and child health known as the Muskoka declaration (Gupta et al. 2011). Africa work force is insufficient and this

has major constraint on achieving MDGs for reducing poverty and diseases by 2015. The word health report 2006 has shown that has shown that countries with fewer than 2.3 trained health personnel per 1000 population fail to achieve 80% coverage rate of measles immunization. Furthermore it was found that 57% of countries in sub Saharan Africa and Asia fall below this minimum threshold and this have major impact on infant and maternal mortality (Manafa et al. 2009)

In Tanzania performance on delivery of health care is still a challenge like most low income countries. Health survey findings shows that number of women delivering at home is still high (48%), IPT2 coverage is 75%, PENTA 3 and measles coverage is 88% and 85% respectively which is below the national target of 90%.These findings shows great variation across regions (Tanzania DHS, 2010).

2.5 Factors affecting performance

Despite introduction of P4P as mechanism for motivating health care workers but there are other factors which play important role on improving quality health care. It has been documented repeatedly that small size human resouce work force, lack of adequate supportive supervision, shortage of medical equipments and supplies and lack of reliable transport is overwhelming the capacity of the health system (Kwesigabo et al 2012). This poses a great challenge towards provision of quality health services.

However literature shows that effective supportive supervision in primary health care play important role on motivating HCWs to perform their task and improve performance (Bosch-Capblanch & Garner 2008). This shows that there is need to integrate interventions in order to archive health objectives.

There is a lot of information on the effectiveness of the P4P programs on improving incentivised indicators. But there is very few information on the level of motivation that is achieved by health care workers. This study gives information on the extent of motivation achieved by health care workers on different indicators and factors influencing performance of indicators

CHAPTER THREE

METHODOLOGY

3.1 Study site

The study was conducted in public, Faith Based Organisation and private health facilities in Mkuranga District. There are three levels of facilities, dispensary and health centres and district hospital. The district has 1 government hospital, 2 government health centres, 22 government dispensaries, 4 private dispensaries and 6 faith based dispensaries.

3.2 Study population

Health care workers of 35 Mkuranga health facilities which had been involved in at least one cycle of P4P program was the focus of the study. The health workers were found in dispensaries, health centres to district hospital of all types of ownership and CHMT members. These health facilities had a total number 288 HCWs where by 235 are in public, 31 in FBOs and in 22 private facilities

3.3 Study design

Cross sectional explorative evaluation design was adopted for the study . data for indicators were collected before the program using (DHIS Mkuranga data report of (2010) and after the program 2012 (DMO, Mkuranga DHIS data report 2012) to measure indicators performance. Information on the level of motivation before and after the - program was collected by interviewing health care workers using questioneer .

3.4. Sampling procedures

All Health facilities which were involved in P4P program were purposively selected for the study. These are 1 hospital, 2 health centres and 25 dispensaries. This was done purposely in order to reach health care workers who could respond to the questions and to have enough sample for the study. For dispensaries all health workers who were available at the facility during period of the study were asked to be in the study. For the hospital and health centre only health care workers who were involved in reproductive and child health services were involved in the study. Health facility in charge was asked to identify all health care workers who were participating in provision of reproductive and child health services responsible for identification of all health care workers who participated in provision of reproductive and child health services

For the indepth interview with key informants, reproductive and child health incharge was purposively selected from the hospital, two government health centres, two private dispensaries and all six FBO dispensaries were involved in the study. Simple random sampling using rotary method was used to select 5 government dispensaries out of 22. This was done by preparing sampling frame of all government dispensaries which have were involved in the four cycles of P4P program and measured the indicators in the study which are ANC clients receiving IPT2, health facility deliveries and under one year children vaccinated for PENTA3 and measles. All study units (HFs) was assigned unique numbers written in piece of papers, put in a jar and shook, there without looking in the jar the researcher selected five numbers which presented HFs involved in the study. Purposive sampling was used to select 2 CHMT key informants, Reproductive and Child health Coordinators and District P4P/DHIS focal persons and HF incharges for indepth interview to make a total sample of 18 key informants

3.4.1 Inclusion criteria

- All public, private and faith based health facilities in Mkuranga district which have been involved in the program for four cycles of implementation (From January 2011 to December 2012)
- All health care workers in the facility who had been in the district in any health facility for at least 1 cycle of P4P implementation.

3.4.2 Exclusion criteria

- Health facilities which are in P4P program, and did not measure for any indicators which are evaluated in this study.

3.5 Selection and training of research assistants

Research assistants with experience in data collection were recruited after being interviewed, there after trained for two days in order for them to comprehend clearly the objective of the study and questions to be asked, and to equip them with interviewing skills in interviewing and data collection.

3.5.1 Pre-testing

Pre testing of tool was done by principal investigator and research assistants. The pre test questionnaire was administered to fifteen respondents, three from the hospital, four from health centres, and eight from dispensaries of Kibaha district council in Pwani region. This district has characteristic resembling Mkuranga DC. The aim was to check for coherence, consistency, accuracy and validity.

3.5.2 Data collection instruments

Quantitative data was collected using structured closed ended questionnaires developed in English then back translated into Kiswahili. Only the Kiswahili version was used. Questions focus on level of HCWs motivation on four specific areas of services which are (1).ANC clients received IPT2 (2).Facility based deliveries (3).Children less than one year received measles vaccine (4). Children less than one year received PENTA 3 vaccine and factors influencing performance.

For the indepth interviews a tape recorder was used to record information during the interviews. A guide was used in conducting indepth interview with key informants from the CHMT and health facilities.

3.6 Data collection procedure

After obtaining administrative permission from DMOs office to conduct the study. HFs was visited and introduction of the researchers were done to HF incharge followed by detailed explanation of the study procedures. HF incharge were asked to identify HCWs who provided maternal and child health services and had an experience of not less than 1 cycle in P4P program to be involved in the study. After obtaining verbal consent from the participant and agreed, face to face interview was conducted with the health care worker administered by the research assistant using structured closed ended questionnaire in a private environment. During the period of data collection health facilities were visited more than once to make sure all health care workers were interviewed to avoid selection bias. Apart from health care workers who were at school and leave only2 HCWs were not interviewed for various reasons.

Thereafter indepth interview was conducted with HF incharge and selected CHMT using questions guide. The interview was recorded using tape recorder for a maximum of 15 minutes. Interview focuses on factors affecting performance of P4P indicators and measures taken to address them. At the end a word of thanks was given to participants. Questionnaires were crosschecked everyday by principal researcher to do corrections of collected data.

3.6.1 Documentary review

Source of data for performance indicators for each cycle was obtained from DHIS/P4P District focal person using computer soft ware called DHIS 2 tool at the DMOs office by taking the number of ANC clients receiving IPT2, number of facility based deliveries, children under one year receiving measles and PENTA 3 and target population for each facility for each specific object. These data was used to get indicators performance by finding the proportion of clients received services.

3.6.2 Health workers interview

For hospital and health centre only those who were providing reproductive and child health services were involved after being identified by Medical Officer incharge of the hospital. A Closed ended questionnaire was used. Questions were asked to know the status of motivation before and after implementation of the P4P program.

Six questions of how to improve uptake of IPT2 coverage to ANC clients were asked in a 5 point Likert scale before and after. Information collected focused on IPT health education, Availability of SP, ANC mobile and outreach services, Dispensing of IPT2 (DOTS), IPT 2 documentation.

Six questions of how to improve under one year old measles vaccine coverage were asked in 5 point Likert scale before and after P4P. Information collected focused on health education on immunization, measles administration, mobile and outreach services on immunization, ordering of measles from district store, follow up of unvaccinated children and proper documentation of immunized PENTA 3 children.

Six questions of how to improve under one year old children measles vaccine coverage were asked in 5 point Likert scale before and after the P4P. Information collected focused on health education on immunization, measles administration, mobile and outreach services on immunization, ordering of measles from district store, follow up of measles unvaccinated children and proper documentation of immunized measles children.

Six questions of how to improve Health facility delivery were asked in 5 point Likert scale before and after P4P. Information collected focused on health education at ANC on importance of HF delivery, Health education at the community on importance of HF delivery, referral of complicated ANC cases, proper documentation of labour and deliveries and mobile and outreach ANC services

3.6.3 Indepth interviews

Indepth interviews with health facility reproductive and child health i/c of selected HF and 2 CHMT key informants (DRCHco and P4P focal person) were conducted using questions guide. A face to face discussion between an interviewer and respondent was done and responses were recorded with tape recorder. Interview focused on factors that affect performance of health care worker the facility level and department level and steps taken to solve emerged problems.

3.6.1 Dependent variables

1. Number of ANC clients received IPT2
2. Number of Children under one year received PENT3 vaccine
3. Number of Children under one year received measles vaccine
4. Number of health facility deliveries

3.6.2 Independent variables

Financial incentives

- Salary
- Bonus
- Allowances (Statutory/Non statutory)
- Pension

Non-financial incentives

- Continuing education
- Working environment
- Type and level of facility
- Supervision
- Participatory leadership
- Recognition/appreciation
- Career development

3.7 Data management

During field work, principal researcher supervised the research assistants in the field and went through collected data on the same day to identify mistakes and inconsistency. The questionnaires were given serial numbers before data entry. Transportation of data was done using public transport and for security purpose photocopies was done and stored in a separate locked cabinet and soft copy data files stored in CD and hard drive with limited access. Data cleaning was done before analysis

3.7.1 Analysis of objectives

Health care workers performance on ANC clients received IPT2, children received measles, children received PENTA 3 and health facility delivery will be measured by asking 6 questions on motivation using 5 point Likert scale that is 5=Strongly agree, 2=Agree, 3=Neutral, “=Disagree and 5=Strongly disagree. The mean for each question before and after P4P program was calculated and compared using t- test to look for statistical significance. The performance of each indicator was calculated by finding the proportion of clients who receives services among the target population for that particular indicator before and after the P4P program and compared for significance performance based on set targets. For PENTA 3 vaccine, measles vaccine, health facility deliveries the coverage above 85% is high while for ANC clients receiving IPT2 the coverage above 80% is high. For all indicators performance below 50% is low. The observed difference in performance was tested for significance by comparing percentages at 95% confidence interval. Set target for all indicators was to achieve high coverage. Analysis was done by running cross tabulations and frequency tables. T-test was used to test for significance of likert scale mean difference between before and after the P4P program at 95% confidence interval by using SPSS version 15.0. Data was presented using tables.

For challenges which affects health care workers performance, analysis was done by transcribing recorded voice into text massages and then categorised into main theme and sub theme of interest and then was analysed before discussion.

3.8 Ethical consideration

The proposal was processed through School of Public Health and Social Sciences (SPHSS), and then the proposal submitted to the MUHAS Research and publication committee for ethical clearance. Permission to conduct research was requested from the local authority to mention.

A Consent from the participants was obtained after explanation of the aim of the study,to the participant, methodology and gain from the study, refuse to participate was accepted without penalty, no risky was anticipated from this study. The hierarchy of permission to conduct study was from RAS of Pwani region, then to DED Mkuranga and DMO of Mkuranga DC. Then the researcher reported to wards and village government officers before being introduced to HF workers for interview.

3.9 Limitation of the study

1. Since the study depended on reported information, there is possibility that respondent will give information were not reflecting reality.
2. Quality of data was not good. This may result into bias of performance measurement.

CHAPTER FOUR

RESULT

Table 1 show that, there were more females (82.9%) in the study compare to males. Results also shows that majority of respondents (43.9%) belongs to age group of 30 to 39. Furthermore table shows that majority (64%) of respondents in the study were from the government health facilities and few (24.4%) were from the private health facilities. Dispensaries have large number of respondents (75.6%) and hospital has few (14.6%) respondents. Furthermore table shows that there were very few doctors (2.4%) in the study, and majority (42.3%) of respondents were medical attendants.

Table 1.Social-demographic characteristics of the study sample by sex

Characteristics	**Respondents age**		
	Male n (%)	**Female n (%)**	**Total n (%)**
Age group in years			
20-29	4 (3.3)	22 (17.9)	26 (21.1)
30-39	5 (4.1)	49 (39.8)	54 (43.9)
40-49	7 (5.7)	24 (19.5)	31 (25.2)
50+	5 (4.1)	7 (5.7)	12 (9.8)
Total	**21 (17.1)**	**102 (82.9)**	**123 (100)**
Type of facility			
Government	14 (11.4)	64 (52.0)	73 (64.0)
FBO	3 (2.4)	27 (22.0)	30 (24.4)
Private	4 (3.3)	11 (8.9)	15 (12.2)
Total	**21 (17.1)**	**102 (82.9)**	**123 (100)**
Level of facility			
Hospital	2 (1.6)	16 (13.0)	18 (14.6)
Health centre	3 (2.4)	9 (7.5)	12 (9.8)
Dispensary	16 (13.0)	77 (62.6)	93 (75.6)
Total	**21 (17.1)**	**102 (82.9)**	**123 (100)**
Cadre			
Doctors	1 (0.8)	2 (1.6)	3 (2.4)
Clinicians	13 (10.6)	12 (9.8)	25 (20.3)
Nurses	1 (0.8)	42 (34.1)	43 (35.0)
Medical att	6 (4.9)	46 (37.8)	52 (42.3)
Total	**21 (17.1)**	**102 (82.9)**	**123 (100)**

Doctor's category- Medical Doctor and Assistant Medical Officer

Clinician's category- Clinical Officer and Assistant Clinical Officer

Nurses category- Nursing Officers, Assistant Nursing Officers and Enrolled nurses

Medical attendant- Medical attendant

Table 2 show that, majority (79.7%) of health workers had been in the program for 24 months and very few (3.3%) had implemented the program for 6 months.

Table 2. Duration of implementing P4P in a facility

	6 MONTHS	**12 MONTHS**	**18 MONTHS**	**24 MONTHS**	**TOTAL**
HOSPITAL	1 (0.8%)	5 (4.1%)	2 (1.6%)	10 (8.1%)	18 (14.6%)
HEALTH CENTER	0 (0.0%)	0 (0.0%)	0 (0.0%)	12 (12.2%)	12 (9.8%)
DISPENSAR	3 (2.4%)	9 (7.3%)	5 (4.1%)	76 (61.8%)	93 (75.6%)
TOTAL	**4 (3.3%)**	**14 (11.4%)**	**7 (5.7%)**	**98 (79.7%)**	**123 (100%)**

Table 3 shows that for the hospital the number of ANC clients who received IPT2 dose before the program was low (42%) compare to 128% which is above the expected target group after implementation of the program. For heath centre the number of clients was 24% and 61% before and after implementation of the program respectively. The observed increase was statistically significance ($p<0.001$). Furthermore for dispensaries the number of clients increased statistically significantly from 22% before the program to 79 % after the program ($p<0.001$). There is increase in number of clients in all levels of health facilities.

Table 3. Number of ANC clients received IPT2 before and after the P4P program

	Before P4P (2010)			After P4P (2012)			P-value
IPT2	ANC attended IPT2	Target population	Coverage of ANC received IPT2 (%)	ANC attended IPT2	Target population	Coverage of ANC received IPT2 (%)	
Hospital	186	438	42	338	344	128	*
Health cent	228	934	24	823	946	61	P<0.001
Dispensary	1447	6647	22	7407	6820	79	P<0.001

(*) Number of clients attended was greater than the expected target population

Table 4 show that, for hospital the number of clients attended was high (90% and 92%) before and after implementation of the P4P program respectively but the increase was not statistically significant (p=0.36). For health centres clients increased statistically significantly from 34% of the expected target group before the program to 97% after the program (p<0.001)

For dispensaries number of clients attended before the program was 84% and increased to 109% after implementation of the program. However number of clients attended was greater than expected target group. Generally there was an increase in the number of clients attended in all levels of health care.

Table 4. Number of children received measles vaccine before and after the P4P program

	Before P4P (2010)			After P4P			P-value
Measles	**Number of children vaccinated**	**Target population**	**Vaccination coverage (%)**	**Number of children vaccinated**	**Target population**	**Vaccination coverage (%)**	
Hospital	393	438	90	317	344	92	P=0.36
Health cent	617	934	66	882	946	93	P<0.001
Dispensary	5595	6647	84	7408	6820	109	*

(*) Number of clients attended was greater than the expected target population

Table 5 shows that for the hospital the number of clients attended for PENTA 3 decreased from 99% and 98% before and after P4P implementation respectively. The observed decrease was not statistic significant (p=0.303). For health centres the number of clients attended was 51% before the program and increased statistically significant to 87% after the program (p<0.001). Furthermore for dispensaries, 76% and 109% of the expected target population were attended before and after the program respectively. The number of clients attended after the program was greater than the expected target population. Overall there was an increase in the number of clients attended

Table 5. Number of children received PENTA 3 vaccine before and after the P4P program

	Before P4P (2010)			After P4P (2012)			P-value
PENTA 3	Number of children vaccinated	Target population	Vaccination coverage (%)	Number of children vaccinated	Target population	Vaccination coverage (%)	
Hospital	435	438	99	338	344	98	P=0.303
Health cent	481	934	51	823	946	87	P<0.001
Dispensary	5067	6647	76	7407	6820	109	*

(*) Number of clients attended was greater than the expected target population

Table 6 show that number of facility deliveries for hospital was remarkably high above the expected target population (270% and 782%) before and after the program respectively. For health centres number of clients attended for facility deliveries was low (15%) before the program compare to 51% after the program. The observed changes was statistically significant ($p<0.001$). Moreover for dispensaries the number of clients delivered at the facilities increased statistically significant from 23% before the program to 49% after the program ($p<0.001$)

Table 6. Number of health facility deliveries before and after the P4P program

	Before P4P (2010)			After P4P (2012)			P-value
Facility deliveries	Number of facility deliveries	Target population	Coverage of facility deliveries (%)	Number of facility deliveries	Target population	Coverage of facility deliveries (%)	
Hospital	1183	438	270	2689	344	782	*
Health cent	143	934	15	481	946	51	P<0.001
Dispensary	1548	6647	23	4045	6820	49	P<0.001

(*) Number of clients attended was greater than the expected target population

4.2.1. Likert scale mean score and statistical test as reported by respondents related to performance to increase coverage of ANC clients who received IPT2

Motivation of health care worker to perform activities that contributes to increase in the number of clients who received IPT2 Malaria prophylaxis shows improvement after the P4P program. Table 7 shows that to conduct health education on IPT2 the mean score was 4.11 before P4P and 4.83 after P4P program. Motivation to make sure SP is available at ANC all the time the mean score was 4.08 before and 4.84 after P4P program. Furthermore motivation to conduct mobile and outreach clinic routine to provide antenatal services the mean score was 3.64 before and 4.61 after P4P program while motivation to make sure all ANC clients received IPT2 dose the mean score was 4.14 before and 4.84 after P4P program. For motivation to make sure all ANC clients received IPT2 dose and swallow directly observed at clinic (DOTS) the mean score was 4.14 before and 4.77 after P4P program. They were also asked about motivation to document properly all ANC clients who received IPT2 and the mean score was 4.06 before and 4.80 after P4P program. These results indicate that on average the difference in motivation to perform activities before and after the P4P program was statistically significant. ($p<0.001$)

Table 7.Likert scale mean scores, standard deviation and statistical test for performance to increase ANC clients received IPT2 Malaria prophylaxis

	Before P4P		**After P4P**		**P-value of mean comparison**
Statement	**Mean**	**Std**	**Mean**	**Std**	
Are you motivated to conduct health education on IPT	4.11	0.625	4.83	0.491	P<0.001
Are you motivated to make sure SP is available at ANC all the time	4.08	0.708	4.84	0.432	P<0.001
Are you motivate to conduct mobile and outreach clinic routine to provide antenatal services	3.64	0.993	4.61	0.826	P<0.001
Are you motivated to make sure all ANC clients receive IPT2	4.15	0.725	4.84	0.468	P<0.001
Are you motivated to make sure all ANC clients receive IPT2 dose and swallow directly observed at clinic (DOTS)	4.14	0.871	4.77	0.625	P<0.001
Are you motivated to document properly all ANC clients who receive IPT2	4.06	0.823	4.80	0.523	P<0.001
Average	**4.03**		**4.78**		**P<0.001**

4.3.1. Likert scale mean scores and statistical test as reported by respondents related to increase coverage of measles vaccine

Motivation of health care worker to perform activities that contributes to increase in the number of children received Measles vaccine shows improvement after the P4P program. Table 8 shows that, conducting heath education on measles immunization the mean score before P4P program was 4.17 and after the P4P program was 4.74. Administering measles to under one year old child routine the mean score before the P4P program was 4.27 and the mean score after the program was 4.81. Furthermore to conduct mobile and outreach measles immunization services the mean score before the program was 4.50 and after the program dropped to 3.98. The mean score for ordering vaccine from the district store

(DVS) before the program was 4.70 and after the program was 3.98, furthermore to do follow up to less than one year old child who is not immunized measles vaccine the mean score before the program was 4.08 and after the program was 4.70 and to document properly all measles immunized children the mean score before was 4.22 and after the program was 4.84

This indicate that there are activities that motivation dropped after the P4P program although most of them motivation raised after the P4P program. This indicate that on average difference level of motivation to health care worker to perform activities that increased number of children received measles vaccine before and after P4P program was statistically significant at five percent level (P<0.001)

Table 8. Likert scale mean score, standard deviation and statistical test for performance to increase number of children received measles

1=strongly agree, 2=Agree, 3=Neutral, 4=Disagree and 5= strongly disagree

	Before P4P		**After P4P**		**P-value of mean comparison**
Statement	**Mean**	**Std**	**Mean**	**Std**	
Are you motivated to conduct heath education on measles immunization	4.17	0.074	4.74	0.711	P<0.001
Are you motivated to administer measles to under one year old child routine	4.27	0.615	4.81	0.412	P<0.001
Are you motivated to conduct mobile and outreach immunization services	4.50	1.011	3.98	0.949	P<0.001
Are you motivated to order measles vaccines from district vaccine store (DVS)	4.70	0.626	4.27	0.641	P<0.001
Are you motivated to do follow up to less than one year old child who is not immunized measles vaccine	4.08	0.685	4.70	0.626	P<0.001
Are you motivated to document properly all measles immunized children	4.22	0.763	4.84	0.485	P<0.001
Average	**4.32**		**4.55**		**P<0.001**

4.4.1. Likert scale mean scores and statistical test as reported by respondents related to performance to increase PENTA 3 vaccine coverage

Motivation of health care worker to perform activities that contributes to health care performance to increase in the number of children receiving PENTA 3 vaccine shows improvement after the P4P program. Table 9 shows that, conducting heath education on PENTA3 immunization the mean score before P4P program was 4.15 and after the P4P program was 4.80. Administering PENTA3 to under one year old child routine the mean score before the P4P program was 4.15 and after the program was 4.73. To conduct mobile and outreach PENTA3 immunization services the mean score before the program was 3.79 and after the program dropped to 4.41. Furthermore, ordering of PENTA3 vaccines from district vaccine store (DVS) the mean score before the program was 4.25 and after the program 4.72. Follow up to less than one year old child who are not immunized PENTA3 vaccine the mean score before the program was 4.18 and after the program was 4.68 and to document properly all PENTA3 immunized children the mean score before was 4.24 and after the program was 4.78. This indicate that on average the difference in motivation of health worker to perform activities that increased number of children received PENTA3 vaccine before and after P4P program is statistically significant at five percent level ($P<0.001$)

Table 9.Likert scale mean scores, standard deviation and statistical test for performances to increase number of children under one year old receiving PENTA 3 vaccine

	Before P4P		**After P4P**		**P-value of Mean comparison**
Statement	**Mean**	**Std**	**Mean**	**Std**	
Are you motivated to conduct heath education on PENTA immunization	4.15	0.725	4.80	0.553	P<0.001
Are you motivated to administer PENTA3 to under one year old child routine	4.15	0.779	4.73	0.602	P<0.001
Are you motivated to conduct mobile and outreach immunization services	3.79	0.952	4.41	1.047	P<0.001
Are you motivated to order vaccines from district vaccine store (DVS)	4.25	0.785	4.72	0.728	P<0.001
Are you motivated to do Follow up to less than one year child old who is not immunized PENTA 3 vaccine	4.18	0.690	4.68	0.605	P<0.001
Are you motivated to document properly all PENTA 3 immunized children	4.24	0.602	4.78	0.608	P<0.001
Average	**4.12**		**4.68**		**P<0.001**

4.5.1. Likert scale mean scores and statistical test as reported by respondents related to performance to increase health facility deliveries

Motivation of health care worker to perform activities that contributes to increase in the number of health facility delivery shows improvement after the P4P program. Table 10 shows that, conducting health education at ANC on importance of Health facility delivery the mean score before the program was 4.33 and after the program was 4.93. To conduct health education to the community on importance of health facility delivery the mean score before the program was 4.22 and after the program were 4.86. Furthermore to conduct delivery at health facility the mean score before the program was 4.24 and after the program were 4.86. To refer ANC clients with complication to higher health facility level the mean score before the program was 4.31 and 4.71 respectively, and to record properly all deliveries conducted at health facility the mean score before was 4.34 and before the program was 4.89. There was an increase in motivation mean score for all activities after

the program. This indicate that on average the difference in motivation to heath worker to perform activities that increased number of heath facility deliveries before and after P4P program was statistically significant at five percent level (P<0.001)

Table10.Likertscale mean scores, standard deviation and statistical test for performance to increase number of health facility deliveries

	Before P4P		**After P4P**		**P-value of Mean comparison**
Statement	**Mean**	**Std**	**Mean**	**Std**	
Are you motivated to give health education at ANC on importance of Health facility delivery	4.33	0.695	4.92	0.274	P<0.001
Are you motivated to give health education to the community importance of health facility delivery	4.22	0.647	4.86	0.501	P<0.001
Are you motivated to conduct delivery at Health facility	4.24	0.793	4.86	0.411	P<0.001
Are you motivated to refer ANC clients with complication to higher health facility level	4.31	0.762	4.71	0.766	P<0.001
Are you motivated to record properly all deliveries conducted at health facility	4.34	0.734	4.89	0.388	P<0.001
Are you motivated to conduct mobile and outreach antenatal services	3.89	0.930	4.32	1.019	P<0.001
Average	**4.22**		**4.76**		**P<0.001**

Factors affecting performance of health care workers

4.6.1 Lack of skills and enough number of health staff.

In this study, it was found that majority of RCH incharges reported shortage of health staff as one factor compromising delivery of health services. Majority of government dispensaries had an average of 3 health care workers who had to attend reproductive and child health services to the facility as well as to the community.

One RCH incharge reported that,

……"We are only two health workers and have to do all the work in the facility at the same time. We have to conduct mobile and outreach routes clinics to the villages, you can imagine how tiresome it is, and sometimes you miss to document and organize the records"

Another health worker reported that,

……"*Our facility is attending many clients even those who are not in our catchment area, due to these intensive clinics we are not even sure if what we are doing is what we are supposed to do, you can imagine we are very few and we have to vaccinate more than 150 children, at the same time patients have to be attended, and we don't have a clinician"(R3)*

CHMT member reported that,

…….. *"The quality of data is a problem and the reason is that, many health care workers in the facilities are unskilled so despite big efforts to equip those health workers with data management skills but their understanding is limited, although they are trying to their best"(R17)*

4.6.2. Shortage of medicines and medical supplies

Shortage of medicines and medical equipments were reported to some of the facilities as the factors which when occurred performance of service delivery is compromised. For example SP, supplies for delivery like cotton wool, gloves and equipments like forceps. Some facilities reported running out of stock of vaccines.

In one of the facility RCH incharge reported that,

……"*For the case of IPT2 sometimes we run shortage of SP, and when we advise clients to go and buy them they do not afford, however even when they respond positively it is difficult for me to document in the records since am not sure if they administered it, so it become difficult to achieve our set target*" (R4)

Another RCH incharge reported that "*Sometimes we run short of vaccine and it is unfortunately they are not sold in private medical stores, the only thing we can do is just to wait for DMOs office to deliver so that we can continue to provide service*" (R6)

Problem of shortages of equipment were also reported by RCH incharge

……. "*Currently number of facility deliveries is improving but before P4P we had shortages of equipments for deliveries and clients had to buy from private medical stores. This discouraged them and number of facility deliveries dropped. After P4P we have been using facility payout to buy equipments and supplies for deliveries and the situation is much better*" (R10)

4.6.3. Lack of transportation

Lack of reliable transportation has been reported to be a big problem to some of the facility that give mobile clinics to distant villages, They have to rely transportation from the villagers, as a result most of time they fail to do mobile clinics.

One RCH incharge reported

……"*We have one village which is very far from here, we rely on bicycles from the village for transportation, it is not safe and when we get there we are already tired, sometimes we use our own money to facilitate transport, at least DMOs office should make transportation arrangement for mobile routes*"(7)

The problem of transportation was also reported by CHMT member,

……"*Transportation is still a challenge that we fail to conduct supportive supervision to health facilities on data management and this make the quality of data recorded to be substandard*" (R17)

4.6.4. Unreliable health information

Health workers reported challenges encountered on health information. The standard of recording and reporting is variable across health facilities. However, other facilities relied on untrained staff with limited understanding of the purpose and process involved. Furthermore other facilities due to increase in workload proper documentation has become a major problem.

One RCH incharge reported that,

……..“*Sometimes when we have a lot of clients recording of information is a challenge, so we concentrate on providing services until at the end of the day and then you realize that, there are a lot of gaps in the registers registering process which do not correspond with the number of clients attended”(R6)*

With regard to this problem, it was reported by one CHMT that,

……..”*We need more health staff to enter data in the DHIS tool because there are so many facilities with lots of forms to validate and enter into the system, for the current situation it’s very tiresome. As a result, sometimes you make mistake entering data or we fail to enter data on time*” (R17)

4.7. Summary of results

Pay for performance program shows significant improvement on the level of motivation for health care workers performance during implementation of the program. It was also found that there was significant increase in number of ANC clients received IPT2 for hospital, health centre and dispensaries. There was statistic significance for observed changes in health centre and dispensary ($p<0.001$). For Children received Measles vaccine there was slight drop of number of clients for hospital but they managed to maintain their performance above the set target of 85%. There was no statistic significance for observed changes ($p=0.36$). For dispensaries the number of clients for measles was greater than target population while for health centre there was significant increase in number of clients attended and the observed changes was statistically significant ($p<0.001$). Facility deliveries findings show increase in the number of clients for dispensaries and health centres and the changes was statistically significant ($p<0.001$). For hospital the number of clients attended for facility deliveries exceeded the target population both before and after

the P4P program. PENTA 3 vaccine results show despite slight drop of number of clients for hospital but they still maintained number of clients attended above the set target. The observed changes was not statistically significant ($p<0.001$) Furthermore number of facility deliveries increased in health centres and dispensaries, and the observed changes was statistically significant ($p<0.001$). Despite increase in the number of facility deliveries for hospital but the number of clients attended was greater than the expected target population.

Findings show that challenges that were explored on implementation of the program on increasing number of ANC clients received IPT2, number of health facility deliveries, number of children received PENTA 3 and Measles vaccine were shortage of skilled health staff, shortage of medicine and medical equipments, unreliable health information and lack of reliable transport for supportive supervision by DMOs office and outreach clinics for health workers from the facilities.

CHAPTER FIVE:

DISCUSSION

The study was designed to evaluate the role of Pay for performance Program (P4P) in motivating health care workers to increase number of clients received reproductive and child health services on specific health indicators. Furthermore, to explore challenges faced by health care workers during implementation of the P4P program. This was done by comparing level of health care workers motivation and number of clients attended before and after P4P program.

This study generally found that P4P motivates health workers to improve performance throughout different levels.

5.1. The role of P4P in improving focused antenatal care services to increase ANC clients who received IPT 2 Malaria Prophylaxis

The primary aim of P4P program is to raise work motivation to health workers in order to improve their performance (Witter et al. 2012). In this study, most of respondents reported to be motivated to perform activities that contributed to increase in the number of ANC clients who received IPT2 Malaria prophylaxis. Those activities were to conduct health education on IPT2 to ANC so as to raise awareness, the motive of health care worker to make sure SPs are available at the facility throughout the year by ordering them on time to avoid unnecessary stockouts. Administration of IPT2 dose to all eligible ANC clients not only that but also to make sure that all ANC clients who received IPT2 dose swallow before they leave the clinic and lastly documenting clearly on recording tools for accurate reporting. Improvement on the level of motivation could have been attributed by the bonus which was paid directly to health care workers during the program.

The study findings also show that there was increase of clients who received IPT2 dose for all levels of primary health care. The observed improvement was statistically significant for dispensary and health centre ($p<0.001$). For the hospital findings show that number of ANC clients received IPT2 dose was greater than the expected target population. This implies that numerator includes clients who are out of catchment population. On the other hand, this is possible because the hospital is the only referral facility in the district. The problem with that is when measuring for performance it gives the wrong picture of the

proportion of target population who were attended. Another explanation is that may be data were exaggerated or they were dealing with wrong population projections.

This increase in the number of ANC clients attended became possible because pregnant women were found to start antenatal clinic earlier than before the program so that they can finish their second dose of IPT2 before they give birth. During an interview, it was found that facilities experienced running out of stock of SP very occasional and this enables them to provide IPT2 dose as scheduled in most of the time. These findings are contrary to study which was done in Rwanda where pregnant women were found to start ANC clinic very late and became difficult to complete visits in ANC clinics (Basinga et al. 2010). This show that community interventions to raise awareness plays a very important role for health care providers to improve their performance

5.2. The role of P4P on improving child health services to increase number of Children under one year old receiving measles vaccine

In this study it was found that, health care workers were motivated significantly by the program to perform activities that contributed to increase in the number of children receiving Measles vaccine. Those activities were, to conduct health education on measles vaccination, to administer measles vaccine to a child as well as to conduct mobile and outreach clinic for measles vaccine. Health workers were also measured for motivation to order measles vaccine from District Vaccine Store (DVS) and furthermore to make sure all lost to follow up children are found and vaccinated. In addition to that proper documentation of all immunized children are efficiently monitored and reported.

The study also found that, for the hospital, number of children who had received measles vaccine did not increase. Although there was no increase in that area, they had already reached the target which was 85%. According to P4P rules for bonus payment, facilities have to maintain the number of clients attended above 85% to be paid a bonus. This may be the reason why health worker may relax and be comfortable with such performance and put less effort. For health centres the number of clients attended increased statistically significantly. It was found that, number of measles clients attended for dispensaries was more than the target population which means numerator included clients outside their defined service population. Reason for this increase might be due to children who were attended from outside the catchment area such as neighbouring districts Temeke, Ilala and

Rufiji. Increased number of outreach clinics and implementation of immunization week every year to reach all unvaccinated children had enormous contribution to this achievement.

The study in Rwanda shows no impact on child vaccination and this was explained by the fact that the base line was 65% and the government implemented an intensive national immunization campaign. An increase beyond that would require substantial effort by the provider to reach unvaccinated children in the community and that was difficult for health care providers (Basinga et al. 2010). This implies that despite P4P having positive role on improving health care performance but financial incentives alone have limited effect towards health outcome.

5.3. The role of P4P in improving child health services to increase number of Children under one year old receiving PENTA 3 vaccination

This study also shows similar improvement of motivation to health workers to perform activities that have contribution to the increase of the number of children who have received PENTA 3 vaccine like it was for measles vaccine. Hospital findings show very small drop of on the number of clients attended from 99% before the program to 98% after the program but the change was not statistically significant. Again this can be explained by the fact that they had reached the target, at this coverage health care workers had to maintain number of clients who were attended for PENTA 3 vaccine above 85% to be paid bonuses. Hospital does not experience problems that are encountered by peripheral facilities like transportation for outreach clinics or availability of vaccines because they are proximal to District vaccine Store. Furthermore, they have enough skilled staff to conduct RCH services. For health centres there was an increase in the number of clients attended with statistical significance. It was found that dispensary findings show similar pattern like for Measles vaccine where number of clients attended was greater than the target population. This may be caused by inclusion of children outside their catchment population in the numerator. Most of the children might be from neighbouring districts of Temeke, Ilala and Rufiji. In order to reach large target population strategies such as effective implementation of immunization week which was accompanied by extensive search for unvaccinated children were used. During this week multiple approaches were used for example to conduct many outreach clinics, to conduct house to house search for unvaccinated children and establishing vaccination posts in areas where it is hard to reach.

These results corroborates with another evaluation study which shows improvement for DPT3 vaccine. It was explained that, this improvement was contributed by the big investment in Expanded Program on Immunization and for that matter this kind of results were expected (Canavan & Kit 2008).

5.4. The role of P4P on improving child health services to increase number of facility-based deliveries

This study shows that there was improvement in the level of motivation to health care workers to perform activities that have contribution to the increase in number of health facility deliveries. Those activities were to give health education at antenatal care (ANC) clinic on importance of health facility deliveries. To conduct delivery at the facility but also to give referral ANC clients with complication to higher level of services. Furthermore conducting mobile and outreach clinic for antenatal services and to document properly all deliveries at the facility to keep good records.

In this study finding shows that, hospital deliveries increased remarkably. The coverage of facility delivery increased from 270% to 782% which is far beyond the expected target population. This means that number of clients attended is greater than the target population. This implies that many clients came from outside the catchment area and this is because the hospital is the only referral facility in the district. However it was reported that many clients from Mbagala, Dar Es Salaam also prefer to deliver at Mkuranga hospital. There is a need to measure the quality of health care delivery because this huge increase may compromise the quality of service offered. There is a possibility that there are women within the catchment area who delivered at home but it's difficult to identify the gap. For health centres and dispensaries findings show that there was statistical significant increase in the number of facility deliveries although the target of 80% was not reached. This may be due to increased referrals to district hospital as findings shows an extremely large number of deliveries in the district hospital. These facilities have to find out if the existing gap is due to referrals to district hospital or is due to home deliveries.

These findings corroborates with case control study done in Rwanda whereby heath facility deliveries showed an impact. Reason for that achievement was the fact that facility deliveries were highly paid compared to other indicators and were found to be lucrative by health care workers that they even commissioned community health worker to conduct

outreach in the community to find pregnant women. (Basinga et al. 2010). In contrary this mode of payment was different from the one used at Mkuranga district whereby bonus payout is flat to all performance indicators.

In another study, it was found that health facility deliveries declined in P4P facilities compared to non P4P facilities (Canavan & Kit 2008). The difference in findings may be due to different methodology used which was used in this study.

5.5. Factors affecting achievement

During implementation of P4P program health workers were experiencing many challenges across the entire health system from the community to administrative simplicity which is an obstacle towards achieving defined health performance indicators(Baker 2003.). In this study it was found that health care workers experienced challenges during implementation of the program.

5.5.1. Lack of skills and enough number of health staff.

In many countries worldwide health workers shortages are one of the major constraints in achieving health goals (Bärnighausen & Bloom 2009a). Inadequate staffing in health facilities has been reported in one study which found that only 14% and 20% of clinical officers and nurses respectively were employed (Manzi et al, 2012). This finding corroborates with findings in this study which shows that many heath facilities have very few health staff and majority of them are medical attendants. Results in this study shows that 44% of health workers are medical attendants. It has to be remembered these are the ones who are working in RCH but they have to attend other activities as well. This finding corroborates with finding from another study which shows an average of 3 health staff in the facilities with an average of one absentee due to social problem (Gross et al. 2012). For this matter it becomes very difficult to attend all duties very efficiently. For example, to do mobile and outreach clinics in order to reach the target population to provide reproductive and child health services or to do follow up of unvaccinated children or pregnant women with complication in the community. Compromised performance due to overwork was also reported in another study done in Kenya (Manafa et al. 2009)

5.5.2. Shortage of medicines and medical equipment

This poses another challenge on provision of healthcare services especially in low income countries were recurrent stockout is very common (Gross et al. 2012). Another study found that chronic shortages of equipment and medicines are still a challenge on delivering health care in primary health care facilities (Kwesigabo et al, 2012). Some of health facilities reported shortages of essential medicine especially SP which are used in intermittent presumptive prophylaxis for malaria (IPT). This contributed to low uptake of IPT2 dose to the target population of that particular facility. It was reported that, when they gave clients prescription to go and buy from private medical stores most of them could not afford the cost of medicines. During an interview one RCH incharge reported shortage of vaccines although she admitted it's not very common. During this period of stockout immunization services are usually compromised. Another problem is lack of enough equipment for delivery and clients had to buy for themselves. This was very serious problem in one of the health facility that showed drop in number of facility deliveries until they have decided to use P4P facility funds to procure some of the supplies to reduce cost burden to their clients and thereafter the number of ANC who attends health facility for delivery increased.

4.5.3. Lack of reliable transportation

This challenge was mentioned by facilities as well as DMOs office. Health workers from facilities face this challenge during mobile and outreach clinics. This finding corroborate with another study which found that inadequate communication due to lack of transportation is one of the big challenge on health care delivery (Kwesigabo et al, 2012). Some facilities have villages which are distant. The big problem with such scenario is that members of community come to hospital only when they feel sick. The only means to provide RCH services is to make sure outreach clinics are conducted routinely. Due to this problem, arrangement has been done with village leaders to use bicycles. The problem was reliability of this mode of transportation. Sometimes they come late and when they go to the village they find clients had already dispersed after long wait. It was reported that, sometimes health workers use their own money to facilitate transport for outreach clinics. Under such circumstances efficiency of outreach clinics was compromised.

Lack of reliable transportation from the DMOs office was another challenge of a big concern which was also found in this study. Health facilities needs close supportive

supervision. With regard that majority of health care workers are unskilled means that mentoring and coaching was very important component to give them skills not only on data management but also on other aspects of health delivery as the means to improve their working capacity.

4.5.4. Unreliable health information

It was found that 6 years after inception of HIMS, the problem of data quality is still a challenge in Tanzania (Matthew Smith et al 2008). Health information is very crucial on understanding performance of health services delivery. In this study it was found that health care workers from the District Medical office (CHMT) to health facilities they were experiencing problems which compromised the quality of data. The reason highlighted was lack of skills to majority of health care workers at the facilities on data management, increased work load due to shortage of health staff which compromise efficiency of health care worker performance. Another reason was lack of supportive supervision from the CHMT on Health Management Information System (HMIS) due to lack of transport, as a result validation of data at the facilities in order to improve the quality of data was not done as scheduled.

This problem was reflected by denominators which were greater than the target population. This could be due to either wrong data recording of clients attended for services or wrong projections of target population. Furthermore may be due to clients from outside the catchment area. As a result it's very difficult to understand if the desired target population for that particular facility has been reached.

Another study shows related findings that quality of data was a problem and was suggested that target population should be revised regularly (Canavan & Kit 2008)

CHAPTER SIX

CONCLUSION AND RECOMENDATION

6.1. Conclusion

The study found that Pay for Performance (P4P) plays a positive role on improving health care workers performance by increasing the number of clients received reproductive and child health services.

- Pay for performance program (P4P) increased the number of ANC clients received IPT2 dose of malaria prophylaxis by motivating health care workers.
- Pay for performance program (P4P) increased the number of children received measles vaccine by motivating health care workers
- Pay for performance program (P4P) increased the number of children received PENTA 3 vaccine by motivating health care workers.
- Pay for performance program (P4P) increased the number of health facility deliveries by motivating health care workers.
- In this study several factors which affected performance in P4P program on increasing number of ANC clients received IPT2, number of health facility deliveries, number of children received PENTA3 and measles vaccine were explored. Factors which were mentioned repeatedly was lack of enough staff especially skilled ones, shortage of medicine and medical equipments.

6.2. Recommendations.

- Pay for Performance program should be extended to other regions of Tanzania, however quality of health should be incorporated as one of the component in measuring health outcomes.

- There is a need to review data especially target populations, but also to find good means of reporting which will differentiate target/service population to those outside the target population. This will help to provide accurate measurement of the performance.

- In order to achieve health goals then focus should not be on health worker motivation alone but rather to other components of health system as well such as health delivery and health information system to ensure sustainability.

- Case control studies should be done to evaluate the role of P4P on improving health care workers performance on delivering health care services.

REFERENCES

Aslan, I., 2011. A MOTIVATION STUDY ON THE EFFECTIVENESS OF INTRINSIC AND EXTRINSIC FACTORS. *Methodology*, 16, pp.690–696. Available at: http://www.ktu.lt/lt/mokslas/zurnalai/ekovad/16/1822-6515-2011-0690.pdf.

Baker, G., John H.,Peter M.,: 2008, Pay for Performance Incentive Programs in Healthcare : A reserch report.

Bärnighausen, T. & Bloom, D.E., 2009a. Designing financial-incentive programmes for return of medical service in underserved areas: seven management functions. *Human Resources for Health*, 7, p.52.

Bärnighausen, T. & Bloom, D.E., 2009b. Financial incentives for return of service in underserved areas: a systematic review. *BMC Health Services Research*, 9(1), p.86. A

Basinga, P., Gertler, P.J. & Vermeersch, C.M.J., 2010. Paying Primary Health Care Centers for Performance in Rwanda. *World*, 1(January), pp.1–29.

Bosch-Capblanch, X. & Garner, P., 2008. Primary health care supervision in developing countries. *Tropical medicine international health TM IH*, 13(3), pp.369–383. Available at: http://www.ncbi.nlm.nih.gov/pubmed/18397400.

Busogoro, J.-F. & Beith, A., 2010. Pay for Performance for Improved Health in Burundi C. A. Coello Coello & G. B. Lamont, eds. *healthsystems2020org*, pp.1–28. Available at: http://www.healthsystems2020.org/files/2575_file_Burundi_Brief_FIN_2_14_Sept_2.pdf.

Canavan, A. & Kit, H.A., 2008. Payment for Performance (P4P) Evaluation. , 31(0).

Chandler, C.I.R. et al., 2009. Motivation, money and respect: a mixed-method study of Tanzanian non-physician clinicians. *Social science medicine*, 68(11), pp.2078–2088.

Cromwell, J. et al., 2011. *Pay for Performance in Health Care : Methods and Approaches Edited by*, Jerry Cromwell, Michael G Trisolin, Gregory C. Pope and Janet B. Mitchell.

Gross, K., Pfeiffer, C. & Obrist, B., 2012. Workhood " – a useful concept for the analysis of health workers ' resources ? An evaluation from Tanzania. *BMC Health Services Research*, 12(1)

Fatuma, M., Guy, H.,Mbuya, C.,Kizito, S, 2012.: Human resource for health care delivery in Tanzania: A multifacated problem: Human resource for health: BMC Journal 10:3 doi 10.1186/1478-4491-10-3

Gupta, N. et al., 2011. Human resources for maternal, newborn and child health: from measurement and planning to performance for improved health outcomes. *Human Resources for Health*, 9(1), p.16.

Van Herck, P. et al., 2011. Pay-for-performance step-by-step: introduction to the MIMIQ model. *Health Policy*, 102(1), pp.8–17. Available at: http://www.ncbi.nlm.nih.gov/pubmed/21035228.

Van Herck, P. et al., 2010. Systematic review: Effects, design choices, and context of pay-for-performance in health care. *BMC Health Services Research*, 10(1), p.247.

Jones, M. et al., 2010. An alternative to pay-for-performance: one health plan's approach to quality improvement. *Journal for healthcare quality official publication of the National Association for Healthcare Quality*, 33(1), pp.22–29.

Leshabari, M.T. et al., 2008. Motivation of health care workers in Tanzania: a case study of Muhimbili National Hospital. *East African journal of public health*, 5(1), pp.32–37. Available at: http://www.ncbi.nlm.nih.gov/pubmed/22066277.

Long, J.A., Helweg-Larsen, M. & Volpp, K.G., 2008. Patient opinions regarding "pay for performance for patients". *Journal of General Internal Medicine*, 23(10), pp.1647–52.

Manafa, O. et al., 2009. Retention of health workers in Malawi: perspectives of health workers and district management. *Human Resources for Health*, 7(65), p.65.

Manongi, R.N., Marchant, T.C. & Bygbjerg, I.C., 2006. Improving motivation among primary health care workers in Tanzania: a health worker perspective. *Human Resources for Health*, 4(1), p.6.

Metthew, S.,Shirin, M., Adebusoye, A., Malecela,M., Edwin,M.,: Intergrated Health information system in Tanzania: Experience and challenges. EJISDC 33,1, 1-33

Peckham, S. & Wallace, A., 2010. Pay for performance schemes in primary care: what have we learnt? *Quality in Primary Care*, 18(2), pp.111–116. Available at: http://ukpmc.ac.uk/abstract/MED/20529472.

Peters, D.H. et al., 2010. Job satisfaction and motivation of health workers in public and private sectors: cross-sectional analysis from two Indian states. *Human Resources for Health*, 8(1), p.27.

Schrappe, M. & Gültekin, N., 2011. Pay for performance (P4P). Long-term effects and perspectives. *Bundesgesundheitsblatt Gesundheitsforschung Gesundheitsschutz*, 54(2), pp.166–170.

Shi, Y., 2008. What impact does physician pay-for-performance program have on the quality of health care in office-based chronic disease care ? — A systematic review Submitted by : Peace Country Health , Alberta SEARCH Canada.

Siril, H. et al., 2011. Stress, motivation and professional satisfaction among health care workers in HIV/AIDS care and treatment centers in urban Tanzania: a cross-sectional study. *East African journal of public health*, 8(1), pp.17–24.

Werner, R.M. et al., 2011. The effect of pay-for-performance in hospitals: lessons for quality improvement. *Health Affairs*, 30(4), pp.690–698. Available at: http://www.ncbi.nlm.nih.gov/pubmed/21471490.

Willis-Shattuck, M. et al., 2008. Motivation and retention of health workers in developing countries: a systematic review. *BMC Health Services Research*, 8(1), p.247.

Witter, S. et al., 2012. Paying for performance to improve the delivery of health interventions in low- and middle-income countries (Review) SUMMARY OF FINDINGS FOR THE MAIN COMPARISON. , (2).

APPENDICES

Appendix i: Questionnaire for facility health care worker (English version)

A STUDY ON THE ROLE OF PAY FOR PERFOMANCE IN IMPROVING MATERNAL AND CHILD HEALTH STATUS IN MKURANGA DISTRICT

1. Questionnaire Number…….

2. Name of health facility……..

3. Level of health facility…… (Hospital, Health centre or Dispensary)

4. Date of the interview……

5. Type of health facility

1= Government
2= Faith based organization
3=Private

PART ONE: DERMOGRAPHIC DATA/INFORMATION

6. Age of respondent in years…….

1. Sex

0=Male 1=Female

7. Experience in Pay for performance program

1=1cycle 2=2 cycle

3=3 cycle 4=4 cycle

8. What is your cadre?

NO	NAME OF CADRE	NO	NAME OF CADRE
1	Medical officer	10	Clinical officer
2	Dental officer	11	Clinical assistant
3	Assistant dental officer	12	Dental therapist
4	Assistant medical officer	13	Pharmaceutical assistant
5	Assistant radiologist	14	Laboratory technologist
6	Nurse officer	15	Medical attendants
7	Assistant nurse officer	16	Environmental health officers
8	Enrolled nurse	17	Health secretary
9	Social welfare officer	18	Nutritionist

PART 2: QUESTIONS

QUESTIONS ON FOCUSED ANTENATL CARE SERVICES

No	Question	Before P4P					After P4P				
		5	4	3	2	1	5	4	3	2	1
1	Are you motivated by P4P to conduct health education on IPT to ANC clients?										
2	Are you motivated by P4P to make sure SP is available at ANC all the time?										
3	Are you motivated by P4P to conduct mobile and outreach clinic routine to provide antenatal services?										
4	Are you motivated by P4P to make sure all ANC clients receive IPT2 dose?										
5	Are you motivated by P4P to make sure all ANC clients receive IPT2 dose and swallow directly observed at clinic (DOTS)?										
6	Are you motivated by P4P to document properly all ANC clients who receive IPT2?										

Likert scale : 5=Strongly agree, 4=Agree, 3=Neutral, 2=Disagree, 1=Strongly disagree

QUESTIONS ON CHILD HEALHT SERVICES (MEASLES VACCINE)

No	Question	Before P4P					After P4P				
		5	4	3	2	1	5	4	3	2	1
7	Are you motivated to conduct heath education on immunization?										
8	Are you motivated by P4P to administer measles to under one year old child routine?										
9	Are you motivated by P4P to conduct mobile and outreach immunization services?										
10	Are you motivated by P4P to order vaccines from district vaccine store (DVS)?										
11	Are you motivated by P4P to do follow up to under one year old child who is not immunized measles vaccine?										
12	Are you motivated by P4P to document properly all measles immunized children?										

Likert scale : 5=Strongly agree, 4=Agree, 3=Neutral, 2=Disagree, 1=Strongly disagree

QUESTIONS ON CHILD HEALHT SERVICES (PENTA 3)

No	Question	Before P4P					After P4P				
		5	4	3	2	1	5	4	3	2	1
13	Are you motivated by P4P to conduct heath education on immunization?										
14	Are you motivated by P4P to administer PENTA3 to under one year old child? Routine										
15	Are you motivated by P4P to conduct mobile and outreach immunization services?										
16	Are you motivated by P4P to order vaccines from district vaccine store (DVS)?										
17	Are you motivated by P4P to do follow up to under one year child old who is not immunized PENTA 3 vaccine?										
18	Are you motivated by P4P to document properly all PENTA 3 immunized children?										

Likert scale : 5=Strongly agree, 4=Agree, 3=Neutral, 2=Disagree, 1=Strongly disagree

QUESTIONS ON LABOUR AND DELIVERY SERVICES

No	Question	Before P4P					After P4P				
		5	4	3	2	1	5	4	3	2	1
19	Are you motivated by P4P to give health education at ANC on importance of Health facility delivery?										
20	Are you motivated by P4P give health education to the community importance of health facility delivery										
21	Are you motivated by P4P to conduct delivery at Health facility?										
22	Are you motivated by P4P to refer ANC clients with complication to higher health facility level?										
23	Are you motivated by P4P to record properly all deliveries conducted at health facility?										
24	Are you motivated by P4P to conduct mobile and outreach antenatal services?										

Likert scale : 5=Strongly agree, 4=Agree, 3=Neutral, 2=Disagree, 1=Strongly disagree

Appendix iii : Dodoso la mtumishi wa kituo cha huduma za afya (kiswahili version)

UTAFITI KUHUSU TATHMINI YA KIWANGO CHA KUHAMASIKA KWA WATUMISHI WA IDARA YA AFYA KUTOKANA NA MRADI WA MALIPO KWA TIJA (P4P) KATIKA KUTIMIZA VIGEZO VYA AFYA YA UZAZI

1. Nambari ya dodoso…….

2. Jina la kituo cha huduma cha huduma za afya……..

3. Ngazi ya kituo…… (Hospital, Health centre or Dispensary)

4. Tarehe ya mahojiano……

5. Umiliki wa kituo

1=Government
2=Faith based organization
3=Private

SEHEMU YA KWANZA: TAARIFA ZA MTUMISHI

2. Umri wa mtumishi……

3. Jinsia

0=Mwanamume 1=Mwanamke

4. Muda uliokuwepo kwenye mradi wa Malipo kwa tija (P4P)

1=Mzunguko 1 2= Mizunguko 3

3= Mizunguko 2 4= Mzunguko 4

5. Taaluma yako ni ipi?

NO	NAME OF CADRE	NO	NAME OF CADRE
1	Medical officer	9	Clinical officer
2	Dental officer	10	Clinical assistant
3	Assistant medical officer	11	Laboratory technologist
4	Assistant dental officer	12	Laboratory assistant
5	Dental therapist	13	Pharmaceutical assistant
6	Nursing officer	14	Medical attendants
7	Assistant nursing officer	15	Environmental health officers
8	Enrolled nurse		

SEHEMU YA PILI: MASWALI

MASWALI YA HUDUMA KWA MAMA MJAMZITO

No	**Question**	**Kabla ya P4P**					**Baada ya P4P**				
		5	**4**	**3**	**2**	**1**	**5**	**4**	**3**	**2**	**1**
1	P4P imekuhamasisha kuhusu utoaji wa elimu ya afya kwa kina mama kuhusu umezaji wa dozi ya pili ya kinga dhidi ya malaria (IPT2)?										
2	P4P imekuhamasisha kuhakikisha kuwepo kwa dawa za mseto(SP) za kutosha kituoni wakati wote kwa?										
3	P4P imekuhamasisha kuhusu kutoa huduma za mkoba kwa mama wajawazito?										
4	P4P imekuhamasisha kuhakikisha kina mama waja wazito wote wanapata dozi ya pili ya kinga dhidi ya malaria (IPT2)?										
5	P4P imekuhamasisha kuhakikisha kuwa kina mama wote wajawazito wanameza dawa kinga ya malaria (IPT) mbele ya mtoa huduma za afya										
6	P4P imekuhamasisha kuhakikisha kuwa kumbukumbu zote za kina mama waliopata dozi ya pili ya kinga ya malaria (IPT2) zina andikwa kwa ufasaha?										

Likert scale 5=Nakubali sana, 4=Nakubali, 3=Sina uhakika, 2=Sikubali, 1=Sikubali sana

QUESTIONS ON CHILD HEALHT SERVICES (CHANJO SA SURUA)

No	Question	Kabla ya P4P					Baada ya P4P				
		5	4	3	2	1	5	4	3	2	1
13	P4P imekuhamasisha kutoa elimu ya afya juu ya umuhimu wa chanjo ya surua?										
14	P4P imekuhamasisha kuto chanjo ya surua kwa watoto chini ya mwaka mmoja?										
15	P4P imekuhamasisha kutoa huduma za mkoba za chanjo?										
16	P4P imekuhamasisha kuhakikisha kuwa wakati wote chanjo dhidi ya surua inakuwepo kituoni?										
17	P4P imekuhamasisha kufanya ufatiliaji kwa watoto ambao hawajapata chanjo ya surua?										
18	P4P imekuhamasisha kuhakikisha kuwa kumbukumbu zote za watoto waliopata chanjo ya surua zina andikwa vizuri?										

Likert scale 5=Nakubali sana, 4=Nakubali, 3=Sina uhakika, 2=Sikubali, 1=Sikubali sana

MASWALI YA AFYA YA MTOTO (CHANJO YA PENTA 3)

No	**Question**	**Kabla ya P4P**					**Baada ya P4P**				
		5	**4**	**3**	**2**	**1**	**5**	**4**	**3**	**2**	**1**
13	P4P imekuhamasisha kutoa elimu ya afya juu ya umuhimu wa chanjo ya PENTA 3?										
14	P4P imekuhamasisha kuto chanjo ya PENTA 3 kwa watoto chini ya mwaka mmoja?										
15	P4P imekuhamasisha kutoa huduma za mkoba za chanjo?										
16	P4P imekuhamasisha kuhakikisha kuwa wakati wote chanjo dhidi ya surua inakuwepo kituoni?										
17	P4P imekuhamasisha kufanya ufatiliaji kwa watoto ambao hawajapata chanjo ya PENTA 3?										
18	P4P imekuhamasisha kuhakikisha kuwa kumbukumbu zote za watoto waliopata chanjo ya PENTA 3 zina andikwa vizuri?										

Likert scale 5=Nakubali sana, 4=Nakubali, 3=Sina uhakika, 2=Sikubali, 1=Sikubali sana

MASWALI YA SHUGHULI ZA UKUNGA

No	Maswali	Kabla ya P4P					Baada ya P4P				
		5	**4**	**3**	**2**	**1**	**5**	**4**	**3**	**2**	**1**
19	P4P imekuhamasisha kutoa elimu ya afya juu ya umuhimu wa kujifungulia kituoni kwa mama wajawazito?										
20	P4P imekuhamasisha kutoa elimu juu ya umuhimu wa kujifungulia kituoni kwa jamii?										
21	P4P imekuhamasisha kutoa huduma za kuzalisha wajawazito wanaofika kujifungulia kituoni?										
22	P4P imekuhamasisha kutoa rufaa ya kwenda kujifungulia kituo cha ngazi ya juu kwa wajawazito wenye matatizo yamakubwaya ujauzito?										
23	P4P imekuhamasisha kuweka kumbukumbu za mama wajawazito wanaojifungilia kituoni?										
24	P4P imekuhamasisha kutoa huduma za mkoba kwa mama wajawazito?										

Likert scale 5=Nakubali sana, 4=Nakubali, 3=Sina uhakika, 2=Sikubali, 1=Sikubali sana

Appendix iii: Questionnaire (English version)

INTERVIEWERS GUIDE FOR INDEPTH INTERVIEW

Questions guide for in depth interview with health facility incharge and CHMT

Time of interview 15 min Starting time…… Finishing time…….

1. What are the factors that have influence good performance? (For indicators with good performance)
2. What are the factors that have influence poor performance? (For indicators with poor performance)
3. What have you done to solve the problems at Health facility level (For HF incharge), and department level (For head of department)

Appendix v: Questionnaire (Swahili version)

MWONGO WA USAHILI KWA MKUU WA KITUO CHA TIBA NA CHMT

Muda wa mahojiano ni dakika 15

Muda wa kuanza……. Muda wa kumaliza……

1. Ni mambo yapi yamewezesha kituo kufikia malengo yake (Kwa vigezo ambavyo kituo kimefikia malengo)

2. Ni mambo yapi yamepelekea kituo kushindwa kufikia malengo yake (Kwa vigezo ambavyo kituo kimeshindwa kufikia malengo)

3. Ni hatua zipi zinachukuliwa katika kutatua matatizo hayo katika ngazi ya kituo kwa (Mkuu wa kituo), Idara (Kwa mkuu wa idara)

Appendix vi : Informed Consent Form(English Version)

MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES

DIRECTORATE OF RESEARCH AND PUBLICATIONS, MUHAS

INFORMED CONSENT FORM

ID-NO. ☐☐

Greetings,

My name is ……., Working for School of Public Health and Social Sciences at Muhimbili University of Health and Allied Sciences in Dar es Salaam.

Purpose of the Study

Dear respondent I would like to inform you that this is a research study titled "THE ROLE OF PAY FOR PERFOMANCE IN IMPROVING MARTENAL AND CHILD HEALTH STATUS IN MKURANGA DISTRICT" I would like to give you information about your participation in the study.

This study is aiming on determining the extent health care workers are motivated by P4P program to achieve maternal and child health indicators and factors influencing performance. Kindly give correct information which will enable to get good results for improvement of the program.

Confidentiality

We will protect and treat the information you will be providing with high confidentiality to the best of our knowledge. We will not write your name on the questionnaire or in any report/documents that might let someone identifies you. Your name will not be linked with the research information in any way. The investigators will take care of the data. And information collected. However, the final results after the analysis will be shared with national stakeholders and I will submit the manuscript for publication in scientific journals.

Right and withdrawal alternatives

Your participation is voluntary. You may decline from participation to the study at anytime during interview even if you have consented to participate. Your decision to participate or not will not be associated with your right to work in the facility. There is no penalty for refusing to participate on the study. You will not experience any loss if you refuse to participate in this study.

Benefits

Information you give will enable the District Health Management Team and program managers to close existing gaps so as to improve health outcomes by motivating health care workers.

If any damage will occur

It is not expected that there will be any damage for your participation as the respondent to this study.

Risks

There is no harm for participating in the study. However, you are free to stop participation at any time during this discussion in the event you feel uncomfortable.

Who to Contact

If you ever have questions about this study, you should contact the **Principal Investigator**,

Dr Philemon Kalugira(+255 713 273770) of Muhimbili University of Health and Allied Sciences, P. O. Box 65001, Dar es Salaam.

If you ever have questions about your rights as a participant, you may call **Prof. M. MUSHI, Chairman (Research and Publications Committee, MUHAS. P.O.Box 65001,** Dar es Salaam – Tanzania, Tel **+2552150302-6**); and **Proff. P.G.M Mujinja** who is the supervisor of this study (Tel. **0754 271 171**)

Signature:

Do you agree?

Participant agrees …….. Participant does NOT agree …….....……

I ……. have read the contents in this form. My questions have been answered. I agree to participate in this study.

Signature of participant ……

Signature of Research Assistant ……..

Date of signed consent ……

DECLARATION

The above document describing the benefits, risks, and procedures for the research titled " THE ROLE OF PAY FOR PERFOMANCE IN IMPROVING MATERNAL AND CHILD HEALTH STATUS IN MKURANGA DISTRICT "has been read and explained to me and I have agreed to participate. I certify that the nature and purpose, the potential benefits and possible risks associated with participating in this study have been explained to me.

Signature or Right Thumb stamp of the respondent.....Date.....

Signature of Research Assistant.....……Date.....

Appendix vii: Informed Consent Form (Kiswahili version)

CHUO KIKUU CHA SAYANSI ZA AFYA MUHIMBILI

KURUGENZI YA TAFITI NA UCHAPISHAJI

FOMU YA RIDHAA

Namba ya utambulisho ☐☐

Ridhaa ya kushiriki kwenye utafiti

Hujambo! Ninaitwa ……, kutoka Chuo Kikuu Cha Afya na sayansi ya Tiba Muhimbili.

Madhumuni ya Utafiti

Utafiti huu unafanyika katika kutimiza sehemu ya matakwa ya shahada ya uzamili ya sera ya afya na usimamizi ya Chuo Kikuu cha Afya na Sayansi ya Tiba Muhimbili. Utafiti huu unatathmini kiwango cha kuhamasika kwa watumishi wa afya katika utekelezaji wa mradi wa malipo kwa tija (P4P). Unaombwa kushiriki katika utafiti huu kutokana na upeo na ufahamu ulio nao ambavyo ni muhimu kwa utafiti huu. Tafadhali kuwa mkweli na muwazi kwa vile matokeo ya utafiti huu yanaweza yakatoa maamuzi na mapendekezo ya baadaye.

Nini kinahitajika ili kushiriki

Ukikubali kushiriki katika utafiti huu, utasailiwa ili kuweza kujibu maswali toka kwenye dodoso lililoandaliwa kwa ajili ya utafiti huu.

Usiri

Taarifa zote zitakazokusanywa kupitia dodoso zitaingizwa kwenye ngamizi kwa kutumia namba za utambulisho.Kutakuwa na usiri na hakuna mtu yeyote asiyehusika atakayepata taarifa zilizokusanywa.

Hatari

Hatutegemei madhara yoyote kukutokea kwa kushiriki kwako kwenye kwenye utafiti huu.

Haki ya kujitoa au vinginevyo

Ushiriki katika utafiti huu ni wa hiari. Unaweza kuacha kushiriki katika utafiti huu muda wowote hata kama ulikwishatoa idhini yako. Kukataa kushiriki au kujitoa kutoka kwenye utafiti hakutahusisha adhabu yoyote.

Faida

Kama utakubali kushiriki kwenye utafiti huu taarifa utakazotoa zitatuwezesha kujua hali ya utekelezaji wa mradi huu ili kuweza kuboresha zaidi na hivyo kupata matokeo yaliyo mazuri zaidi katika utoaji wa uhuduma za afya zilizobora zaidi.

Endapo utapata madhara

Hutegemewi kupata madhara yoyote kutokana na ushiriki wako katika utafiti huu.

Nani wa kuwasiliana naye

Kama una maswali kuhusiana na utafiti huu, wasiliana na Mtafiti mkuu wa utafiti huu, **Dr Philemon Kalugira (Tell. +255 713 273770)** wa Chuo Kikuu cha Afya na Sayansi ya Tiba Muhimbili, S. L. P. 65001, Dar es Salaam.

Kama una swali kuhusu stahili zako kama mshiriki unaweza kumpigia simu kwa **Mwenyekiti wa baraza la Utafiti na machapisho Prof. M.E. Mushi S.L.P. 65001, Dar –es Salaam. (Simu: 2150302-6)** au msimamizi wa utafiti huu Proff. PGM Mujinja (0754 271 171).

Sahihi: .....

Je umekubali?

Mshiriki amekubali ……..... Mshiriki hajakubali …….....

Mimi ..... nimesoma maelezo ya fomu hii.

Maswali yangu yamejibiwa.Nakubali kushiriki katika utafiti huu.

Sahihi ya mshiriki……

Sahihi ya mtafiti msaidizi……

Tarehe ya kutia sahihi ya idhini ya kushiriki……..

Appendix viii: Ethical Clearance

MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES

Directorate of Postgraduate Studies

P.O. BOX 65001
DAR ES SALAAM
TANZANIA.

Website: http://www.muhas.ac.tz

Tel: +255-(0)22-2150302 Ext 207.
Tel (Direct): +255-(0)22-2151378
Telefax:255-(0)22-2150465
E-mail: *dpgs@muhas.ac.tz*

Ref. No. MU/PGS/SAEC/Vol. IV/

28th May, 2013

Mr. Philemon Kalugila
Master of Public Health,
MUHAS.

u.f.s. Supervisor,
Prof. P.G.M. Mujinja
MUHAS.

Re: YOUR REQUEST FOR APPROVAL OF ETHICAL CLEARANCE

Please be informed that the Expedited Review Sub-Committee of Senate Research and Publications held its meeting on 27th May, 2013, together with other business the committee discussed your proposal and came up with the attached comments.

You are required to address all comments and resubmit your proposal as soon as possible not later than two weeks from the date of this letter.

Please note that all addressed comments should be bolded in the text and summarized as per attached format. Short to that your proposal resubmission will be considered as first submission and will be subjected to all review procedures.

Prof. O. Ngassapa
DIRECTOR OF POSTGRADUATE STUDIES

/emm

cc Director for Research and Publication, **MUHAS** - For noting
cc Dean, School of Public Health and Social Sciences, **MUHAS** - For noting

Appendix ix: Introduction Letter

MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES

Directorate of Postgraduate Studies

P.O. BOX 65001
DAR ES SALAAM
TANZANIA.

Website: http://www.muhas.ac.tz

Tel: +255-(0)22-2150302 Ext 207.
Tel (Direct): +255-(0)22-2151378
Telefax:255-(0)22-2150465
E-mail: *dpgs@muhas.ac.tz*

Ref. No. HD/MUH/T.136/2012

29th July, 2013

District Executive Director,
Mkuranga District Council,
P.O. Box 10
PWANI.

Re: INTRODUCTION LETTER

The bearer of this letter Mr. Philemon S. Kalugira is a student at Muhimbili University of Health and Allied Sciences (MUHAS) pursuing Master of Public Health.

As part of his studies he intends to do a study titled: ***"The role of pay for performance on improving Reproductive and Child Health services in Mkuranga District Council..***

The research has been aproved by the Chairman of MUHAS Research Ethics Committee.

Kindly provide him the necessary assistance to facilitate the conduct of his research.

We thank you for your cooperation.

A. Ndyeikiza
For: DIRECTOR, POSTGRADUATE STUDIES

cc: Mr. Philemon S. Kalugira
cc: Dean, School of Public Health and Social Sciences

Appendix x: Ruhusu ya kutoka kwa Mkurugenzi

HALMASHAURI YA WILAYA YA MKURANGA

Barua zote ziandikwe kwa:
Mkurugenzi Mtendaji Wilaya,
Simu Na 023 2402738,
Fax Na 023 402706
Unapojibu tafadhali taja:

S.L.P. 10,
MKURANGA,
PWANI.

Kumb Na.MDC/C/S.20/1/VOL VII/202

30 JULAI 2013

MGANGA MKUU (W)
MKURANGA

YAH: DR PHILEMON KALUGIRA

Rejea kichwa cha habari hapo juu,

Mtajwa hapo juu ni mwanafunzi wa shahada ya uzamili ya afya ya jamii kutoka Chuo kikuu cha Sayansi ya Tiba Muhimbili (MUHAS) na kwasasa anatarajia kufanya utafiti kuhusu tathmini ya mradi wa malipo kwa tija (P4P) kwa watumishi katika halmashauri ya Mkuranga. Naomba umpokee na kumpa ushirikiano unaostahili ili aweze kukamilisha utafiti huo kama sehemu muhimu ya kukamilisha masomo yake.

Saada Mwaruka
Mkurugenzi Mtendaji (W)
MKURANGA

DISTRICT EXECUTIVE DIRECTOR
MKURANGA

Nakala; Dr Philemon Kalugira — Kwa utekelezaji
Director of post graduate studies (MUHAS) — Kwa taarifa

Appendix xi: Ruhusa ya kutoka kwa Mganga Mkuu

HALMASHAURI YA WILAYA YA MKURANGA

Barua zote ziandikwe kwa:
Mkurugenzi Mtendaji Wilaya,
Simu Na 023 2402738,
Fax Na 023 402706
Unapojibu tafadhali taja:

S.L.P. 10,
MKURANGA,
PWANI.

Kumb Na.MDH/HO.4/1/VOL V/216

31 JULAI 2013

WAGANGA WAFAWIDHI
HOSPITALI
VITUO VYA AFYA
ZAHANATI

YAH: DR PHILEMON KALUGIRA

Rejea kichwa cha habari hapo juu,

Mtajwa hapo juu ni mwanafunzi wa shahada ya uzamili ya afya ya jamii kutoka Chuo kikuu cha Sayansi ya Tiba Muhimbili (MUHAS) na kwasasa anatarajia kufanya utafiti kuhusu tathmini ya mradi wa malipo kwa tija (P4P) kwa watumishi katika halmashauri ya Mkuranga. Utafiti huu utahusisha kufanya mahojiano na watumishi waliopo kituoni. Naomba umpokee na kumpa ushirikiano.

DR LUGANO KISWAGA
K.n.y MGANGA MKUU (W)
MKURANGA

Nakala; Dr Philemon Kalugira
Mkurugenzi mtendaji (W)

Kwa utekelezaji
Kwa taarifa