Open Science Repository Medicine

doi: 10.7392/openaccess.23050422

Assess Functionality of IMCI Spatial Facility Infrastructure and Policy Utilization in Trans-Nzioa County, Kenya

Silali, Maurice B., and Eunice Njambi. “Assess Functionality of IMCI Spatial Facility Infrastructure and Policy Utilization in Trans-Nzioa County, Kenya.” Open Science Repository Medicine Online, no. open-access (September 25, 2013): e23050422. doi:10.7392/openaccess.23050422.

Title
Assess functionality of IMCI spatial facility infrastructure and policy utilization by IMCI program in TransNzioa district.

Corresponding Author
Maurice B.Silali: Maseno University Private Bag Maseno, Kenya.
Tel.no.+25457351620/2
Email address gmsilali@yahoo.com.Cell phone 0720842994.
Other Authors
Eunice Njambi

Declaration
I hereby, declare that, this research article is my original work and none of its content has been presented, to any local or international journal for publication, or submitted elsewhere for review, or copyright transfer. Sources of material used in this article have been acknowledged.
The article, did not incur any financial support to conduct research.
Signature ..... Date 3-09-2013
Maurice Barasa Silali.

Abstract
Implementation of integrated management of childhood illness (IMCI), in a comprehensive and holistic approach, forms bench mark for basic child health in promoting celebration of fifth birth day for children below five years of age Globally studies by World health organization (WHO) and United Nations for Children's fund (UNICEF), show that 90% of Sub Saharan Africa countries as well as Kenya have benefited from IMCI program. The program in Kenya was launched in 1999, is being enhanced in line with MDG 3 of vision 2030, but a lot of benefits have not been harvested by communities at household level. Trans Nzioa District, IMCI program, was initiated a decade ago but still needs substantial support from national IMCI unit to improve basic IMCI spatial infrastructures and policy on essential drug supply and pediatrics equipment at grass root level. The study aimed to determine the level and functionality of IMCI spatial infrastructure and policy utilization in public health facilities in Trans Nzioa District. Cross sectional descriptive study was conducted by mixed data procedure. Sample size of 275 by Fisher's was used with a proportional purposive design of sampling In quantitative, data was collected using structured questionnaire and analyzed for central tendency and spatial distribution measurements, while inferential analysis done to provide degree of freedom and measure significant relationship. In qualitative data, Key informants interviews (KII) guides, focused group discussion (FGD) guides, themes and sub themes were discussed into saturation points. The study established that, 89.9% of public facilities in District have insignificant IMCI spatial infrastructure of P values greater than 0.05, as well as majority of health facilities, at level 2 and 3 have compound spatial infrastructure with limited pediatrics' equipment and drug supply and IMCI policy being underutilized. Push system of essential drug supply was noted on expense for the focused Pull system. Need for department of Child healthcare and Nutrition, Ministry of Public Health and Sanitation in the District to put more measures in improving IMCI program in order to achieve both primary prevention and MDG 3 by 2030

Key Words
Holistic intervention
Integrated Management of Childhood Illness
IMCI policy
Vertical program

Introduction
The integrated management of childhood illness (IMCI) program addresses on five major causes of morbidity and mortality (Geneva, 1998), among children below five years of age: measles, pneumonia, diarrhea, malaria and malnutrition (Ahmed T, 1999). The program aimed to improve spatial facility infrastructure and enforced IMCI policy and their utilization to enhance quality health care that provide the basic child rights as stipulated in UN Convention on the Rights of the

child articles 3, 6, 7, 19 and 24 (UNCEF, 1989), and Kenya's laws on Children acts 2001 section 9 (Kenya, 2004)

Children living in Africa like Trans nzioa District, have a much higher chance of dying before the age of five, (Tulloch, 1999); those from poorest families suffer most, and experiences mortality of 1 in 4 deaths in neonatal period (Lawns J.E, 2004) . Trans-Nzioa District encounters specks of IMCI utilization with current mortality rate of 76 / 1000 live births for under fives, compared to the national one 74 /1000 live births (Survey, 2009) .Despite Department of child and nutrition in Trans-Nzioa District gearing towards planning to develop existing spatial facility infrastructure and strengthening IMCI policy, it was paramount to ascertain how these factors were being implemented comprehensive and holistically (Boulanger, 1999).

Problem Statement

Health records indicate tremendous decline in utilization of IMCI program in Sub-Saharan Africa and Kenya included (Huicho, 2005). In Trans Nzioa District, has been ear marked with allocation of huge health expenditure on IMCI program but there is no major improvement being realized towards the program, thus against the basic child rights as stipulated in the UN Convention on the Rights of the child article 3, 6,7,19 and 24 (UNCEF, 1989), and Kenya's law, child Acts 2001section 9, (Kenya, 2004) Mortality rate in the District is 76/1000 live births (KSPA, 2010), compared to national 74 /1000 (Survey, 2009),. Malaria and Pneumonia lead in morbidity and mortality rates with 38% consecutively, Diarrhea diseases and Malnutrition10% each and Measles 4% per year (Victora CG, 2000), these decline have negative impact on Primary prevention and achievement of MDG 3 (Washington, 2004).

Justification

The need for study came out of the concern, emanating from the results of (Survey, 2009) on persistence gap for child survival in District, despite great improvement on National quality child health care for under five mortality rates reduce from 115 to74/ 1000 live births (Survey, 2009). The district is among of which, IMCI program has been initiated but still need substantial support from National IMCI unit (Geneva, 1998). Trans Nzioa district has developed core determinants in spatial health facility infrastructure, IMCI policy strategic planning, at level 2 and 3 health facilities (KSPA, 2010).

Aim of the Study

Study aims to assess level of IMCI spatial infrastructure and policy utilization in the district in providing quality child health care for children below five years age, (Planning, 2003),also intends to provide significant impetus on primary prevention and to compress single disease management (Vertical programs) into horizontal IMCI program that has a Highly Impact Interventions for the Child survival(Planning, 2003).

Research Question

What is level and functionality of IMCI spatial infrastructure and IMCI Policy in provision of quality Child health care in children below five years of age in Trans Nzioa district?

Specific Objectives

To assess functionality of IMCI spatial infrastructure in public health facilities in Trans Nzioa district.

To elucidate how IMCI policy influence Child survival in Trans Nzioa district.

Theoretical Statement

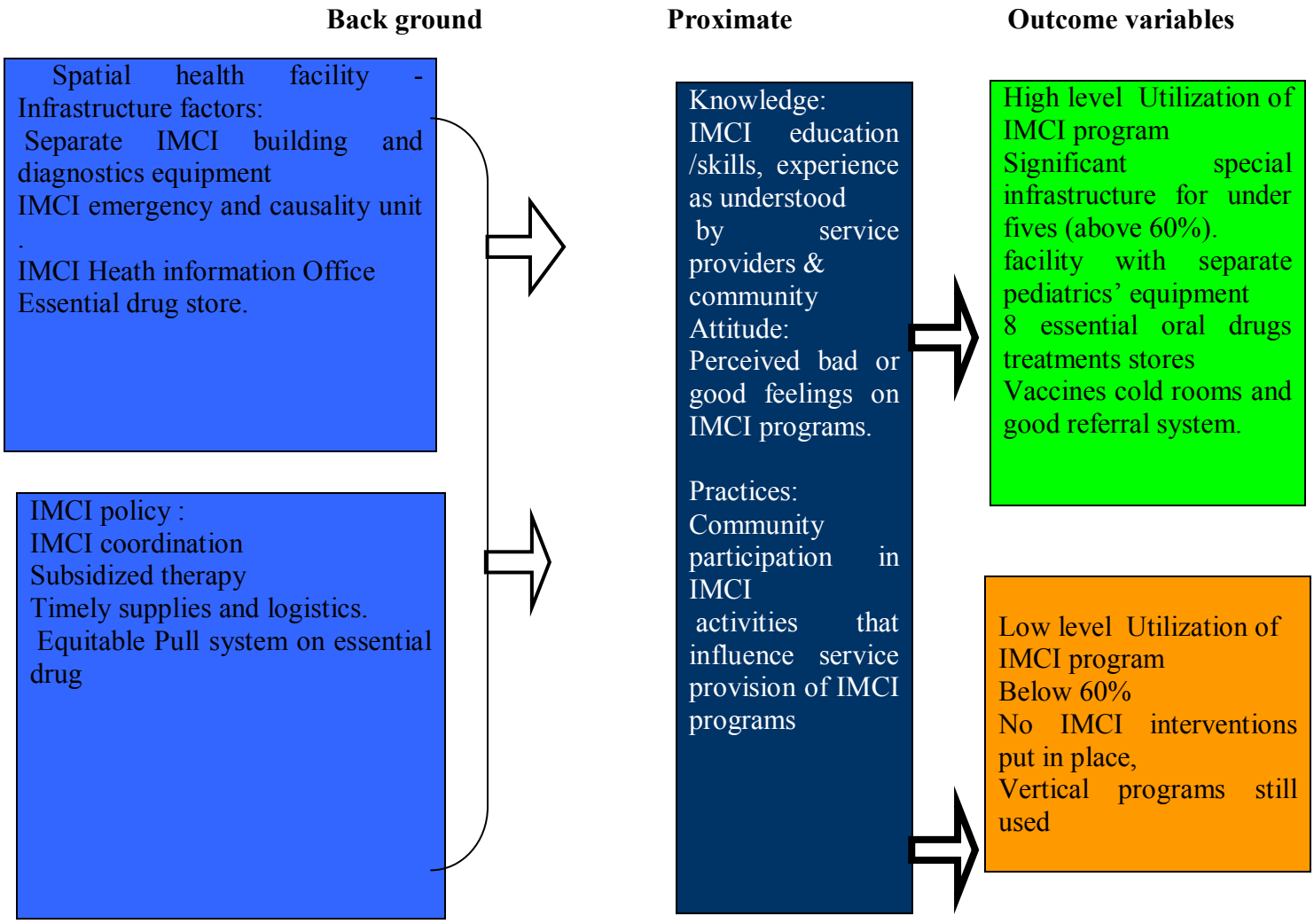
Though most studies have concentrated to develop plans of improving IMCI programs comprehensively, it is necessary to assess the level of utilization of IMCI spatial infrastructure and its policy actions put in place in order to sustain the program at level 2 and 3 health facilities to enhance accessibility factor besides the affordability policy in the program.

Conceptual Statement

From literature review it is clear that sustainable and empowered IMCI programs are determined by quality provision of knowledge and skills,(Hines, 2004,) on IMCI spatial infrastructure, essential pediatrics equipment and drugs, and holistic utilization of child health care policy action,(Hines, 2004,). These factors were used to construct conceptual and operational frame works

Conceptual and Operational Frame works

Figure 2 Showing Summary of IMCI Concepts from literature review.



Research Method

Study Design

This was a Cross - sectional descriptive study that explored the level and functionality of IMCI spatial infrastructure and policy utilization in public health facilities in Trans Nzioa District. The study adopted mixed methods of data collection procedure. Sample size was determined by Fisher formulae, whereby 275, respondents were surveyed 275. Quantitative data was collected using a structured questionnaire, while qualitative data were collected using a Focused Group Discussion guide and Key Informants Interviews .Observations were recorded in structured observation checklists during a walk –through survey.

Study Site

The study was conducted in the month of June 2010 in Trans-Nzoia District. Although the total numbers of government health facilities in the district are over 22 only 4 facilities met criteria for inclusion in the study (Facilities where IMCI has been initiated but still need substantial support from the National IMCI unit

Inclusion Criteria

The inclusion criteria were based on service providers who had worked for more than one month in the facility and are dealing with either MCH or IMCI sections.

Exclusion Criteria

Those service providers who were not dealing with MCH or IMCI issues were not involved in this study.

Ethical Consideration/ Confidentiality

This research was approved by the Great lakes of university of Kisumu, .Ministry of Science and technology research council. Permission and clearance from relevant offices in MOPHS were sought out before commencing the study.

The consents were sought from all respondents before questionnaire could be administered. All the information obtained from respondent was treated with confidentiality. The study was flexible to allow any respondent to withdraw if any case he /she feel uncomfortable to continue with study.

FINDINGS

Demographic Characteristics of Respondents

A total of 275 respondents (service providers) were interviewed in four health facilities. A total of 87 % were married. Gender respondent included 50 % male and 49 % females.

Figure 1 Showing demographic distribution of IMCI service providers in District

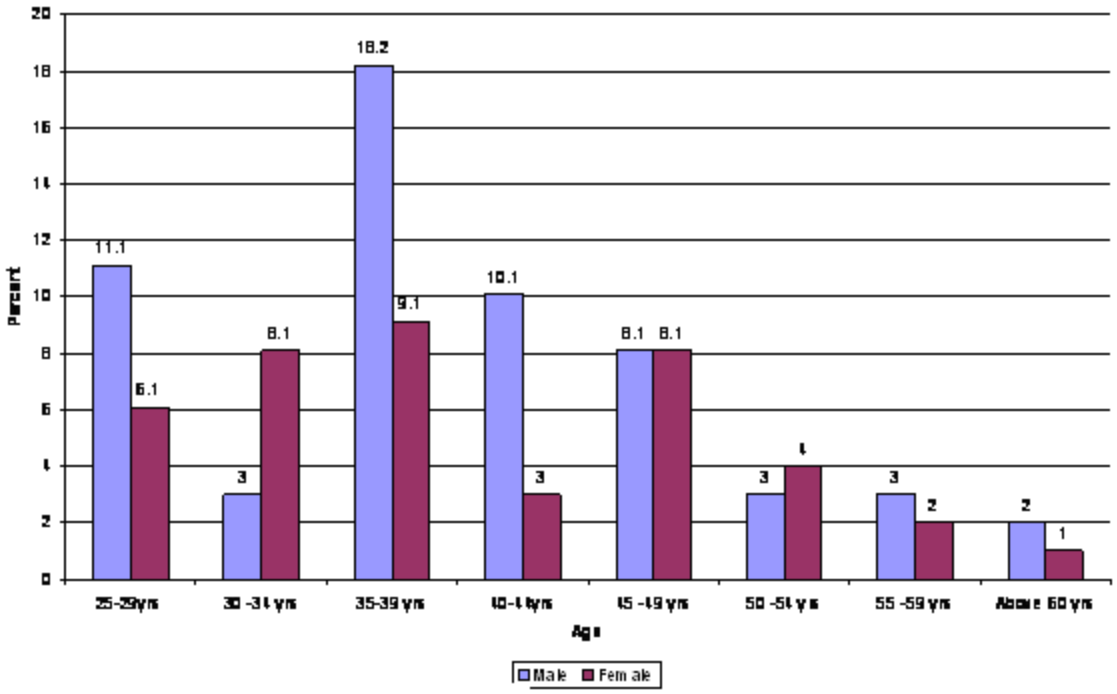


Fig: 1 Age of respondents by gender.

IMCI Spatial Health Facility - Infrastructure

Spatial child health facility infrastructure was measured by enquiring on whether the facility had enough IMCI buildings to cover all vertical components of IMCI into one unit of management. The study found out that only 14.5 % of facilities are implementing IMCI strategy. While 90% of the facilities are still practicing general pediatrics' case management in vertical program, table below is an evidence of progressive evaluation on IMCI spatial infrastructure, essential supply and equipments in the district.

Table I*:* Checklist on functionality of IMCI spatial infrastructures, essential equipment and supply's stores.

		Facilities		
Indicator	Bondeni	Tulweti	Suwerwa	Kaplamai
Presence of a separate building for IMCI strategy	0	0	0	0
Number of trained post IMCI pediatricians	0	0	0	0
Number of	0	0	0	0

trained post IMCI Paramedics				
Number trained post IMCI /MCH nurses	13	10	10	10
Uptake of 8 essential oral therapies.	Very good	good	good	Very good
Source of water supply in the facility	CDF bore hole ,piped	CDF bore hole piped	CDF bore hole piped	CDF bore hole piped
Source of power	electricity	electricity	electricity	electricity
Distance from level 4 facility in kilometers.	65	80	60	100
Number of insecticides treated mosquito nets in store	0	0	0	0
Number of newborn resuscitation machines	0	0	0	0
Comprehensive and holistic disease management for the over lapping signs and symptoms	0	0	0	0
Utilization of single disease management	1	1	1	1
Follow ups of single disease management	1	1	1	1
Number of outreach clinic for under fives per month	1	1	1	1
Facilitators of single disease management/ vertical programs	PHOs 3 nurses	PHOs 3 nurse	PHOs 3 nurses	PHOs 3 nurses
Presence of a	0	0	0	0

separate pediatrics emergency and causality unit.				

Source: (KSPA, 2010).

KEY

0 Lack separate IMCI structure

1 Presence of significant IMCI indicator.

Good Essential drug supply and replenish by Push system

Very good Facility has cost-sharing basket (community medical fund) to replenish essential drugs for IMCI.

4.2 Overall Assessment on IMCI Spatial Child Health Facility Infrastructures

Above observation check list showed that 79% of public health facilities in the district have insignificant basic pediatrics medical equipment like new born resuscitation, diagnostic and other child friendly equipment required for quality IMCI program and may contribute to low level 14.4%of IMCI implementation in the district. Push system on essential drugs does not commensurate the high population health in the community.

The facility progressive evaluation results were seconded by respondents who were asked whether IMCI spatial health facility - infrastructure have been incorporated into facility management, out of 275 respondents who participated in the survey majority,77%, agreed that quality IMCI is not being practiced.

Caption I: Gap on IMCI Spatial Child Health Infrastructures in Tans nzioa District.

"Most facilities in the district are not implementing comprehensive IMCI and holistic Child approach in managing of under five - disease due to many short comings beyond the facility and National IMCI unit control , thus we just implement the vertical programs in isolation instead of being done in single management. Even the 11 days basic training to service provider is expensive that the GOK cannot afford for a continuous process."(KII interviewed Bondeni, Tulwet and Kaplamai facilities 23rd, 24th June 2010)

Table II: List of Intended IMCI Equipment and Supply's Stores at level 2 and level 3.

1	Infant scale , balance type
2	Clinical thermometer
3	Eletrical hot plate 3KW
4	Gas cooker ,portable, burner
5	Blood pressure machines and stethoscope
6	Scale weighing bathroom
7	Paediatric BP scuff
8	Resuscitator set ,infant
9	Ambu bags and mask – new born ,yuong ,older child and adult sizes
10	Oxygen source e.g oxygen cylinder and set bor oxgen concetrator
11	ENT Diagnostic set

12	Laryngscope
13	Ultrasonic nebulizer
14	Spacer for delivery rapid acting bronchodilator through inhalation
15	Laryngealtubes assorted – peadtric and adult
16	Timers
17	Iv giving set
18	Soluset for nweborns
19	Iv canulas butter fly gauge .23,25,,branula gauge 24,22
20	Needles 23, gauge disposal
21	Syringe ,disposal 2cc, 5cc, 10cc
22	NG tubes (paedtric)
23	Rectal tubes
24	Cotton wool
25	Surgical spirit

Source: (National IMCI implementation guideline at Districts level, 2001-04).

Table III: First line IMCI Drugs Checklist.

Prevention	Treatment
Breast feeding	Oral rehydration therapy
Insecticide treated material	Antibiotics for pneumonia
Complementary feeding	Antibiotics for sepsis
Hib vaccine	Antibiotics for dysentry
Zinc	Newborn resuscitation
Newborn temperature management	Antimarials
Antenatal steriods	zinc
Tetanus toxoids	Vitamin A
Neverapine and replacement feeding	
Antibiotic for premature rapture for membrane	
Clean delivery	
Measles vaccine	
Antimarial intermittent	
Vitamin A	

Source: (UNICEF: Child Survival and Development Strategy, 2010)

Caption II. Uptake of 13 Essential IMCI Oral Drugs in District

Assessing whether 13 essential IMCI oral treatments was being implemented in the district , 27out of 43 clinical health workers interviewed 77% (21) accepted to have all 13 essential oral treatments supplied by Push system of essential drugs and not Pull system that advocates for equity. The service package of IMCI is replenished on regular basis by KEMSA- MMOS on the Push system and not Pull system which the facility ordered for. First line drugs included oral septrin (antibiotic) oral coertem (anti-malaria), albendazol (syrup anti-worms), vitamin A drops and while second line drugs are amoxil syrup or gentamicin and xrestapen injections (antibiotic) coeartem injection or Iv quinine (antimalaria), paracetamol injection. (KII interview in Tulwet and Suwerwa facilitie ,o, 23rd and 24th June 2010)

On the focused antenatal clinic visit, Retrospective records showed more than 80% failure rate due to ignorance or pregnant mothers being busy on the farms. Only to attend the last trismester. "Huwa wanasema bora wapate kadi ya kuzaliwa na ya kiliniki ya mtoto for immunization" Others believed that regular visits to the facility during the pregnancy are signs of cowardness in the community. ''She is not a really respectable women" "Immunization defaulters occurs when babies reach 9 months. Remedy on defaulter is done by carrying out the outreach clinics at least once per month. "Community ignores measles vaccine due to their own herd immunity from the households'' (KII and FGD discussants - 23th and Tulwet, Kaplamai and Suwerwa 24th June 2010).

Utilization of IMCI policy in health facilities

This objective sought to understand the respondents' characteristics on how IMCI policies are affecting implementation of IMCI program **(Table IV)**

Table IV: Influence of IMCI Policy to foster IMCI Program.

Facility	Free medical Service for under -5	Supply for Treated mosquito nets	System of drug supply	df	X2	P value
Bondeni (n=81)	Yes ……..63 No 18	65 16	Push 71 Pull 20	2	25.3	0.001
Tulwet (n=81)	Yes 70 No 21	74 7	Push 70 Pull 21	2	19.6	0.001
Kaplamai (n=51)	Yes 55 No 45	50 5	Push 41 Pull 10	2	21.6	0.004
Suwerwa (n =84)	Yes 60 No 24	70 14	Push 74 Pull 10	2	18.9	0.002

From observation check list above, we noted that policy on free medical services for children below five years is insignificant (P value =1.13) in the general district healthcare for under fives.

Overall Assessment on IMCI Program in District

Table VI above revealed that most facilities provide subsidized and free inpatient medical services in IMCI program. Further analysis on IMCI policy shows that main system of essential drugs supply is Push system rather than Pull system that advocated by UNCEF, for equity and participatory in logistics supply of essential drugs. However the policy has a significant relationship towards the enhancement of the fifth year birth day celebration.

Caption III: Insufficient Drug Supply from KEMSA

"*Most facilities are not constantly getting enough drugs supply from GOK supply KEMSA, thus a facility without Cost sharing developing Fund (CSDF), prescribes drugs to guardians to buy in nearest pharmacy in the market" (KII interview Suwerwa -24th June 2010*

Discussion

IMCI Spatial Health Facilities - Infrastructure

This study established that greater part of public health facilities, have not integrated comprehensive and holistic of evidence based high impact intervention to develop existing building suit IMCI basic buildings Medical equipments and drug supply which is inconsistence with the Second National Health Sector Strategic Plan II 2005 -2010, (MOH, 2005b) and IMCI survey draft report (MOH, 2006b)).

Similar study by (Peterson 2004) exposed out that many sick children are not properly assessed and treated by service providers therefore, parents are poorly advised on second opinion or referrals, study noted that recurrent essential drug and equipment supply shortage is mainly associated by Push system of drug supply as revealed by (Picazzo, 2004), as a mode of essentil supply from Kenya medical supply's agent (KEMSA). Large number of out pediatrics patients , leave limited number of service providers at a level of few opportunities to practice Comprehensive IMCI clinical procedures thus rely on history, sign and symptoms to determine the course of disease management using available resources which concurred by a study by (Picazzo, 2004) .

Policies Affecting Facilities to Implement IMCI program

The study discovered that most of IMCI policy poses insignificant utilization for IMCI program. For example, Free medical treatment and cost sharing funds are not always reliable and efficient to allow health facility to manage diseases in large numbers of the under fives attending the facility (Simoes EA, 2003).

"*The welcome of Community pharmacy and Cost sharing Funds created cartels of misusing facility funds and drugs by most of managers because their conflict of interest"*

This observation was consistent with (Victoria, 2000) , that aimed to scale up IMCI implementation at both national and local levels by use of Pull and participatory approach in supply of essential drugs and equipment , free therapy and cost sharing funds for children below 5 years of age (Armstrong Schellenberg JR, 2004).

Conclusion

Study discovered that majority of facilities have insignificant IMCI Facility-infrastructure, essential drugs and equipment supply to implement comprehensive and holistic quality IMCI program. It also noted inadequate grassroots support in implementing IMCI policies across the District.

Recommendation

GOK to partner with other Private Provision Partners, to innovate and improve existing infrastructure in facilities, into IMCI mode spatial infrastructures that compliments with comprehensive and holistic approaches for child healthcare,as well as advocating IMCI policy at community level, through synergistic participation at household level

Acknowledgement

Completing of research article could not be possible without contributions and support of a number of persons: Prof. Ouma and Dr. Abong'o from Maseno University, Mrs E. njambi fro Graet lakes university of Kisumu ,Ministry of Medical service, Ministry of Public health and Sanitation,(MOPHS) , Kenya to what I greatly indebted. First and foremost I thank the Directors of Post graduate studies (SGS) and Tropical institute of community health, for allowing me the opportunity and time to undertake studies in the Great Lakes University of Kisumu, supervisors for their timely participatory assistance in the research article writing.

Secondly I extend my sincere gratitude to Mrs Eunice Njambi, for offering me an opportunity, supervisors and academic support in the entire study period. I appreciate efforts and resources assistance provided by the school of post graduate studies (SGS) and MOPHS communities in Trans Nzioa district to collect my data.

Finally I wish to express my gratitude to all service providers in Trans zioa district who volunteered their time to participate in this study .Many people will sacrifice their comforts to enable me produce this document .I acknowledge all of them.

REFERENCES

Ahmed T, S.M. (1999) Mortality in severely malnourished children with diarrhea and use of standard management protocol. Lancet 353:, 1919-1922

Armstrong Schellenberg JR, A.T., Mshinda H, Mukasa O (2004) effectiveness and Cost of facility –based integrated management of childhood illness in Tanzania .Lancet, 364:, 1583-1594.

Boulanger, L.A.L, and A Odhacha. (1999) "Treatment in Kenyan Rural Health Facilities: Projected Drug Costs Using the WHOUNICEF Integrated Management of Childhood Illness (IMCI) Guidelines" Bulletin of the World Health Organization 77(10). 852–58

Geneva, W.H.O. (1998) Improving family and community practices.A component of the IMCI strategy

Hines, A.K., S. . (2004,) Bridging the implementation gap between knowledge and action for health,. Bulletin of WHO 82, 724-732.

Huicho, L., M. Dávila, M. Campos, C. Drasbeck, J. Bryce, and C. G.Victora.. . (2005) "Scaling up IMCI to the National Level: Achievements and Challenges in Peru." Health Policy and Planning 20 (1), 14–24

Kenya, G.O.K. (2004) National IMCI implementation strategic plan 1999-2004

KSPA (2010) Kenya Service Provision assessment survey

Lawns J.E, B., Z.A Paul, V (2004) Why are million newborn babies dying each year? Lancet, 364:1121.

MOH, K. (2005b) Second National Health sector strategic plan II 2005 -2010

MOH, K. (2006b) IMCI Survey draft report

Peterson N.S.J., Were W, Nsabagasani X, Magumba G. (2004) Coping with pediatrics referrals – Uganda parents experience. .Lancet 363 1955-1956

Picazzo, O. (2004) child health financing and cost- effectiveness: supplement to the report on the analytic review of IMCI.

Planning, H.P.A. (2003) "Health Care for Under-Fives in Rural Tanzania: Effect of Integrated Management of Childhood Illness on Observed Quality of Care." 19 (1), 1–10.

Simoes EA, P., Kisanga, Mukasa G, Nsungwa –Sabiiti J. . (2003) Management of severely ill children at first level health facility in Sub Saharan Africa when referral is difficult Bulletin of WHO 81, 522-531

Survey, K.D.H. (2009)

Tulloch, J. (1999) "Integrated Approach to Child Health in Developing Countries. Lancet 354 (Suppl. 2): SII, 16–20.

UNCEF.(1989) UN convention on the rights of the child

Victora CG, B.J. (2000) Reducing deaths from diarrhea through oral rehydration therapy, Bulletin of the world health organization, ,

Victoria, C.G., Bryce, J. . (2000) Reducing deaths from diarrhea through oral rehydration therapy, Bulletin of the world health organization,

WHO –UNICEF joint statement: management of pneumonia in community settings New York, 78, 1246-1255.

Washington, D., World Bank. (2004) Millennium Development Goals for health: rising to the challenges

Figure 3: Showing location of Trans Nzioa District (Green) in Kenya, (Source: Survey map of Kenya, 2007)