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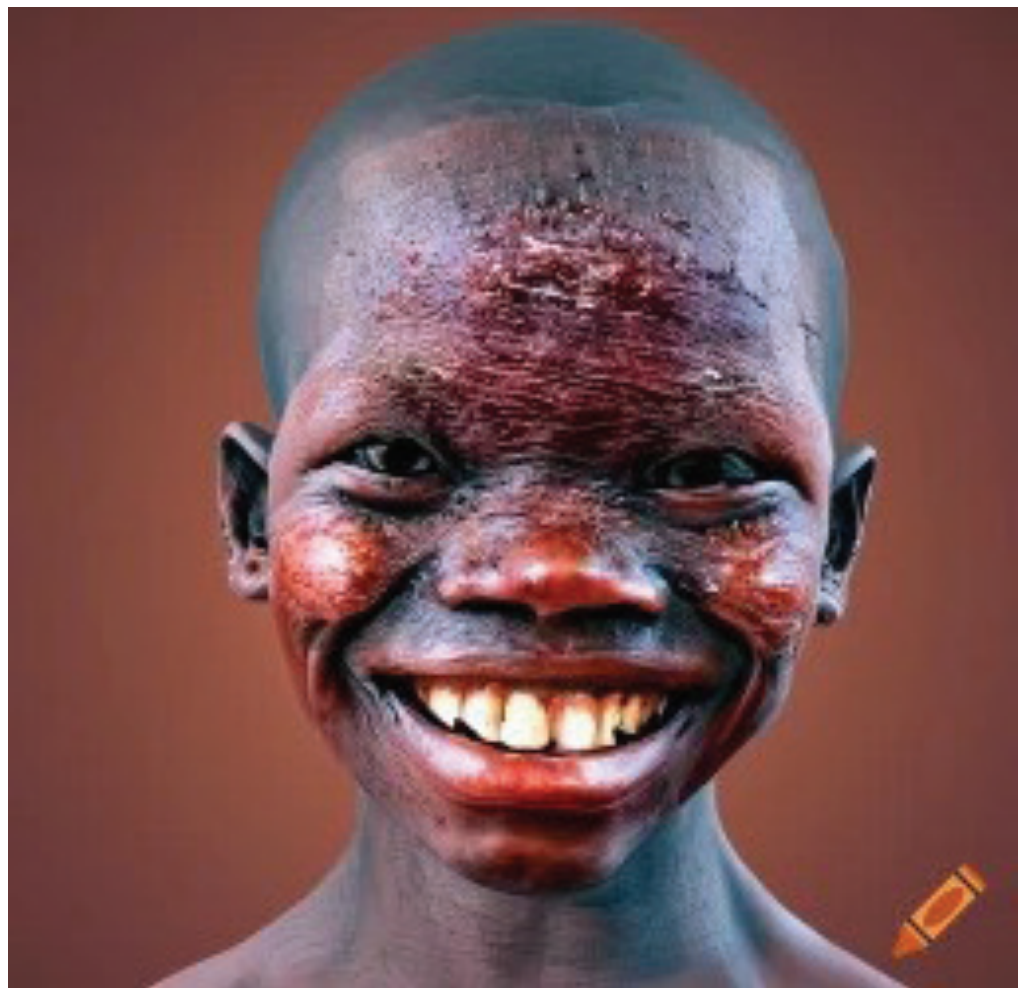
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Integrated Disease Surveillance and Response (IDSR): Cumulative report for three months, July – September 2023 (Epidemiological week 27 - 39)

D. Ngenzi^{1,2}, S. Moshi^{1,2}, E. Mwakapasa^{1,2}, F. Matullu^{1,2}, R. Kishimba^{1,2}, M. Ujudi^{1,2}, E. Chao^{1,2}, G. John^{1,2}, W. Solomon^{1,2}, W. Mchwampaka^{1,2}, F. Ronjino^{1,2}, K. Wilson^{1,2} and R. Nyamalizi^{1,2}, J. Massaga³, V. Mmbaga^{1,2}, N.A. Kapologwe^{1,2}, T. Nagu^{1,2}

ABSTRACT

Introduction: The Ministry of Health continued to carry out surveillance of reportable diseases and conditions. This paper reports the cumulative data for the period of 3 months from July to September 2023, which are World Health Organization (WHO) epidemiological weeks 27-39. Data were analyzed to assess regional and national performances in terms of timeliness and completeness reporting as well as determining the cumulative number of cases and deaths, and distribution by month and region. Performance was assessed based on the set national standard of $\geq 90\%$.

Analysis: All 26 regions of Tanzania Mainland submitted weekly reports to the national level with an overall average performance for all months of 95.0% for timeliness and 98.5% for completeness. Cumulatively, a total of 241,783 cases and 37 deaths were reported for all IDSR immediate reportable diseases and conditions. The most commonly reported condition was diarrhea accounting for 54.9% (123,791) of all cases and was reported from all 26 regions. Majority of diarrhea cases were reported from Simiyu 9,610 out of 123,791 (7.2%). Other regions reporting high numbers included Dodoma (6.8%), Tabora (6.5%) and Mara (6.1%). The months of September had the highest number of cases (87,009; (36.0%)). Of the 37 reported deaths, majority were caused by severe acute respiratory illness (SARI) (n=33, 89.2%). The condition with highest case fatality rate was suspected cases of anthrax with (2.0%) 1 of 50 persons dying from suspected anthrax.

Conclusions

The IDSR analyzed data for July to September (WHO epidemiological week 27-39) showed that the performance based on timeliness and completeness were high based the set national standard of $\geq 90\%$. This is encouraging that the Government is well-positioned to detect and report reportable diseases and conditions for immediate response to avert disease outbreak to happen. On the other hand, there is an urgent need for the Government to institute new and reinforcing available preventive and control measures against diarrhea and pneumonia as the two continued to be the leading reportable conditions. Based on high fatality rate of anthrax, the Government need to improve preventive measures such as educating the community on handling animals and their products (meat, milk), timely vaccination of animals and proper management of cases.

INTRODUCTION

In Tanzania surveillance for reportable diseases and conditions under the Integrated Disease Surveillances and Response (IDSR) are electronically collected, and published weekly and monthly under the Ministry of Health (MoH).

It should be noted that IDSR is a strategy for multi-disease surveillance of selected priority diseases or conditions. It links the community, health facility, district and national levels, for providing immediate information for helping public health managers and decision-makers improve detection and response to the leading causes of illness, death, and disability in African countries. The present paper reports cumulative IDSR data for a period of 3 months of July to September 2023, that corresponds to WHO Epidemiological week 27 to 39. Data were analyzed to assess the national and regional performances in terms of timeliness and completeness reporting as well as determining the cumulative number of cases and deaths, and distribution by age, sex, month and region.

ANALYSIS OUTCOME

Health Facility Performance

All 26 regions of Tanzania Mainland submitted weekly reports of selected priority reportable conditions to the national level. The overall performance for timeliness and completeness for July to September 2023 was 95.0% and 98.5% respectively. The performance of timeliness and completeness were above the set national standard of $\geq 90\%$. The Month of July had the highest scores for timeliness (97.1%) while August had the highest score for completeness (99.5%) and were above the set national standard of $\geq 90\%$ (Table 1).

Table 1: Average Timeliness and Completeness of Health Facility Reporting by Month, July – September 2023

Month	% of Completeness	% of Timeliness
July	99.4	97.1
August	99.5	96.7
September	97.6	91.9
Overall Performance	98.7	95.0

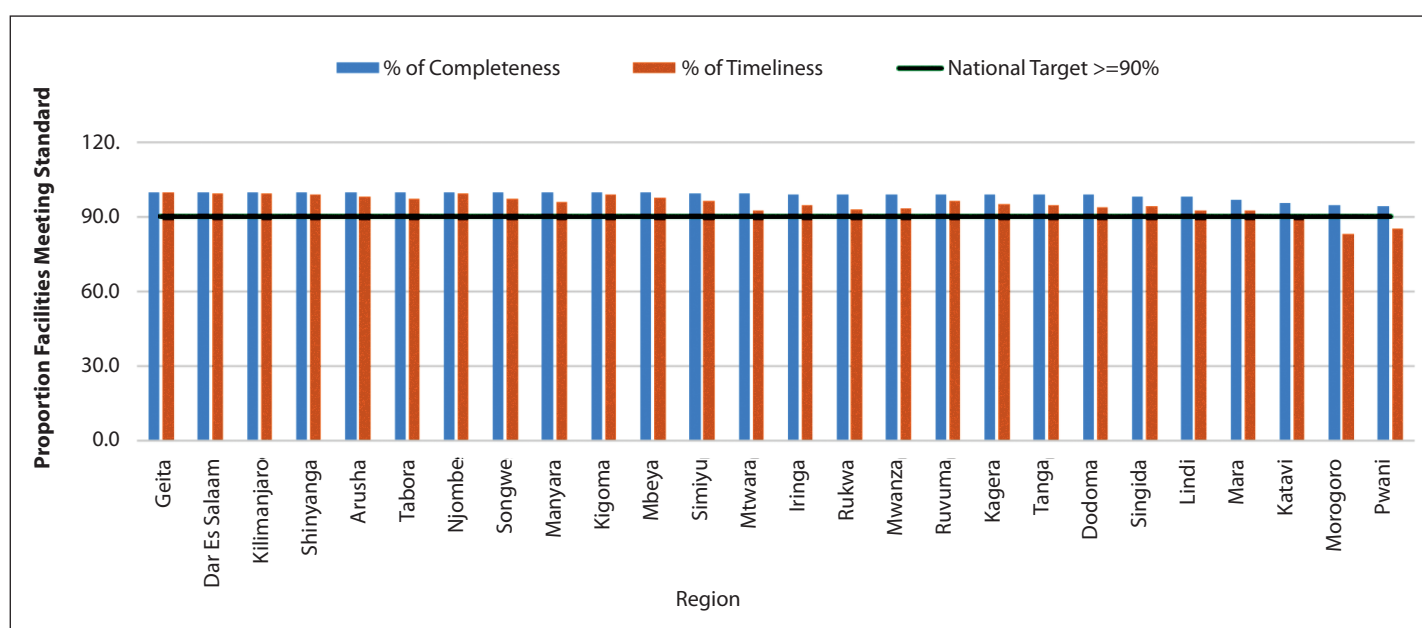


Figure 1: Timeliness and Completeness of Health Facility Reporting from the 26 regions, July – September, 2023

The overall timeliness and completeness of health facilities reporting by all 26 regions are presented in Figure 1. All regions except Morogoro, Katavi and Pwani regions had the overall timeliness meeting the national target of $\geq 90\%$. All regions health facilities reporting for completeness met the national target of $\geq 90\%$ except timeliness for Morogoro, Pwani and Katavi regions.

DISTRIBUTION OF CASES AND DEATHS

Total reported cases for all reportable diseases and conditions from July to September 2023 were 241,783 of which 132,791 (54.9%) were cases due to diarrhea diseases (Table 2). During the reporting period, there were a total of 37 deaths whereby majority 33 (89.2%) were due to SARI.

Table 2: Numbers of cases and deaths caused by reportable conditions, July - September 2023

Condition / Disease	Cases/Deaths	Total
Acute Flaccid Paralysis (AFP)	Case	399
	Death	0
Animal Bites	Case	6,088
	Death	0
Anthrax	Case	50
	Death	1
Bloody Diarrhoea	Case	20
	Death	0
Cholera	Case	285
	Death	3
Dengue Fever	Case	25
	Death	0
Diarrhoea	Case	132,791
	Death	0

Condition / Disease	Cases/Deaths	Total
Severe Acute respiratory Illness (SARI)	Case	5,312
	Death	33
Measles	Case	1,206
	Death	0
Neonatal Tetanus	Case	1
	Death	0
Pneumonia	Case	69,060
	Death	0
Rabies	Case	5
	Death	0
Typhoid	Case	26,541
	Death	0
Total	Case	241,783
	Death	37

Table3: Number of cases and deaths caused by reportable conditions, by month, July – September, 2023

Condition / Disease	July		August		September		Total		Case Fatality Rate (CFR%)
	Case	Death	Case	Death	Case	Death	Case	Death	
AFP	118	0	106	0	175	0	399	0	0.0
Animal Bites	2,076	0	1,886	0	2,126	0	6,088	0	0.0
Anthrax	9	0	8	0	33	1	50	1	2.0
Bloody Diarrhoea	2	0	2	0	16	0	20	0	0.0
Cholera	52	0	14	0	219	3	285	3	1.1
Dengue Fever	8	0	12	0	5	0	25	0	0.0
Diarrhoea	39,170	0	41,132	0	52,489	0	132,791	0	0.0
SARI	1,382	13	1,616	9	2,314	11	5,312	33	0.6
Measles	290	0	402	0	514	0	1,206	0	0.0
Neonatal Tetanus	0	0	0	0	1	0	1	0	0.0
Pneumonia	24,514	0	22,027	0	22,519	0	69,060	0	0.0
Rabies	2	0	2	0	1	0	5	0	0.0
Typhoid	5,421	0	14,523	0	6,597	0	26,541	0	0.0
Total	73,044	13	81,730	9	87,009	15	241,783	37	-

Table 3 provides the number of cases and deaths caused by immediate reportable conditions each month during July through September 2023. The month total cases varied from 73,044 in July to 87,009 in September. The condition with highest case fatality rate was suspected cases of anthrax, 1 (2.0%) of 50 persons with suspected anthrax died.

Table 4: Number of reported cases of illnesses by region, July – September, 2023.

Region	AFP	Animal Bites	Anthrax	Bloody Diarrhoea	Cholera	Dengue Fever	Diarrhoea	Measles	SARI	Neotal Tetanus	Pneumonia	Rabies	Typhoid
Arusha	11	452	33	6	89	0	5,970	183	208	0	7,645	2	224
Dar Es Salaam	16	254	0	0	0	25	6,876	3	1,197	0	4,119	1	548
Dodoma	15	487	0	0	0	0	8,969	43	862	0	3,896	0	1,307
Geita	16	124	0	0	0	0	5,023	6	0	0	2,176	0	431
Iringa	9	202	0	1	0	0	1,211	40	131	0	780	1	206
Kagera	33	212	0	0	0	0	5,223	57	0	0	1,927	0	486
Katavi	9	170	0	0	0	0	4,469	56	0	0	1,377	0	328
Kigoma	24	213	0	0	35	0	6,714	71	666	0	2,588	0	191

Region	AFP	Animal Bites	Anthrax	Bloody Diarrhoea	Cholera	Dengue Fever	Diarrhoea	Measles	SARI	Neotal Tetanus	Pneumona	Rabies	Typhoid
Kilimanjaro	44	281	1	0	14	0	2,043	66	0	1	3,438	0	232
Lindi	9	170	0	0	0	0	2,165	33	112	0	942	0	523
Manyara	15	243	0	0	0	0	2,416	19	247	0	3,394	0	818
Mara	22	317	0	0	147	0	8,124	39	452	0	2,804	0	861
Mbeya	11	185	0	0	0	0	3,757	135	197	0	2,441	0	2,222
Morogoro	10	431	0	0	0	0	6,020	29	138	0	4,162	0	1,299
Mtwara	17	122	0	0	0	0	2,729	54	302	0	1,256	0	110
Mwanza	26	218	0	0	0	0	7,280	45	428	0	2,645	0	10,491
Njombe	7	138	0	4	0	0	853	22	0	0	805	0	528
Pwani	8	283	0	1	0	0	3,617	9	10	0	2,277	0	335
Rukwa	5	199	0	0	0	0	6,781	0	88	0	2,008	0	535
Ruvuma	9	285	0	0	0	0	5,165	127	18	0	3,404	0	934
Shinyanga	12	138	0	8	0	0	6,003	18	0	0	2,436	0	879
Simiyu	21	175	0	0	0	0	9,610	33	0	0	793	0	291
Singida	8	324	0	0	0	0	4,378	28	195	0	1,942	0	605
Songwe	13	82	16	0	0	0	4,090	2	0	0	1,858	0	958
Tabora	7	203	0	0	0	0	8,591	38	52	0	3,953	0	1,123
Tanga	22	180	0	0	0	0	4,714	50	9	0	3,994	1	76
Total	399	6,088	50	20	285	25	132,791	1,206	5,312	1	69,060	5	26,541

During the 3 months beginning July 2023, a total of 241,783 cases of reportable conditions were reported whereby all 26 regions reported Acute Flaccid Paralysis (AFP), animal bites, diarrhea, pneumonia and typhoid. Most cases, 132,791 were due to diarrhea and majority of cases were reported from Simiyu 9,610 (7.2%), Dodoma 8,969 (6.8%), Tabora 8,591 (6.5%) and Mara 8,124 (6.1%) (Table 4).

CONCLUSIONS

The IDSR analyzed data for July to September (WHO epidemiological week 27-39) showed that the performance based on timeliness and completeness were high based the set national standard of $\geq 90\%$. This is encouraging that the Government is well positioned to detect and report reportable diseases and conditions for immediate response to avert disease outbreak to happen. On the other hand, there is an urgent need for the Government to institute new and reinforcing available preventive and control measures against diarrhea and pneumonia as the two continued

to be the leading reportable conditions. Based on high fatality rate of anthrax, the Government need to improve preventive measures such as educating communities on proper handling animals, timely animal vaccination, and immediate referral of cases to ensure they are properly managed.

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MUHTASARI

Mkakati wa Ufuatiliaji na Udhhibiti wa Magonjwa ya Mlipuko (IDSR): Ripoti ya miezi mitatu, Julai- Septemba 2023 (Wiki 27-29)

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Usuli: Wizara ya Afya (WAF) hutumia mkakati wa Ufuatiliaji na Udhhibiti wa Magonjwa ya Mlipuko (IDSR) kufuatilia magonjwa na hali zinazoripotiwa kugundua na kudhibiti magonjwa ambayo ni chanzo cha vifo, na ulemavu. Makala hii inaripoti matokeo ya uchambuzi wa taarifa za IDSR kwa kipindi cha miezi 3 cha July hadi Septemba 2023 ambapo ni wiki ya 27-29 ya Shirika la Afya Duniani (WHO). Takwimu zilichambuliwa kutathmini utendaji wa mikoa katika utoaji wa taarifa na kufahamu idadi ya visa na vifo vya kila ugonjwa kulingana na mwezi na mkoa. Utendaji ulitathminiwa kulingana na kiwango cha kitaifa cha asilimia 90 au zaidi.

Uchambuzi: Mikoa yote 26 ya Tanzania Bara iliwasilisha ripoti za kila wiki kwa ngazi ya kitaifa. Mikoa ilipata wastani wa asilimia 95.0 kwa wakati unaofaa (ufanisi) (kwa mfano, asilimia ya wilaya zinazoripoti kwa wakati kwa ngazi ya kitaifa) na asilimia 98.5 kwa ukamilifu (yaani, asilimia ya wilaya zinazotoa ripoti kamili kwa ngazi ya kitaifa). Katika kipindi cha miezi 3, jumla ya visa 241,783 na vifo 37 viliripotiwa kwa magonjwa yote IDSR. Ugonjwa ulioripotiwa zaidi ni kuhara ($n = 123,791$, asilimia 54.9) kati ya visa vilivyoripotiwa kutoka mikoa yote ambapo mikoa 6 ilikwa na visa vingi hii ni Simiyu visa 9,610 kati ya 123,791 (asilimia 7.2), Dodoma visa 8,969 (asilimia 6.8), Tabora visa 8,591 (asilimia 6.5) na Mara visa 8,128 (asilimia 6.1). Mwezi wa Septemba ulikuwa na

visa vingi, visa 87,009 kati ya 241,783 (asilimia 36.0). Kati ya vifo 37 vilivyoripotiwa, visa vingi vilisababishwa na maabukizi makali ya njia ya kupumua (Severe Acute Respiratory Infection, SARI) ($n = 33$, asilimia 89.2). Ugonjwa uliokuwa na kiwango cha juu cha vifo ilikuwa ni kimeta. Kati ya visa 50 vilivyoshukiwa kuwa na ugonjwa wa kimeta, 1 alikufa (CFR = asilimia 2.0).

Hitimisho: Uchambuzi wa takwimu za IDSR ya Julai hadi Septemba 2023 (wiki ya 27-39 ya WHO) ulionyesha kuwa utendakazi kwa kwa kuzingatia wakati unaofaa (ufanisi) na ukamilifu ukiwa wa juu kulingana na kiwango cha kitaifa cha asilimia ≥ 90 . Hili ni jambo la kutia moyo kuwa Serikali kuwa iko katika nafasi nzuri zaidi kwani mfumo huu wa ufuatiliaji unaweza kubaini na kutoa taarifa kwa ajili ya kuchukua hatua za haraka ili kuzuia mlipuko wa magonjwa kutokea. Kwa upande mwingine, kuna haja ya haraka kwa Serikali kuanzisha mbinu mpya na kuimarisha hatua zilizopo za kujikinga na kudhibiti ugonjwa wa kuhara na nimonia kwani ni magonjwa yanayoendelea kuongoza kuripotiwa. Kwa kuzingatia kiwango cha juu cha vifo vya washukiwa wa ugonjwa wa kimeta, Serikali inahitaji kuboresha hatua za kinga ikiwa ni pamoja na kuelembisha jamii juu ya tahadhari na jinsi sahihi ya kushughulikia mifugo/wanyama na utumiaji wa mazao (nyama, maziwa) yao, chanjo kwa wanyama kwa wingi na kuboresha matibabu kwa visa vinavyotokea.

Leave No One Behind: Test all HIV Exposed Infants

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KEY MESSAGES

- » Each year ~10,000 babies die in Tanzania before their first birthday from treatable HIV-related infections.
- » Only 7 out of 10 babies delivered by HIV-infected mothers are tested within 6 weeks of birth in Tanzania.
- » Hence, 6 out of 100 HIV Exposed Babies (HEI) acquire HIV infections in Tanzania yearly (1).
- » HIV-exposed babies are not tested on time due to ineffective sample collection, testing system, and missed appointments.
- » The availability of rapid testing at primary healthcare facilities can save up to 9,000 HIV-exposed babies each year.

PROBLEM STATEMENT

Globally, only 60% of children born to HIV-infected mothers are tested on time. Late testing increases the rate of HIV-related illnesses and mortality. Children lag behind the adult population in all dimensions having a significantly lower testing coverage (86% vs 59%), low use of Anti-retroviral (76% vs 52%), and lower virus control (70% vs 41%) as shown in figure 1 [1,2].

In Tanzania, around 60,000 newborns are delivered by HIV-infected women each year. Sadly, only 70% of these children are tested on time, and fewer HIV exposed (40.7%) have been receiving the confirmatory test at 18 months of age [3].

The World Health Organization (2019) recommends that 90% of exposed children are tested four or five times (at birth for high-risk infants, within 2 months after delivery, 9 months, 3 months after cessation of breast feeding, and at 18 months of age) as per HIV guidelines [4].

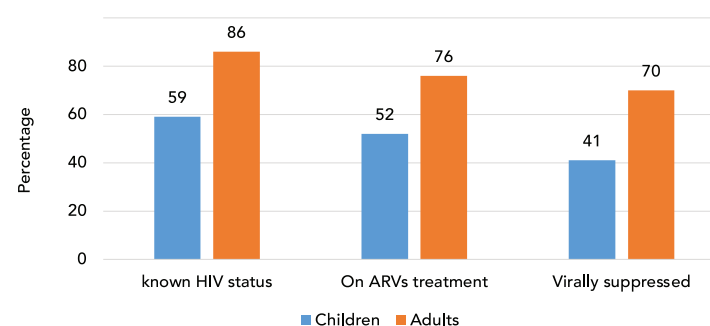


Figure 1: Differences in testing, ARV use, and viral suppression between children and adults in 2022 [2].

Due to low HIV testing coverage around 6 out of 100 HIV-exposed infants acquire infection through vertical transmission [1, 4]. Also, studies show that most exposed infants (around 10,000) die before their first birthday each year from preventable HIV-related complications in Tanzania.

In Tanzania's mainland, only 3 regions have reached the required goal of testing at least 90 out of every 100 HIV-exposed infants. The rest (21 regions) are below the testing goal (Figure 2).

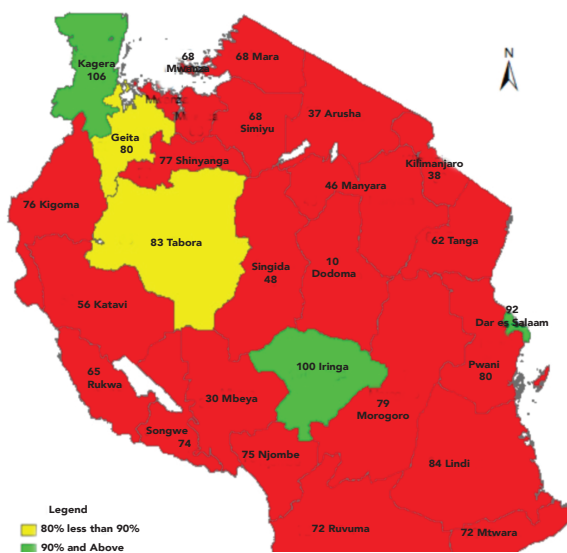


Figure 2: A map of Tanzania showing the number of HIV-exposed infants per region (most regions are below the testing goal)

The major gap originates in the existing testing approach where 1 out of 3 samples collected are not tested and approximately 30% of HIV-exposed infants are not tested at all within 6 weeks [5]. A recent Life Study pilot initiative installed point-of-care sites in 7.7% of 26 regions and increased the number of HIV-exposed infants tested on time by up to 3 folds in the year 2019. In 2020, the intervention of Point of Care testing (POCT) was scaled up to 54 health facilities with GeneXpert machines as an adaption from the best practices documented from life study (Mbeya and Songwe regions) and the target is to scale to 340 GeneXpert machines.

Secondly, community involvement in early infant diagnosis is still suboptimal specifically in males where only 50% are actively involved in PMTCT services. Interventions to improve male involvement in HIV services have shown greater success in improving HIV Exposed Infants (HEI) testing services uptake where the number of children tested on time increased by more than 13 folds [6].

POLICY OPTIONS

To increase the number of HIV-exposed infants tested on time from the current 70%, the Ministry of Health should strengthen

the testing capacity and invest more in community interventions to increase male involvement in PMTCT services. Policy options that are likely to improve testing coverage of HEI include scale-up of POCT services and strengthening male involvement in PMTCT services.

OPTION 1: Scale up the number of optimized GeneXpert machines performing point-of-care testing for EID from the current 130 to 340

WHY: The use of conventional laboratory testing platforms takes around 14 days for the results to reach the requesting facility, prone to transportation constraints, rejects about 25 out of every 100 samples, and requires 1 hour of documentation. This is higher compared to POC testing which offers immediate results and has 0 rejection rates with a less documentation burden.

FEASIBILITY: High (POCT has demonstrated higher coverage rates, Figure 3)

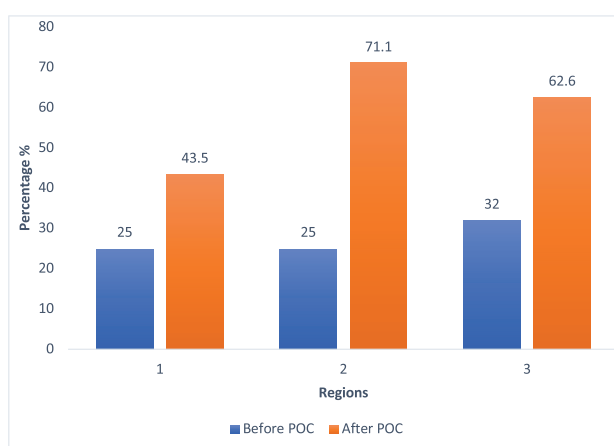


Figure 3: A graph comparing coverage of HIV-exposed infants testing before and after the introduction of POCT in three pilot regions in Tanzania [4, 7].

OPTION 2: Develop male service packages at the Reproductive and Child Health Clinics to strengthen their involvement in PMTCT services

WHY: Disclosure of HIV among partners is associated with 13.39-fold higher Early Infant Diagnosis testing.

FEASIBILITY: High

Table 1: Economical Evaluation Policy Options

	Status quo	POC	Male involvement + POC
Target population (exposed infants)	58,592	58,592	58,592
% of exposed infants tested per year	68.5%	92%	98%
Number of infants dying per year	10,000	7,746	6,990
Difference in lives saved per year	-	2,554	3,010
Annual costs of testing infants + prophylaxis (USD)	5,497,362	7,166,622	7,749,425
Difference in testing and prophylaxis costs (USD)	-	1,669,260	2,252,063
Cost per life saved	-	654	748

Table 2: Feasibility Determination

	Scale up and Optimization of POCT	Male involvements
Political feasibility	Highly feasible	Highly feasible
Operational feasibility	Highly feasible	Somewhat feasible

Key: Highly feasible ■ Somewhat feasible ■

EVALUATION AND RECOMMENDATIONS

Number of optimized POCT platforms should be increased from 130 to 340. The cost of establishing a single POCT is 6.7 times less compared to the conventional platform. It has a life span of 7 years compared to the 5 years of the conventional testing machines in use and screening costs less by 2.01 USD [8]. This option is 8.55 more cost-effective compared to the conventional laboratory platform (Incremental cost-effectiveness ratio - ICER = 8.55) which is politically and operationally feasible (Tables 1 and 2). Therefore, the POCT increases access to EID testing services by complementing gaps in conventional laboratories.

NEXT STEP

- » The number of POC platform should be increased from 130 to 340 in order to optimize all the available GeneXpert machines by the end of 2025. This will increase EID coverage and complement conventional platform testing
- » POC is likely to increase EID testing rates because it has a low cost per life saved (654) and averted death changes by 2,554 as compared to baseline intervention (Status quo).

ACKNOWLEDGMENTS

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Usimwache Yeyote Nyuma: Pima Watoto wote Wachanga Waliozaliwa na Mama Mwenye VVU

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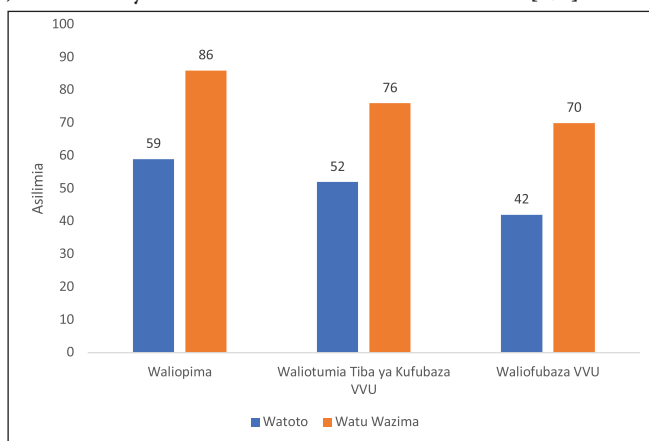
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UJUMBE MUHIMU

- » Kila mwaka karibu watoto wachanga wapatao 10,000 hufa nchini Tanzania kabla ya siku yao ya kuzaliwa ya kwanza kutokana na maambukizi yanayotibika yanayohusiana na mtoto kuwa na maambukizi ya VVU.
- » Watoto wachanga wanaopima VVU ni asilimia 70 pekee ya wale walio katika hatari ya kupata (HEI) VVU ndani ya wiki 6 baada ya kuzaliwa nchini Tanzania.
- » Hatimaye, inakadriwa kuwa watoto 6 kati ya 100 walio katika hatari ya kupata (HEI) VVU wanapata maambukizi ya VVU nchini Tanzania.
- » Watoto wachanga walio katika hatari ya kupata VVU hawapimwi kwa wakati kwa sababu ya uhafifu wa ukusanyaji wa sampuli, mfumo wa upimaji na kutofuatilia ahadi za upimaji zinazotolewa.
- » Upatikanaji wa upimaji wa haraka katika vituo vya afya ya msingi vya kutolea huduma ya afya unaweza kuokoa watoto walio katika hatari ya kupata VVU (HEI) wapatao 9,000 kila mwaka.

TAARIFA ZA CHIMBUKO LA TATIZO

Ulimwenguni, ni asilimia 60 tu ya watoto wanaozaliwa na mama walioambukizwa VVU hupimwa kwa wakati. Uchelewaji wa upimaji huongeza kiwango cha magonjwa na vifo vinavyohusiana na VVU. Watoto wana kiwango cha chini ukilinganisha na viwango vya watu wazima katika nyanja zote wakiwa na kiwango cha chini cha huduma ya upimaji (asilimia 86 dhidi ya asilimia 59), matumizi ya chini ya Dawa za Kufubaza Virusi vya Ukimwi (ART) (asilimia 76 dhidi ya asilimia 52), na udhibiti mdogo wa wingi wa VVU (asilimia 70 dhidi ya asilimia 41) kama inavyooneshwa katika kielelezo namba 1 [1,2].



Kielelezo Namba 1: Tofauti za upimaji, matumizi ya ARV na kupunguza uwingi wa VVU kati ya watoto na watu wazima mwaka 2022 [2]

Nchini Tanzania, karibu watoto 60,000 wanaozaliwa huzaliwa na wanawake walioambukizwa VVU kila mwaka [2]. Cha kusikitisha ni kwamba, ni asilimia 70 tu ya watoto hawa wanapimwa kwa wakati na wachache zaidi ya asilimia 40.7 kwa wale walio katika hatari ya kuambukizwa VVU huwa wanapima kipimo cha kuthibitisha katika umri wa miezi 18 [3]. Shirika la Afya Duniani (2019) linapendekeza kwamba asilimia 90 ya watoto walio katika hatari ya kuambukizwa wapimwe mara nne au tano (wakati wa kuzaliwa kwa watoto wachanga walio katika hatari kubwa ya kuambukizwa VVU, ndani ya miezi 2 baada ya kujifungua, miezi 9, miezi 3 baada ya kuachishwa kunyonya na miezi 18) kulingana na mwongozo wa upimaji wa VVU[4].

Kutokana na kiwango cha chini cha upimaji wa VVU, takribani watoto 6 kwa kila watoto wachanga 100 walio katika hatari ya kupata VVU hupata maambukizo kupitia kwa mama [1, 4]. Pia tafiti zinaonyesha kuwa watoto wengi wachanga walio katika hatari ya kuambukizwa (takribani 10,000) hufa kabla ya kusherehekea siku yao ya kuzaliwa kila mwaka kutokana na matatizo yanayoweza kuzuilika yanayohusiana na VVU nchini Tanzania. Kwa Tanzania Bara, ni mikoa 3 pekee ndiyo imefikia lengo linalohitajika la kupima angalau watoto 90 kati ya 100 walio katika hatari ya kuambukizwa VVU. Mikoa mingine (mikoa 21) iliyobaki iko chini ya lengo kwa upimaji (Kielelezo Namba 2).

Jedwali Namba 1: Tathimini ya kiuchumi wa Maoni Kisera

	Hali ilivyo sasa	POC	Ushiriki wa wanaume + POC
Walengwa (Watoto waliozaliwa na mama mwenye VVU)	58,592	58,592	58,592
% ya Watoto waliozaliwa na mama mwenye VVU waliopimwa kwa mwaka	68.5%	92%	98%
Idadi ya Watoto wanaofariki kwa mwaka	10,000	7,746	6,990
Tofauti ya vifo vitakavyoepukwa kwa mwaka	-	2,554	3,010
Gharama za kupima Watoto na kutoa dawa za kuzuia maambukizi ya VVU (USD)	5,497,362	7,166,622	7,749,425
Tofauti ya gharama katika kupima na kutoa dawa za kufubaza VVU (USD)	-	1,669,260	2,252,063
Gharama zitakazoepukwa kimaisha	-	654	748

Jedwali Namba 2: Uamuzi Yakiniifu

	Kupanua na Kuboresha Huduma za POCT	Ushiriki wa Wanaume
Uwezekano wa Kisiasa*		
Uwezekano wa Kiutendaji		

Maelekezo: Inawezekana sana



Inawezekana kiasi



TATHIMINI NA MAPENDEKEZO

Idadi ya vituo vinavyotoa huduma ya POCT vinapaswa kuongezeka kutoka 130 hadi 340. Gharama ya kufunga POCT moja ni mara 6.7 ndogo ikilinganishwa na kituo cha kawaida. Pia kituo cha POCT kina muda wa kutumika kwa miaka 7 ikilinganishwa na miaka 5 ya mashine za kawaida za kupima zinazotumika kwa uchunguzi. Kwa kutumia POCT gharama za uchunguzi zitakuwa chini kwa Dola za Kimarekani 2.01 [8]. Chaguo hili ni la gharama nafuu zaidi ikilinganishwa na uchunguzi kawaida wa maabara ambayo inawekana kutekelezwa kwa ungwaji mkono kisiasa na kiutendajina kama ilivyoonyeshwa Jedwali namba 1 na 2 (Uwiano wa kuongezeka kwa ufanisi wa gharama - ICER = 8.55). Kwa hivyo, POCT itaongeza ufikiwaji wa huduma za upimaji wa EID kwa kupunguza mapungufu katika upimaji kwa kutumia maabara za kawaida.

HATUA ZINAZOFUATA

- » Idadi ya vituo vya POC vinapaswa kuongezwa kutoka 130 hadi 340 ili kuboresha matumizi ya mashine zote zilizopo za aina GeneXpert ifikapo mwisho wa mwaka wa 2025. Hii itaongeza uwingi wa upimaji wa EID ili kufidia mapungufu wa upimaji wa kutumia njia za kawaida
- » POC inauwekezana wa kuongeza viwango vya upimaji wa EID kwa sababu ina gharama ya chini kwa kila maisha yaliyookolewa (654) na vifo vitapungua kwa kiasi cha vifo 2,554 ikilinganishwa na afua iliyopo ya upimaji (Hali ilivyo sasa)

SHUKRANI

Tunashukuru mchango wa mafunzo tuliyopata kupitia programu ya Takwimu na Sera (D2P) inayoratibiwa na CDC juu ya

namna ya kuandika kijarida sera. Shukrani za pekee kwa washauri wetu kwa maelekezo na uwepo wao kipindi chote cha uandishi wa kijarida sera hiki. Kwa washiriki wote wa D2P, asanteni sana kwa maoni yenu na ushauri kipindi chote cha kuandika kijarida hiki.

REFERENCES

1. HIV sub-national estimates viewer UNAIDS, Avenir Health, Imperial College London, and the UNAIDS Reference Group on Estimates, Models and Projections. [Available from: <https://naomi-spectrum.unaids.org/>].
2. IN DANGER: UNAIDS Global AIDS Update 2022. Geneva: Joint United Nations Programme on HIV/AIDS; 2022. Licence: CC BY-NC-SA 3.0 IGO.
3. Ministry of Health. District Health Information System (DHIS2) - Tanzania. Unpublished; 2022.
4. UNI221734 U, Farran G. COMPREHENSIVE PACKAGE OF CARE FOR INFANTS AND YOUNG CHILDREN EXPOSED TO HIV.
5. Ministry of Health. The prevention of mother-to-child transmission of HIV-1 infection (Tanzania). Unpublished; 2021.
6. Hampanda KM, Nimz AM, Abuogi LL. Barriers to uptake of early infant HIV testing in Zambia: the role of intimate partner violence and HIV status disclosure within couples. AIDS research and therapy. 2017;14(1):1-9.
7. Ministry of Health. The prevention of mother-to-child transmission of HIV-1 infection (Tanzania). Unpublished; 2022.
8. Salvatore PP, De Broucker G, Vojnov L, Moss WJ, Dowdy DW, Sutcliffe CG. Modeling the cost-effectiveness of point-of-care platforms for infant diagnosis of HIV in sub-Saharan African countries. Aids. 2021;35(2):287-97.

The MAMA Intervention: A Simulation and Experiential Learning Intervention for Labor and Delivery Providers to Address HIV Stigma During Childbirth in Tanzania

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KEY MESSAGES

- » Human Immunodeficient Virus (HIV) stigma during childbirth can affect women living with HIV's birth experience and their commitment to long-term HIV care.
- » The MAMA (Mradi wa Afya ya Mama Mzazi) training used a simulation learning modality to improve the delivery of respectful and non-stigmatizing maternity care by labor and delivery (L&D) providers.
- » The MAMA training significantly improved providers' use of respectful maternity care (RMC) practices, reduced HIV stigma, and improved provider self-efficacy to care for women giving birth, including women living with HIV (WLHIV).
- » We recommend that the Ministry of Health adapt and scale up MAMA training country-wide to support RMC services provision.

PROBLEM STATEMENT

HIV stigma during the intrapartum period (labor and delivery) can impact the birth experience of Women Living with HIV (WLHIV), and in turn, can influence women's long-term commitment to HIV care. Prevention of Mother to Child Transmission (PMTCT) programs have successfully achieved widespread HIV testing and counseling coverage among pregnant women has increased from 8% (2005) to 35% (2010) indicating a notable expansion in access [1]. Robust PMTCT programs have been developed to address the clinical and psychosocial needs of WLHIV during the pregnancy and postpartum periods. However, HIV-centered care during the intrapartum period has largely been neglected [2].

Respectful Maternity Care (RMC) during labor and delivery (L&D) by providers may help WLHIV overcome internalized and anticipated stigma. The World Health Organization (WHO) defines RMC as care that is free from mistreatment, maintains dignity and confidentiality, and enables informed choice and continuous support during childbirth [3]. Such practices not only improve outcomes for women and children but also reduce experiences of stigma, disrespect, and abuse, which results in greater engagement and trust in the healthcare system [4,5]. Thus, stigma reduction, which is one of the interventions in PMTCT has focused on providers supporting women in the prenatal and postnatal periods [6–8]. Engaging providers during L&D to ensure they provide respectful and non-stigmatizing care is an opportunity that may improve the childbirth experience, which in turn can promote women's continued commitment to HIV care [9].

Simulation learning can change providers' attitudes and

behaviors and improve the delivery of RMC [10]. The goal of this policy brief is to describe the evaluation of MAMA (Project to Support the Health of Women Giving Birth), a simulation team-training curriculum for L&D providers that addresses providers' instrumental and attitudinal stigma toward WLHIV and promotes the delivery of evidence-based, RMC for WLHIV.

INTERVENTION

The MAMA study had three aims; examine HIV stigma during labour, develop the mama intervention and pilot mama intervention (Figure 1). The study was conducted in the Kilimanjaro Region, within Moshi (urban) and Rombo (rural) communities. We included six primary health centers, including 4 Government hospitals and 2 Designated District Hospitals.

In order to get stakeholder feedback on the intervention design, we convened an advisory board comprised of representatives from the Kilimanjaro region and two districts (Rombo and Moshi) medical officers. During two advisory board meetings, we reached consensus to use a team-based simulation training because it was seen as have value in addressing the embedded nature of HIV stigma and L&D care.


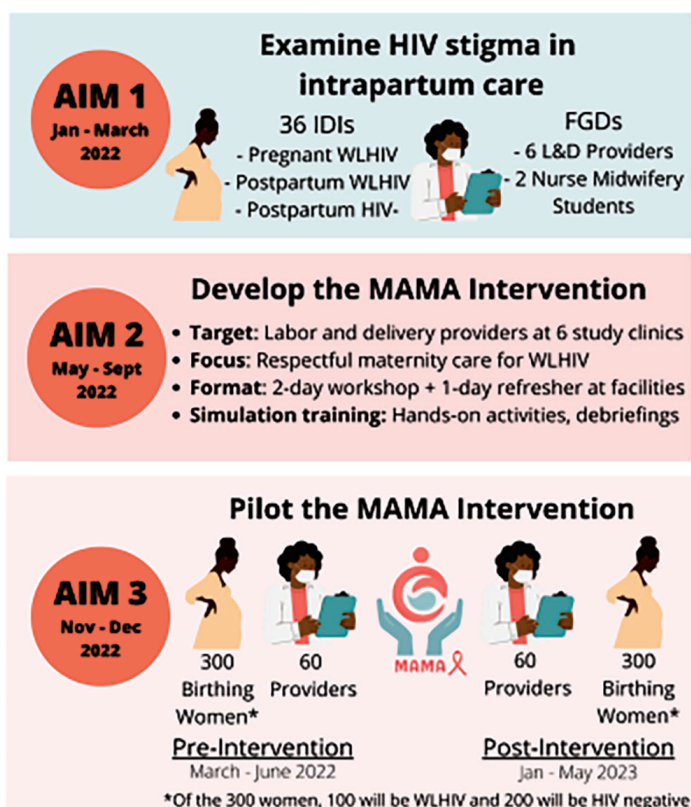
We decided to develop the MAMA intervention based on the simulation training model developed by the global non-governmental organization (NGO), PRONTO International, which has developed low-tech and low-cost tools to provide highly realistic birth simulation. The PRONTO model has been applied and evaluated in multiple settings, including East Africa, which has shown to improve provider skills [11,12], reduce morbidity and mortality [13,14], and improve the use of RMC practices [15].

Development of the MAMA intervention took place from

January to November 2022. This was integrated and used a participatory design principle to ensure local needs are met through a continuous and iterative input from stakeholders, enabling those who would benefit from the intervention to drive its creation. Participatory design principle is an approach ensures that design is not done for users but created with them, and it allows for collective ownership and shared responsibility. Therefore, the intervention was held for two-and-half-a day with a simulation training workshop to L&D providers, followed by a one-day in situ refresher course, a one month later. The training used interactive, real situation scenarios to allow engagement with team trainees in clinical practice and behavioral skills.

The MAMA Study: Mradi wa Afya ya Mama Mzazi

Study Overview

INTERVENTION EVALUATION

A pilot in six healthcare facilities in the Kilimanjaro Region was conducted from November to December 2022. The MAMA intervention was delivered to 60 providers in November 2022. MAMA study team members and three Kenyan trainers from PRONTO International conducted the two and a half day training in Kiswahili, and the MAMA study team members made post training follow up to clinical sites one month later to do a refresher training.

All the sixty participants completed assessments for four sittings: baseline, immediately post-training, one-month post-training, and three months post-training that aimed to evaluate the impact of MAMA training. Primary outcome was practice of RMC, which was assessed using a 9-item validated measure [16]. Secondary outcomes were stigma (including use of extra precautions, fear of HIV acquisition, and stigmatizing attitudes) and self-efficacy (including caring for all birthing women and caring for WLHIV). Approximately four months after the training, the team did in-depth interviews with a sub-set of 15 providers to explore the impact of training on attitudes and practice.

Patient outcomes were evaluated by enrolling and assessing women giving birth in healthcare facilities before and after MAMA training (March 2022 to July 2022 and February 2023 to June 2023, respectively). Data analysis is ongoing and will be reported elsewhere.

RESULTS

- » RMC scores increased both at 1-month post-training and 3 months post-training (Figure 2).
- » Stigma scores in all aspects of stigma (extra precautions, fear of HIV acquisition, and stigmatizing attitudes) decreased at one month post training and remained low at 3 months post-training compared to pre-training (Table 1).
- » Provider's self-efficacy scores (caring for all birthing women and caring for WLHIV) increased immediately post-training and was still high at 3 months post training compared to pre-training scores (Figure 2).

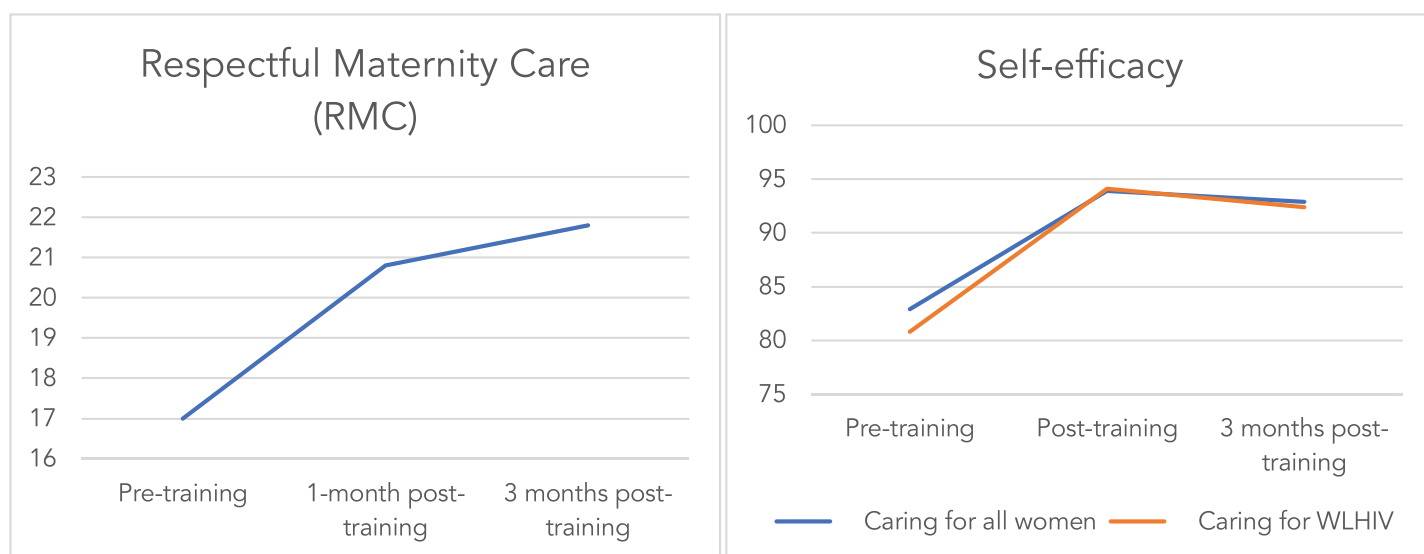


Figure 2: Trajectory of respectful maternity care scores and self-efficacy scores during study period

Table 1: Mean stigma scores across study timepoints

	Pre-training	Post-training	1-month post-training	3 months post-training
Extra precautions #	9.8		6.4	6.3
Fear of HIV acquisition *	6.5	1.8		3.2
Stigmatizing attitudes °	4.5	2.8		3.0

*Scores ranged from 0 – 27; #Score ranged from 0 – 21; °Score ranged from 0 – 18

PROVIDER FEEDBACK ON THE MAMA TRAINING

Provider feedback on the MAMA training was overwhelmingly positive. Providers spoke about gaining skills in clinical management, teamwork, and patient communication. The training helped them to develop more empathy for their patients, which changed the way they cared for WLHIV.

“MAMA training implanted something in my heart about wearing the shoes of the patient. [...]. What we do should touch peoples’ lives differently, the feeling inside, the passion.” (C1 Nurse, age 28).

“I used to have fear but right now I am normal, and she [the patient] is free, thinking that her problem is not a problem to the service provider. Therefore, the service becomes better and friendly, and the patient reduces self-stigmatization after seeing that we are just fine about it.” (C2 Doctor, age 52)

Providers shared their appreciation of the simulation training format, which helped them to hone their skills in practice and develop a self-improvement mindset.

“It helps a person to be more proactive and experienced when facing the actual situation, compared to just studying theoretically. When the act is real, you will realize some of the mistakes and be able to understand what to do if the situation happens again.” (C3 Doctor, age 27)

RECOMMENDATIONS

When asked for any recommendations to share, participants felt that it was important for the MOH to consider the value of this training so that it may be shared throughout the country.

“I am telling the ministry of health that this training is good. It is educational because it is provided using practical means. This training returns the ethics of the work. For those who were using the abusive language they changed, those who did not know how to value mothers they know now, and those who did not know how to recognize emergencies now they know. So, this training is good and should be approved for more people to learn.” (C3 Nurse, age 32)

“I would like to request that the Ministry of Health should run these trainings so that it would spread all around the country to all health centers, so that as a country we can provide a similar kind of services. This would benefit our clients, but it would also benefit the service providers by increasing their knowledge.” (C2 Doctor, age 52)

CONCLUSIONS

The MAMA training, which is used simulation learning modality helped to improve the delivery of respectful and non-stigmatizing maternity care by L&D providers. The training observed a significantly improved providers’ use of RMC practices, reduced HIV stigma, and improved provider self-efficacy to care

for women giving birth, including WLHIV. Providers spoke highly about the training for their clinical practice and valued the simulation modality. Providers suggested that the MAMA training be scaled up to reach more providers in order to improve the services delivered to WLHIV who are giving birth.

To learn more about the MAMA training, please visit our study website <https://sites.google.com/gcloud.utah.edu/the-mama-study/home>.

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the National Institute for Medical Research (Protocol 3853). The trial is registered at clinicaltrials.gov (NCT05271903). Informed consent obtained from all participants.

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Afua ya MAMA: Mafunzo ya Simulizi na Uzoefu kwa Watoa Huduma za Leba na Kujifungua ili Kushughulikia Unyanyapaa wa VVU Wakati wa Kujifungua Nchini Tanzania.

Mariam L. Barabara^{1,3*}, Melissa H. Watt², Maya J. Stephens², Linda M. Minja³, Virginie Marchand⁴, Olivia Hanson, Pendo Mlay^{1,5}, Janet Mlay³, Gaudensia Olomi^{1,6}, Susanna R. Cohen⁷, Gileard Masenga^{1,5} and Blandina T. Mmbaga^{1,3,5}

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UJUMBE MUHIMU

- » Unyanyapaa dhidi ya virusi vya upungufu wa kinga mwilini (UKIMWI) wakati wa kujifungua unaweza kuathiri wanawake wanaoishi na VVU juu ya uzoefu wao wa kujifungua pamoja na umakini wao katika kuhudhuria matibabu ya VVU kwa muda mrefu.
- » Mafunzo ya MAMA (Mradi wa Afya ya Mama Mzazi) yalitumia mbinu ya uigizaji halisia ili kuboresha utoaji wa huduma ya uzazi yenye heshima (RMC) na isiyonyanyapaa kwa watoa huduma za leba na kujifungua.
- » Mafunzo ya MAMA yaliboresha kwa kiasi kikubwa huduma ya uzazi zenye heshima kwa watoa huduma, ulipunguza unyanyapaa wa VVU, na kuboresha uwezo binafsi wa mtoa huduma kuhudumia wanawake wanaojifungua, wakiwemo wanawake wanaoishi na VVU.
- » Tunapendekeza kuwa Wizara ya Afya iratibu na kuongeza utolewaji wa mafunzo ya MAMA kwa nchi nzima ili kuwezesha kutolewa kwa huduma ya uzazi yenye heshima.

TAARIFA ZA CHIMBUKO LA TATIZO

Unyanyapaa wa VVU katika kipindi cha uzazi (leba na kujifungua) unaweza kuathiri uzoefu wa kujifungua kwa wanawake wanaoishi na VVU (WLHIV), na, kwa upande mwingine, unaweza kuathiri umakini katika uhudhuriaji wa muda mrefu kwenye matibabu ya VVU. Programu ya kuzuia Maambukizi kutoka kwa Mama kwenda kwa Mtoto (PMTCT) yamefanikisha upimaji na ushauri nasaha miongoni

mwa wanawake wajawazito kuongezeka kutoka 8% (2005) hadi 35% (2010) inaonyesha kupanuka kwa upatikanaji huduma [1]. Mipango thabiti ya program ya PMTCT imetengenezwa ili kushughulikia mahitaji ya kiafya na kisaikolojia ya WLHIV wakati wa ujauzito na baada ya kujifungua. Hata hivyo, huduma inayozingatia VVU katika kipindi cha kujifungua, kwa kiasi kikubwa sasa imepuuzwa [2].

Huduma ya heshima na isiyo ya unyanyapaa kutoka kwa

watoa huduma wa leba na kujifungua (L&D) inaweza kusaidia WLHIV kuondokana na unyanyapaa ambao umekuwa sehemu ya huduma inayotolewa na ule unaotarajiwa. Shirika la Afya Duniani (WHO) linatafsiri RMC kama matibabu yasiyo na unyanyasaji, kudumisha heshima na usiri, na inawezesha mjamzito kuwa na uchaguzi sahihi na kupata usaidizi endelevu wakati wa kujifungua [3]. Huduma hii sio tu inaboresha matokeo mazuri kwa wanawake na watoto lakini pia hupunguza unyanyapaa, kutoheshimiwa, na unyanyasaji, ambapo husababisha ushirikishwaji mkubwa na kujenga uaminifu katika mfumo wa afya [4,5]. Mpaka sasa, Mradi wa kupunguza unyanyapaa katika PMTCT umejikita kwa watoa huduma wanaosaidia wanawake katika kipindi cha ujuzito na baada ya kujifungua [6–8]. Kushirikisha watoa huduma za L&D ili kuhakikisha wanatoa huduma ya heshima na isiyonyanyapaa ni fursa ya kuboresha uzoefu wa kujifungua, ambapo kwa upande mwingine inaweza kuimarisha muendeleo wa matibabu ya VVU kwa wanawake [9].

Mafunzo ya uigizaji hasilia yanaweza kubadilisha mitazamo na tabia za watoa huduma na kuboresha utoaji huduma za RMC [10]. Lengo la muhtasari huu wa kisera ni kuelezea tathmini ya MAMA (Mradi wa Kusaidia Afya ya Wanawake Wanaojifungua), mtaala wa uigizaji halisi wa mafunzo ya watoa huduma wa L&D ambao unaelezea jinsi ya kushughulikia unyanyapaa na mtazamo wa watoa huduma dhidi ya WLHIV na kukuza utoaji wa huduma ya RMC iliyothibitishwa kwa WLHIV.

UTEKELEZAJI WA MRADI WA MAMA

Utafiti wa mradi wa MAMA ulikuwa na malengo matatu (Kielelezo 1). Utafiti huu ulifanyika katika Mkoa wa Kilimanjaro, wilaya ya Moshi (mjini) na Rombo (vijijini). Tulijumuisha vituo sita afya vya kutolea huduma, zikiwemo hospitali 4 za serikali na 2 Hospitali Teule za Wilaya.

Ili kupata maoni ya wadau kuhusu kutengeneza wa Afua, tulikutanisha bodi ya washauri iliyojumuishwa wawakilishi kutoka ofisi za maafisa matibabu mkoa wa Kilimanjaro na wilaya ya Moshi na Rombo. Katika mikutano miwili ya bodi ya washauri iliyofanyika, tulifikia makubaliano ya kutumia washiriki wa mafunzo ya uigizaji halisia kwasababu tuliona kama inakidhi kushughulikia hali ya unyanyapaa wa VVU ilivyo na huduma ya leba na kujifungua.

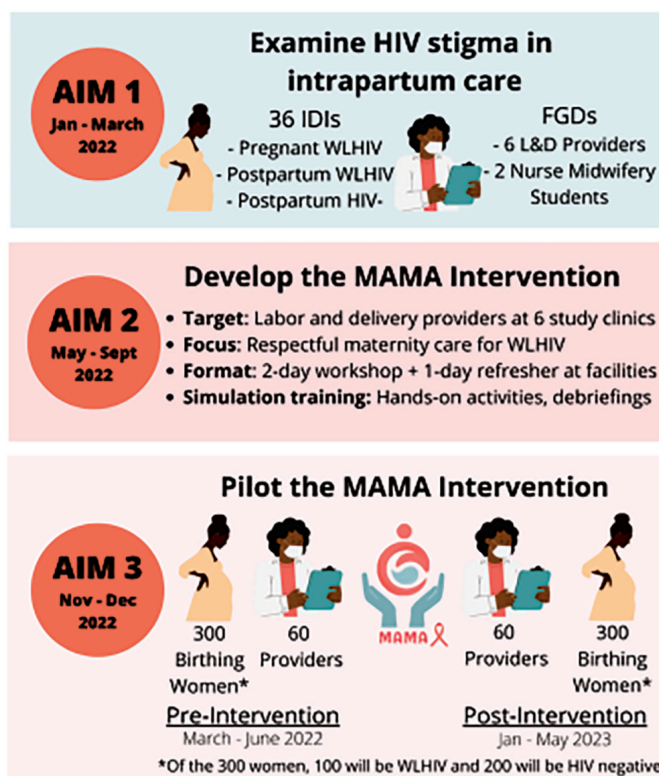
Tuliamua kutengeneza Afua ya MAMA inayofuata modeli/muundo wa mafunzo ya masimulizi ya uhalisia iliyobuniwa na shirika lisilo la kiserikali la kimataifa (NGO) la PRONTO, ambalo limetengeneza chombo kwa kutumia teknolojia ya chini na gharama nafuu ili kutoa simulizi ya ukweli juu ya kujifungua. Muundo wa PRONTO tayari imetumika na kutathminiwa katika

maeneo mengi mbalimbali, ikiwa ni pamoja na Afrika Mashariki, na imeonyesha kuongeza ujuzi kwa watoa huduma [11,12], kupunguza magonjwa na vifo [13,14], na kuboresha matumizi ya vitendo vya huduma ya uzazi wenye heshima [15].

The MAMA Study: Mradi wa Afya ya Mama Mzazi



Study Overview



Maandalizi ya mradi wa MAMA yalifanyika kuanzia Januari hadi Novemba 2022. Tulijumuisha kanuni za ushirikishwaji shirikishi katika mchakato ili kuhakikisha kuwa tunakidhi mahitaji ya ndani kupitia maoni ya mara kwa mara kutoka kwa wadau, kuwawezesha wale ambao wangepaidika na mradi ili kuendeleza utengenezaji wake. Warsha ya siku mbili na nusu ya mafunzo ya uigizaji wa uhalisia kwa watoa huduma wa L&D, ikifuatiwa na mafunzo ya siku moja ya uboreshaji wa uelewa mwezi mmoja baadaye vilifanyika. Mafunzo hutumia hali shirikishi, zenye uhalisia wa hali ya juu kwa kushirikisha timu za washiriki kujifunza kupitia uzoefu wa ujuzi na maarifa.

TATHMINI YA MRADI

Mradi ulifanyika katika vituo sita vya kutolea huduma za afya katika Mkoa wa Kilimanjaro kuanzia Novemba 2022 hadi Desemba 2022. Mafunzo ya Mradi wa MAMA yalitolewa kwa watoa huduma za afya 60 mwezi Novemba 2022. Watafiti wa mradi wa MAMA na wakufunzi watatu kutoka NGO ya Kimataifa ya PRONTO ya nchini Kenya walitoa mafunzo kwa washiriki kwa siku mbili na nusu kwa lugha ya Kiswahili. Timu ya watafiti na wakufunzi wa mradi wa MAMA walitembelea vituo vya kutolea huduma mwezi mmoja baadaye na kutoa mafunzo ya kukumbushia.

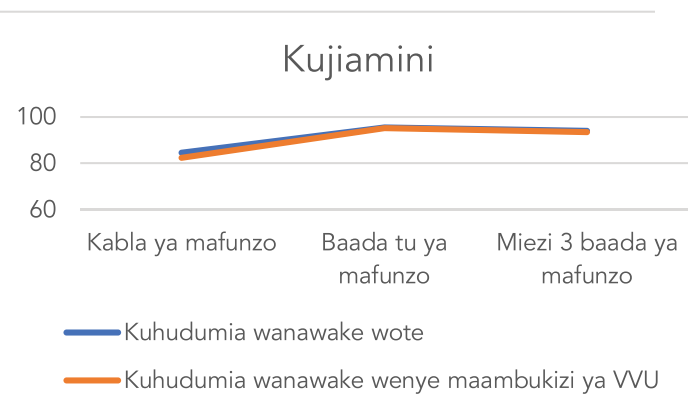
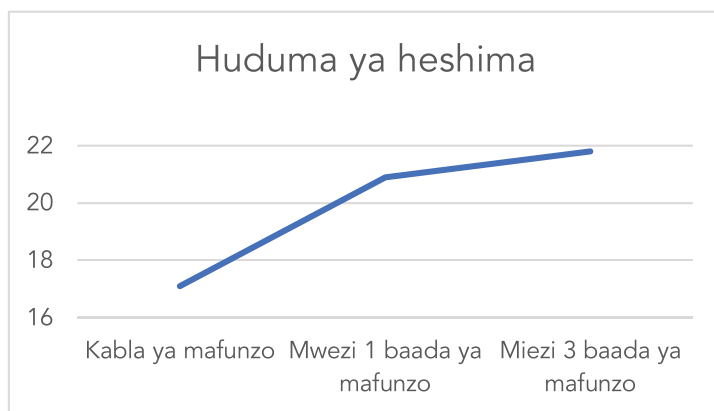
Washiriki sitini walikamilisha dodoso kwa kipindi cha nyakati nne tofauti kama ifuatavyo: (i) Kabla ya mafunzo ya awali, (ii) muda mfupi mara baada ya mafunzo, (iii) mwezi mmoja baada ya mafunzo, na (iv) miezi mitatu baada ya mafunzo. Hii ilikuwa na lengo la kutathmini mafanikio ya mafunzo ya MAMA. Matokeo ya msingi yalikuwa utendaji wa RMC, ambao ulipimwa kwa kutumia kigezo kilichothibitishwa cha maswali 9 [16]. Matokeo mengine yalikuwa juu ya unyanyapaa (ikiwa ni pamoja na matumizi ya ziada kwa tahadhari, hofu ya kupata VVU, na mitazamo ya unyanyapaa) na utendaji wake mwenyewe (ikiwa ni pamoja na kuhudumia wanawake wote wanaojifungua na kuwahudumia WLHIV). Takriban miezi minne baada ya mafunzo, tulifanya mahojiano ya kina kwa mmoja mmoja kwa wahudumu wa afya

15 ili kufahamu manufaa ya mafunzo juu ya tabia yao wenyewe na utoaji wao wa huduma kwa vitendo.

Matokeo kwa wagonjwa yalitathminiwa kwa kuandikisha na kutathmini wanawake wanaojifungua katika vituo vya kutolea huduma ya afya kabla na baada ya mafunzo ya MAMA (Machi 2022 hadi Julai 2022 na Februari 2023 hadi Juni 2023).

MATOKEO

- » Kama inavyoonekana kati Kielelezo namba 2, alama za kiutendaji wa RMC kwa wahudumu afya uliongezeka kwa mwezi 1 baada ya mafunzo na miezi 3 baada ya mafunzo.
- » Alama za unyanyapaa katika nyanja zote kwa watoa huduma za afya (tahadhari za ziada, hofu ya kupata VVU, na mitazamo ya unyanyapaa) zilipungua katika mwezi mmoja baada ya mafunzo na kubakia chini katika miezi 3 baada ya mafunzo ikilinganishwa na mafunzo ya awali (Jedwali 1).
- » Alama za uwezo wa mtoa huduma (kuhudumia wanawake wote wanaojifungua na kuhudumia WLHIV) ziliongezeka katika muda mfupi mara baada ya mafunzo na kubaki juu katika miezi 3 baada ya mafunzo ikilinganishwa na alama za kabla ya mafunzo ya awali (Kielelezo 2).



Kielelezo2: Mwelekeo wa alama za huduma ya uzazi wa heshima na alama za uwezo wa mtoa huduma katika kipindi cha utafiti

Jedwali 1: Wastani wa alama za tathmini kwa watoa huduma za afya juu unyanyapaa wakati wa Mradi wa MAMA

	Kabla ya mafunzo ya awali,	Muda mfupi mara baada ya mafunzo	Mwezi 1 baada ya mafunzo	Miezi 3 baada ya mafunzo
Tahadhari za ziada [#]	9.8		6.4	6.3
Hofu ya kupata VVU [*]	6.5	1.8		3.2
Mitazamo ya unyanyapaa ^o	4.5	2.8		3.0

[#]Alama zilianzia 0 – 27; ^{*}Alama zilianzia 0 – 21; ^oAlama zilianzia 0 – 18

MAONI YA WATOA HUDUMA KUHUSU MAFUNZO YA MAMA

Maoni ya watoa huduma kuhusu mafunzo ya MAMA yalikuwa chanya sana. Watoa huduma walizungumza kuhusu kuongeza ujuzi katika utoaji wa huduma, kufanyakazi kwa ushirikiano,

na jinsi ya kuwasiliana na mgonjwa. Washiriki walizungumza kuhusu jinsi mafunzo yalivyowasaidia kukuza uelewa zaidi wa utendaji kwa huruma kwa wagonjwa wao, ambayo ilibadilisha jinsi wanavyohudumia WLHIV.

“Mafunzo ya MAMA yalinipandikizia kitu moyoni mwangu wa kuvaa uhusika wa mgonjwa. [...] Tunachofanya kinapaswa kugusa maisha ya watu kwa njia tofauti, hisia za ndani, shauku.” (C1 Muuguzi, miaka 28).

“Nilikuwa na hofu lakini sasa hivi niko kawaida, na yeye [mgonjwa] yuko huru, akifikiri kwamba tatizo lake si tatizo kwa mtoa huduma. Kwa hiyo, huduma inakuwa bora na ya kirafiki, na mgonjwa anapunguza kujinyanyapaa baada ya kuona kwamba sisi tunachukulia kawaida kuhusu tatizo hilo la kiafya.” (C2 Daktari, miaka 52)

Watoa huduma walitoa tathimini zao kuhusu utolewaji wa mafunzo ya uigaji wa uhalisia, ambayo yaliwasaidia kuboresha ujuzi wao katika utendaji na kuboresha mawazo binafsi ya kiakili.

“Inasaidia mtu kuwa makini zaidi na mwenye uzoefu pale anapokabiliana na hali halisi, ikilinganishwa na kusoma tu kinadharia. Kitendo kinapokuwa cha kweli, utagundua baadhi ya makosa na utaweza kuelewa cha kufanya ikiwa hali hiyo itatokea tena.” (C3 Daktari, miaka 27)

MAPENDEKEZO

Walipoombwa iwapo wanamapendekezo yoyote, ilipendekezwa kwa Wizara ya Afya (MoH) kuchua hatua ya kupanua ufikishaji wa mafunzo nchi nzima.

“Ninapendekeza Wizara ya Afya kwamba mafunzo haya ni ya kiwango kizuri. Yanaelimisha kwa sababu hutolewa kwa njia za vitendo. Mafunzo haya yanarudisha maadili ya kazi. Kwa wale waliokuwa wanatumia lugha mbaya walibadilika, wale ambao hawakujua kuwathamini akina mama sasa wanawathanini, na wale ambao hawakujua jinsi ya kutambua uhitaji wa matibabu ya dharura, sasa wanafahamu. Hivyo, mafunzo haya ni mazuri na yanapaswa kuidhinishwa ili watu wengi zaidi wajifunze.” (C3 Muuguzi, miaka 32)

“Ningependa kuomba kwamba Wizara ya Afya iendeshe mafunzo haya ili yasambae nchi nzima hadi kwenye vituo vyote vya afya ili kama nchi tuweze kutoa huduma bora za aina hii. Hii itawanufaisha akinamama lakini pia itawanufaisha watoa huduma kwa kuongeza ujuzi wao.” (C2 Daktari, miaka 52)

HITIMISHO

Mafunzo ya MAMA yalitumia mbinu ya uigaji halisia wa kujifunza ili kuboresha utajiri wa huduma ya uzazi yenye heshima na huduma kwa mama toka kwa watoa huduma wa L&D bila unyanyapaa. Mafunzo hayo yaliboresha watoa huduma kwa kiasi kikubwa matumizi ya mbinu za RMC kwa vitendo, kupunguza unyanyapaa wa VVU, na kuboresha uwezo wa watoa huduma katika kuwahudumia wanawake wanaojifungua, ikiwa ni pamoja na WLHIV. Watoa huduma walipongeza zaidi kuhusu mafunzo

kwa vitendo ya kimatibabu na walithamini mbinu ya ufundishaji ya kuigiza katika uhalisia. Watoa huduma walipendekeza mafunzo ya MAMA yasambazwe sehemu mbalimbali ili kuwafikia watoa huduma wengi zaidi ili kuboresha huduma zinazotolewa kwa WLHIV wanaojifungua.

Ili kujifunza zaidi kuhusu mafunzo ya MAMA, tafadhali tembelea tovuti yetu ya mafunzo <https://sites.google.com/gcloud.utah.edu/the-mama-study/home>.

SHUKRANI

Utafiti huu ulifadhiliwa na Taasisi za Kitaifa za Afya za Marekani (R21 TW012001, MPI, Watt & Cohen) na pia na Ushirika wa Mafunzo wa Taasisi za Kitaifa za Afya ya Fogarty (D43 TW010543, PI, Fawzi). Maoni yaliyotolewa katika makala hii ni ya waandishi na si ya wafadhili. Tunawashukuru washiriki wa utafiti, wakusanyaji takwimu, wasimamizi wa hospitali, na wafanyakazi kwa utayari wao wa kutoa muda na taarifa zao kwa ajili ya utafiti huu. Utafiti ulipata kibali cha kimaadili nchini Tanzania kupitia KCMUCo (Itifaki 2516) na Taasisi ya Kitaifa ya Utafiti wa Matibabu (Itifaki 3853). Jaribio limesajiliwa katika clinicaltrials.gov (NCT05271903). Idhini ilipatikana kutoka kwa washiriki wote kabla ya utafiti.

REFERENCES

1. World Health Organization, UNAIDS & United Nations Children's Fund (UNICEF). Global HIV/AIDS response : epidemic update and health sector progress towards universal access : progress report 2011. 2011.
2. Cichowitz C, Watt MH, Mmbaga BT. Childbirth experiences of women living with HIV: a neglected event in the prevention of mother-to-child transmission care continuum. *AIDS* 2018;32:1537-9. <https://doi.org/10.1097/QAD.0000000000001860>.
3. World Health Organization. WHO recommendations on intrapartum care for a positive childbirth experience 2018.
4. Downe S, Lawrie TA, Finlayson K, Oladapo OT. Effectiveness of respectful care policies for women using routine intrapartum services: a systematic review. *Reprod Health* 2018;15:23. <https://doi.org/10.1186/s12978-018-0466-y>.
5. Rubashkin N, Warnock R, Diamond-Smith N. A systematic review of person-centered care interventions to improve quality of facility-based delivery. *Reprod Health* 2018;15:169. <https://doi.org/10.1186/s12978-018-0588-2>.
6. Watt MH, Knettel BA, Knippler ET, Kisigo G, Ngocho JS, Renju J, et al. The development of Maisha, a video-assisted counseling intervention to address HIV stigma at entry into antenatal care in Tanzania. *Eval Program Plann* 2020;83:101859. <https://doi.org/10.1016/j.evalprogplan.2020.101859>.
7. Watt MH, Knippler ET, Minja L, Kisigo G, Knettel BA, Ngocho JS, et al. A counseling intervention to address HIV stigma at entry into antenatal care in Tanzania (Maisha): study protocol for a pilot randomized controlled trial. *Trials* 2019;20. <https://doi.org/10.1186/s13063-019-3933-z>.
8. Peltzer K, Babayigit S, Rodriguez VJ, Jean J, Sifunda S, Jones

- DL. Effect of a multicomponent behavioural PMTCT cluster randomised controlled trial on HIV stigma reduction among perinatal HIV positive women in Mpumalanga province, South Africa. *SAHARA J J Soc Asp HIVAIDS Res Alliance* 2018;15:80–8. <https://doi.org/10.1080/17290376.2018.1510787>.
9. Hodgson I, Plummer ML, Konopka SN, Colvin CJ, Jonas E, Albertini J, et al. A Systematic Review of Individual and Contextual Factors Affecting ART Initiation, Adherence, and Retention for HIV-Infected Pregnant and Postpartum Women. *PLoS ONE* 2014;9:e111421. <https://doi.org/10.1371/journal.pone.0111421>.
 10. Afulani PA, Aborigo RA, Walker D, Moyer CA, Cohen S, Williams J. Can an integrated obstetric emergency simulation training improve respectful maternity care? Results from a pilot study in Ghana. *Birth* 2019;46:523–32. <https://doi.org/10.1111/birt.12418>.
 11. Dettinger JC, Kamau S, Calkins K, Cohen SR, Cranmer J, Kibore M, et al. Measuring movement towards improved emergency obstetric care in rural Kenya with implementation of the PRONTO simulation and team training program. *Matern Child Nutr* 2018;14 Suppl 1:e12465. <https://doi.org/10.1111/mcn.12465>.
 12. Vail B, Morgan MC, Spindler H, Christmas A, Cohen SR, Walker DM. The power of practice: simulation training improving the quality of neonatal resuscitation skills in Bihar, India. *BMC Pediatr* 2018;18:291. <https://doi.org/10.1186/s12887-018-1254-0>.
 13. Ghosh R, Spindler H, Morgan MC, Cohen SR, Begum N, Gore A, et al. Diagnosis and management of postpartum hemorrhage and intrapartum asphyxia in a quality improvement initiative using nurse-mentoring and simulation in Bihar, India. *PloS One* 2019;14:e0216654. <https://doi.org/10.1371/journal.pone.0216654>.
 14. Walker DM, Cohen SR, Fritz J, Olvera-García M, Zelek ST, Fahey JO, et al. Impact Evaluation of PRONTO Mexico: A Simulation-Based Program in Obstetric and Neonatal Emergencies and Team Training. *Simul Healthc J Soc Simul Healthc* 2016;11:1–9. <https://doi.org/10.1097/SIH.000000000000106>.
 15. Afulani PA, Aborigo RA, Walker D, Moyer CA, Cohen S, Williams J. Can an integrated obstetric emergency simulation training improve respectful maternity care? Results from a pilot study in Ghana. *Birth* 2019;46:523–32. <https://doi.org/10.1111/birt.12418>.
 16. Afulani PA, Aborigo RA, Nutor JJ, Okiring J, Kuwolamo I, Ogolla BA, et al. Self-reported provision of person-centred maternity care among providers in Kenya and Ghana: scale validation and examination of associated factors. *BMJ Glob Health* 2021;6:e007415. <https://doi.org/10.1136/bmjgh-2021-007415>.

Diagnosis and Management of Larvae Form of Pork Tapeworm in Human Brain in Tanzania

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KEY MESSAGES

- » Pork tapeworm (*Taenia solium*)-caused by larvae form in the brain (neurocysticercosis- NCC) affects over 50 million individuals globally, and it results in more than 50,000 fatalities annually. In Tanzania, 17 out of 100 individuals are reported to be infected by the larval form of the tapeworm while 2 to 5 out of 100 individuals are infected by the adult form of the tapeworm.
- » Neurocysticercosis is currently expensive and difficult to diagnose, comprising of multiple factors and stages as directed by Del Brutto criteria; and treating those who have been diagnosed can be more complicated, demanding highly skilled experts and close monitoring.
- » Improving diagnosis, treatment, prevention, and control of pork tapeworm infection has the potential to reduce morbidity and mortality caused by larvae of the pig worm in the human brain NCC in Tanzania.
- » Building the capacity of health facilities by equipping them with diagnostic modalities and training health workers will improve the management of larvae of the pork tapeworm in the human brain

PROBLEM STATEMENT

Taenia solium (T.solium), often known as the pork tapeworm, is the cause of the zoonotic, neglected tropical illness cysticercosis/taeniosis (1). The pork tapeworm is an important parasite transmitted between humans and pigs. The existence of cysticercosis in the brain and spinal cord is known as neurocysticercosis (NCC) (2).

Globally, NCC is responsible for about 3 out of every 10 acquired, avoidable cases of epilepsy in highly endemic areas (3). In Tanzania, epilepsy due to *Taenia Solium* larval form is common; approximately 18,000 cases and 212 deaths are reported annually (4). About 2-5% of humans are infected with adult pork tapeworm, and more than 16% of humans in endemic areas of Tanzania are infected by the larval form [1].

Diagnosis and treatment of larvae from tapeworm infections in the brain are complicated (5). In addition to the need for an experienced and adequate number of experts, diagnosis of the disease involves expensive tests (serological tests and neuroimaging such as Computed tomography-CT scan and Magnetic resonance imaging-MRI)(5, 6). Due to these challenges, pork tapeworm infestation in human beings is normally underdiagnosed and misdiagnosed in our settings. The diagnostic techniques of epilepsy secondary to NCC is expensive (e.g., CT scan costs > 200,000/- Tanzania shillings and *T. solium* serology test costs more than 100,000/- TZs). Unfortunately, most of the

people with epilepsy normally come from very poor households. (7). Epilepsy is one of the major manifestations of NCC and is normally underreported due to the fact that it is a stigmatized condition, but the common practice of seeking consultation from traditional medicine also contributes to underreporting especially in our settings (8). Therefore, there is a higher possibility that the reported prevalence is highly underreported and hence might not be representing reality.

This policy brief proposes the establishment of improved diagnosis and management of a pork tapeworm infestation in human beings including the larvae form of pork tapeworm in the brain.

CHALLENGES OF OPTIONS AND INTEGRATION OF EXISTING OPPORTUNITIES

The current diagnosis of neurocysticercosis is a challenge and proper treatment of those diagnosed cases is complicated. World Health Organization (WHO) released a guideline recently (2021) "WHO guidelines for control and management of neurocysticercosis". This is an opportunity and needs to be adapted, but some essential ground challenges must be addressed and dealt with for effective implementation of the adapted guideline. Challenges have been categorized into issues around the diagnosis and treatment. These have been subdivided into specific appropriate areas (Table 1).

Table 1: Adaptation of the WHO neurocysticercosis guideline and strategies for implementation

No	WHO guideline target	Specific areas	Country situation
1	Diagnosis	Clinical	Clinicians cannot suspect the disease, hence cannot order laboratory investigations
		Laboratory	The inability of the Laboratory to perform the diagnostic tests (lack of equipment and supplies for testing NCC), lack of rapid and sensitive diagnostic tools
		Neuroimaging (Computed tomography (CT) scan & magnetic resonance imaging (MRI))	A confirmatory test for NCC is neuroimaging; this is limited i.e., is expensive, not easily available with very few experts who can interpret the results
2	Treatment	Anthelmintic (Albendazole and/or Praziquantel)	Present drugs & are cheaper but clinicians are unaware of the regime, dosage, duration, and adverse events

POLICY RECOMMENDED OPTIONS

We recommend for a core team be formed by the Ministry of Health to review and adapt the WHO guidelines and produce a customized country-specific operational document (guidelines) that will incorporate strategies to address the challenges outlined in this policy brief. The team may consist of stakeholders including the government (especially The Ministry of Health), private partners, and implementation partners. Experts working in health facilities starting from the level of health centers in areas of clinical practice especially clinicians, laboratory scientists, and radiologists should be given priority. Our recommendations are focused on diagnosis and treatment and prevention; clinical, laboratory, radiology (radio-imaging), and medication. Launching an educational campaign on epilepsy caused by pork tapeworms

It is critical to raise awareness about pork tapeworm-induced epilepsy in order for reduction of stigma and promotion of prompt case-reporting. Campaigns to promote education can help to disseminate knowledge on how the condition develops, its signs and symptoms and prevention methods. These initiatives can also help in dispel myths and misconceptions about tapeworm-related conditions and epilepsy. The success of such programs can also be further supported by collaborations with healthcare providers and community participation.

Reduction of conditions related to pork- tapeworm can be achieved by the implementation of a Water, Sanitation, and Hygiene (WASH) program. Such a program can include initiatives to improve access to clean water, promote proper hygiene practices, and ensure effective sanitation measures within communities. By preventing the contaminating of food and water sources with tapeworm eggs, these measures can help lower the overall risk of infection. Furthermore, including health education and awareness initiatives within the WASH program can accentuate the significance of adequate sanitation and hygiene practices in averting diseases linked to pig tapeworms.

DIAGNOSIS

This will be subcategorized into clinical, laboratory, and

radiology (radioimaging)

a. Clinical practice

Orientation training and re-training should be targeted to clinical practitioners building their capacity in the diagnosis and treatment of human neurocysticercosis (involvement of larvae form of pork tapeworm in the human brain). This will aim to raise their suspicion index on the existence of the problem as well as enable them to perform a proper diagnosis of the disease., hence a step toward improved management.

Key actors

This responsibility should be given to the Ministry of Health which will build a capacity for trainers who will train the trainees to begin with and this will cascade for sustainable effects.

b. Laboratory

Health facilities of different levels should be equipped with laboratory facilities including machinery, Rapid test kits, and when possible, Polymerase Chain Reaction (PCR) diagnostics which can be a valuable tool for detecting pork tapeworm infections. Supply of consumables to support the performed tests should be constant to maintain the sustainability of the services provided. Laboratory staff should also be trained and re-trained to give them the capacity to perform diagnostic tests through the implemented diagnostic facilities.

Key actors

Stakeholders through the Ministry of Health should advise the government to assign a budget for equipping health facilities with diagnostic facilities starting from the level of health centers, district hospitals, and above. The Ministry of Health will be responsible for composing a team of laboratory experts in diagnostics which will build the capacity of other laboratory staff on the performance of diagnostic tests.

Neuroimaging

(Computed tomography scan and magnetic resonance imaging)

Radiological devices i.e., computed tomography (CT scan) and magnetic resonance imaging (MRI); which are key confirmatory tests for pork tapeworm affecting the brain should be provided starting with health centers, then district hospitals and above. More experts in this area are needed and should be trained to build their capacity for interpretation of the results to guide appropriate treatment.

Key actors

Ministry of Health to form a team of experts in neuroimaging which will be responsible for the training of more experts in the interpretation of the neuroimaging results

1. TREATMENT

Treatment of larvae form of pork tapeworm involves old and known drugs which are albendazole and praziquantel.

Treatment regimen

Treatment of larvae form of pork tapeworm in the brain involves albendazole or praziquantel or a combination of both. Steroids need to be administered before antihelminth, should continue at the whole course of ten to eleven days of antihelminth, and later on, should be tapered. Those patients who presented with epilepsy should be started on antiepileptics (AEDs) or those who were on AEDs should not stop.

Key Actors

This responsibility should be given to the Ministry of Health which will build a capacity on the new treatment regimen for trainers who will train the trainees to begin with and this will

cascade for sustainable effects. Ministry of health and other stakeholders should also encourage and when possible, facilitate for further studies on the efficacy of the treatment drugs.

ACKNOWLEDGEMENT

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Utambuzi na Matibabu ya Mabuu ya Minyoo Tegu ya Nguruwe katika Ubongo wa Binadamu Nchini Tanzania

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TAARIFA MHUMU

- » Mabuu ya kwenye ubongo yasababishwayo na minyoo tegu ya nguruwe huathiri zaidi ya watu milioni 50 duniani na husababisha vifo vya watu takribani 50,000 kila mwaka. Nchini Tanzania, watu wapatao 17 kati ya 100 wameripotiwa kuambukizwa na mabuu ya minyoo tegu ya nguruwe huku watu 2 hadi 5 kati ya 100 wameambukizwa na minyoo tegu waliokomaa (mikubwa/mama) ipatikanayo tumboni.
- » Ugunduzi wa mabuu ya minyoo tegu ya nguruwe katika ubongo ni ghali na mgumu na hujumuisha mwongozo maalumu wa kitaalamu ujulikanao kama Del Brutto criteria; na pia tiba kwa waliogunduliwa kuwa na tatizo huwa ni ngumu na huhitaji jopo la wataalmu wa ngazi za juu pamoja na ufuatiliaji wa karibu.
- » Kuboresha utambuzi, matibabu, kinga na udhibiti wa maambukizo ya minyoo tegu ya nguruwe (*Taenia solium*) kuna uwezo wa kupunguza maradhi na vifo vinavyosababishwa na mabuu ya minyoo tegu ya nguruwe kwenye ubongo wa binadamu (neurocysticercosis, NCC) nchini Tanzania.
- » Kuvijengeza uwezo vituo vya kutolea huduma ya afya kwa kuvipa mbinu za uchunguzi na kutoa mafunzo kwa wahudumu wa afya kutaboresha matibabu ya mabuu ya minyoo tegu ya nguruwe kwenye ubongo wa binadamu

TAARIFA ZA CHIMBUKO LA TATIZO

Taenia solium, ni jina la kisayansi la minyoo tegu ya nguruwe, ni chanzo cha ugonjwa wa kitropiki uliopo uuzwa unaojulikana kama cysticercosis/taeniosis (1). Minyoo tegu ya nguruwe ni kimelea muhimu kinachosambazwa kati ya binadamu na nguruwe. Kuwepo kwa mabuu ya minyoo tegu ya nguruwe katika ubongo na uti wa mgongo hujulikana kama neurocysticercosis (NCC) (2).

Minyoo tegu ya nguruwe (*Taenia solium*) ina aina ya minyoo mkubwa uliokomaa na aina ya viwavi/mabuu.

Ulimwenguni, NCC inachangia kwa takriban visa 3 kati ya 10 vinavyopatikana, vinavyoweza kuepukika vya kifafa katika maeneo yenye ugonjwa mkubwa [3]. Nchini Tanzania, kwa wingi kifafa hutokana na mabuu ya minyoo tegu; takriban visa 18,000 na vifo 212 huripotwa kila mwaka [4].

Minyoo tegu mikubwa ya nguruwe iliyokomaa hupatikana kwenye utumbo mwembamba wa binadamu (husababisha taeniosis), na katika maeneo ya Tanzania, takriban asilimia 2 hadi 5 ya wanadamu wameambukizwa na minyoo waliokomaa [1]. Aina ya mabuu ya minyoo tegu ya nguruwe yanapopatikana katika viungo vingine hujulikana kama (cysticercosis); na zaidi ya asilimia 16 ya wanadamu katika maeneo yaliyoadhirika ya Tanzania wameambukizwa na aina ya mabuu [1]. Kuwepo kwa cysticercosis katika ubongo na uti wa mgongo inajulikana kama neurocysticercosis (NCC) [2].

Utambuzi na matibabu ya mabuu yatokanayo na maambukizi ya minyoo tegu ya nguruwe katika ubongo ni ngumu (5). Mbali na haja ya wataalamu wenye uzoefu wa kutosha, utambuzi wa ugonjwa huu unahusisha vipimo vya gharama kubwa (vipimo vya damu vipimo vya kisasa kama vijukanavyo kama Computed tomography (CT) scan na Magnetic resonance imaging (MRI) (5, 6). Kutokana na changamoto hizi, maambukizi ya minyoo tegu

ya nguruwe kwa binadamu mara nyingi huwa hayagunduliwi

Utambuzi wa kifafa ambao ni hatua ya pili kwa NCC ni ghali (kwa mfano, gharama za CT scan ni Zaidi ya > 200,000/- TZs na kipimo cha *T. solium* serology kinagharimu zaidi ya 100,000/- TZs). Kwa bahati mbaya, watu wengi wenye kifafa kwa kawaida hutoka katika familia maskini sana.

Makadirio ya chanzo cha ukubwa wa tatizo la kifafa yanatokana na tafiti ndogo za jamii zilizofanywa katika maeneo machache ya Tanzania [5]. Kifafa ni mojawapo ya dalili kuu za NCC na kwa kawaida hairipotwi sana kutokana na ukweli kwamba ina hali ya yananyapaa, lakini desturi ya watu wengi ya kutafuta ushauri na matibabu kutoka kwa wataalam wa tiba asilia pia inachangia kuripotiwa kwa kiwango cha chini hasa katika mazingira yetu ya Kitanzania [6]. Kwa hivyo, kuna uwezekano mkubwa kwamba kiwango cha maambukizi kilichoripotiwa hakiripotiwi sana na hivyo basi kinaweza kuwa hakiwakilishi ukweli. Muhtasari huu wa kisera unapendekeza kuanzishwa kwa utambuzi na udhibiti bora na matibabu minyoo tegu ya nguruwe kwa wanadamu pamoja na aina ya mabuu ya minyoo tegu ya nguruwe kwenye ubongo.

CHANGAMOTO ZA CHAGUZI ZA SERA NA FURSA ZILIZOPO

Utambuzi wa sasa wa ugonjwa wa neurocysticercosis ni changamoto na matibabu sahihi ya visa vilizogunduliwa ni mgumu. Shirika la Afya Duniani (WHO) lilitoa mwongozo hivi karibuni mwaka 2021 “Miongozo ya WHO wa udhibiti na matibabu ya neurocysticercosis”. Hii ni fursa na unahitaji kuhisha, lakini baadhi ya changamoto za msingi lazima zishughulikiwe kwa ajili ya utekelezaji mzuri wa mwongozo uliohuishwa kwa matumizi. Changamoto zimeainishwa katika masuala yanayohusu utambuzi na matibabu. Hizi zimegawanywa katika maeneo maalum yanayofaa kama yalivyo ainishwa katika (Jedwali namba 1).

Jedwali 1: Uhuishaji wa mwongozo wa WHO wa neurocysticercosis na mikakati ya utekelezaji

Na.	Lengo la mwongozo wa WHO	Maeneo Malaam	Hali ya Nchi
1	Uchunguzi	Dalili za Ugonjwa	Madaktari hawawezi kushuku ugonjwa huo, kwa hivyo hawawezi kuagiza uchunguzi wa maabara
		Maabara	Kutoweza kwa Maabara kufanya uchunguzi (wafanyikazi wa maabara hawana mafunzo ya kutosha na ukosefu wa vifaa/vitendea kazi)
		Uchanganuzi wa Kiradiolojia (CT scan na MRI)	Uchunguzi wa kuthibitisha kwa NCC kuwa ni neuroimaging; hii ni uwezekano wa kuwepo ni mdogo yaani, ni ghali, haipatikani kwa urahisi na wataalam wachache sana ambao wanaweza kutafsiri matokeo ya kipimo hiki
2	Matibabu	Antihelminth (Albendazole and/or Praziquantel)	Dawa zilizopo na ni nafuu lakini matabibu hawajui utaratibu, kipimo, muda na madhara mabaya yatokanayo na dawa.

MAONI YA MAPENDEKEZO KISERA

Tunapendekeza timu mahususi iundwe na Wizara ya Afya ili kuupitia na kuhisha miongozo ya WHO na kutoa waraka (miongozo) uliohuishwa mahususi kwa nchi ambao utajumuisha mikakati ya kushughulikia changamoto zilizoainishwa katika

muhtasari huu wa sera. Timu inaweza kuwa na wadau mabalimabli ikiwa ni pamoja na serikali (hasa Wizara ya Afya), washirika kutoka sekta ya watu binafsi, na washirika wa maendeleo wa Kimataifa. Wataalam wanaofanya kazi katika vituo vya kutolea huduma ya afya kuanzia ngazi ya vituo vya afya wanaohusika

na utoaji wa matibabu hasa matabibu, wanasayansi wa maabara, na wataalamu wa radiolojia wanapaswa kupewa kipaumbele. Mapendekezo yetu yanalenga uchunguzi na matibabu na kuzuia; utambuzi wa dalili, maabara, radiolojia (radio-imaging), na utoaji dawa.

Kuanzisha kampeni za elimu kuhusu kifafa kinachosababishwa na minyoo tegu ya nguruwe ni muhimu kwa ajili ya kuongeza uelewa kuhusu kifafa kinachosababishwa na minyoo tegu ya nguruwe ili kupunguza unyanyapaa na kuhamasisha uibuaji wa waathirika wa tatizo kwa haraka na kwa wingi. Kampeni za kuhamasisha elimu zinaweza kusaidia katika kusambaza uelewa kuhusu jinsi hali hiyo inavyojitokeza, dalili zake na njia za kuzuia. Juhudi hizi pia zinaweza kusaidia katika kuondoa dhana potofu na fikra zisizo sahihi kuhusu hali zinazohusiana na minyoo tegu ya nguruwe na kifafa. Mafanikio ya programu kama hizo yanaweza pia kuungwa mkono zaidi kupitia ushirikiano na watoa huduma za afya na ushiriki wa jamii.

Kupunguza matatizo yanayohusiana na minyoo tegu ya nguruwe kunaweza kupatikana kupitia utekelezaji wa mpango wa “WASH” (Water-Maji, Sanitataion-Usafi, na Hygiene-Usafi wa Mazingira). Mpango kama huu unaweza kujumuisha juhudi za kuboresha upatikanaji wa maji safi, kukuza mazoea sahihi ya usafi, na kuhakikisha hatua za usafi zinafanywa kwa ufanisi ndani ya jamii. Kwa kuzuia uchafuzi wa chakula na vyanzo vya maji dhidi ya mayai ya minyoo tegu ya nguruwe, hatua hizi zinaweza kusaidia kupunguza hatari ya maambukizi kwa ujumla. Zaidi ya hayo, kujumuisha elimu ya afya na juhudi za kuongeza uelewa ndani ya mpango wa WASH kunaweza kutilia mkazo umuhimu wa usafi na mazoea sahihi ya usafi katika kuzuia magonjwa yanayohusiana na minyoo tegu ya nguruwe.

1. UTAMBUZI

Hii itaainishwa katika utambuzi wa dalili, maabara, na radiolojia

a). Utambuzi wa ugonjwa kupitia dalili

Mafunzo ya maelekezo na mafunzo ya kujikumbusha yanapaswa kulengwa kwa watoa huduma (matabibu) na kuwajengea uwezo wao katika utambuzi na matibabu ya neurocysticercosis ya binadamu (kuingia kwa mabuu ya minyoo tegu ya nguruwe katika ubongo wa binadamu). Hii italenga kuongeza ufahamu wao juu ya uwepo wa tatizo na pia kuwawezesha kufanya uchunguzi sahihi wa ugonjwa huo. Hii itawezesha utambuzi sahihi wa ugonjwa huo, kwa hivyo hii ni hatua nzuri kuelekea kupatikana kwa matibabu bora.

● Wahusika Wakuu

Jukumu hili lipewe Wizara ya Afya ambayo itawajengea uwezo wakufunzi watakaofundisha washiriki kwa kuanzia na washiriki watafundisha mafunzo haya kwa wengine ambapo kutakuwa mwendelezo endelevu.

b). Maabara

Vituo vya kutolea huduma ya afya katika ngazi mabalibali

vinapaswa kuwa na vifaa vya maabara ikiwa ni pamoja na mashine, vifaa tiba, na vitendanishi vinavyoweza kufanya vipimo vya uchunguzi kwa ajili ya vipimo vya serological kutambua uwepo wa minyoo tegu aina ya *Taenia solium*. na pale inapowezekana, teknolojia mpya ya kiambuzi ijulikanayo kama “Polymerase Chain Reaction” (PCR) ambayo inaweza kuwa chombo muhimu cha kugundua maambukizi ya minyoo tegu ya nguruwe. Ugavi wa vifaa vinavyotumiwa kusaidia vipimo vinavyofanyika unapaswa kuwa endelevu ili kudumisha uendelevu wa huduma zilizotolewa. Wafanyakazi wa maabara pia wanapaswa kupatiwa mafunzo na kupatiwa mafunzo mapya kila inapobidi ili kuwapa uwezo wa kutekeleza vipimo vya utambuzi kupitia vituo husika vya utambuzi.

● Wahusika Wakuu

Wadau kupitia Wizara ya Afya waishauri serikali kutenga bajeti kwa ajili ya kuvipatia vituo vya afya vifaa vya uchunguzi kuanzia ngazi ya vituo vya afya, hospitali za wilaya na kuendelea. Wizara ya Afya itakuwa na jukumu la kuunda timu ya wataalam wa maabara katika uchunguzi ambao watajengea uwezo watumishi wengine wa maabara juu ya utumiaji wa vipimo vya uchunguzi.

a) Uchunguzi wa Kiradiolojia (Matumizi ya CT scan na MRI)

Vifaa vya radiolojia yaani, CT scan na MRI; ambavyo ni vipimo muhimu vya uthibitisho wa minyoo tegu ya nguruwe inayoathiri ubongo inapaswa kutolewa kuanzia vituo vya afya, kisha hospitali za wilaya na kuendelea. Wataalam zaidi wanahitajika katika eneo hili na wanatakiwa kujengewa uwezo wa kutafsiri matokeo ya picha za CT scan na MRI ili kuwezesha kutolewa matibabu sahihi.

● Wahusika Wakuu

Wizara ya Afya kuunda timu ya wataalam wa radiolojia (neuroimaging) ambayo itakuwa na jukumu la kutoa mafunzo kwa wataalam zaidi katika kutafsiri matokeo ya picha za kiradiolojia (neuroimaging).

1. MATIBABU

Matibabu kwa aina ya mabuu ya minyoo tegu ya nguruwe huhusisha kutumia dawa za zamani na zinazojulikana ambazo ni albendazole na praziquantel.

Utaratibu wa Matibabu

Matibabu ya aina ya mabuu ya minyoo tegu ya nguruwe kwenye ubongo huhusisha kutumia dawa aina ya albendazole au praziquantel au mchanganyiko wa zote mbili. Dawa aina ya Steroids zinahitaji kumezwa kabla ya dawa za minyoo, na zinapaswa kuendelea kunyewa kwa muda wote wa siku kumi hadi kumi na moja za matumizi ya dawa za minyoo, na baadaye, zinapaswa kupunguzwa. Wale wagonjwa ambao wanaletwa kwa matibabu wakiwa na kifafa wanapaswa kuanza kutumia dawa za kifafa (AEDs) au wale ambao walikuwa kwenye AED hawapaswi kuacha.

● Wahusika Wakuu

Jukumu hili lipewe Wizara ya Afya ambayo itawajengea uwezo

wakufunzi watakaofundisha washiriki kuhusiana na mpango mpya wa matibabu ya matatizo yatokanayo na minyoo tegu ya nguruwe kwa kuanzia; na washiriki watafundisha mafunzo haya kwa wengine ambapo kutakuwa mwendelezo endelevu.

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REFERENCES

1. Nyangi C, Stelzle D, Mkupasi EM, Ngowi HA, Churi AJ, Schmidt V, et al. Knowledge, attitudes and practices related to *Taenia solium* cysticercosis and taeniasis in Tanzania. BMC Infect Dis. 2022;22(1):534.
2. Gonzales I, Rivera JT, Garcia HH. Pathogenesis of *Taenia solium* taeniasis and cysticercosis. Parasite Immunol. 2016;38(3):136-46.
3. Owolabi LF, Adamu B, Jibo AM, Owolabi SD, Isa AI, Alhaji ID, et al. Prevalence of active epilepsy, lifetime epilepsy prevalence, and burden of epilepsy in Sub-Saharan Africa from meta-analysis of door-to-door population-based surveys. Epilepsy Behav. 2020;103(Pt A):106846.
4. Winkler AS. Neurocysticercosis in sub-Saharan Africa: a review of prevalence, clinical characteristics, diagnosis, and management. Pathog Glob Health. 2012;106(5):261-74.
5. Nash TE, Garcia HH. Diagnosis and treatment of neurocysticercosis. Nat Rev Neurol. 2011;7(10):584-94.
6. Rajshekhar V. Neurocysticercosis: Diagnostic problems & current therapeutic strategies. Indian J Med Res. 2016;144(3):319-26.
7. Kayuni EN. Socio-economic and health costs of porcine/human cysticercosis, neurocysticercosis and epilepsy to small-scale pig producers in Tanzania. Bull Natl Res Cent. 2021;45(1):217.
8. Herrick JA, Bustos JA, Clapham P, Garcia HH, Loeb JA. Unique Characteristics of Epilepsy Development in Neurocysticercosis. Am J Trop Med Hyg. 2020;103(2):639-45.

Better Health with Tuberculosis Preventive Treatment (TPT): Using Community Health Workers (CHWs) to Improve TPT Uptake among People Living with HIV (PLHIV)

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KEY MESSAGES

- » In 2019, TB accounted for an estimated 30% of the 690,000 AIDS-related deaths in the world.
- » TPT reduces the risk of developing TB by about 60% and prolongs survival.
- » In Tanzania, the overall uptake of TPT among PLWHIV is 17 percent, below the target set by the Global End TB strategy, which is to achieve > 90% by 2030.
- » In 2018, Tanzania reports showed that there were 16,000 deaths among HIV-positive patients co-infected with TB.
- » The use of Community Health Workers (CHWs) is a recommended policy option as it is the most cost-effective for TPT, and it will increase the number of PLWHIV uptake. The option is likely to increase to 1,521,056 PLWHIV at an increased cost of less than USD 0.85 compared to the current practice.

PROBLEM STATEMENT

Tuberculosis (TB) remains the leading cause of death among people living with HIV (PLWHIV). In 2019, TB accounted for an estimated 30% of the 690,000 AIDS-related deaths in the world. These 208,000 deaths represented approximately 15% of the 1.4 million TB deaths every year [1]. TB is caused by a bacterium called *Mycobacterium tuberculosis*. In 2018, Tanzania reports showed that there were 16,000 deaths among HIV-positive patients co-infected with TB [2]. TB can cause long-lasting (permanent) lung damage and infection of the bones, spine, brain and spinal cord, lymph glands, and other parts of the body. The primary cause of TB is bacteria that spread from person to person through microscopic droplets released into the air. This can happen when someone with untreated, active tuberculosis coughs, speaks, sneezes, spits, laughs, or sings [1]. On the other hand, evidence has shown that in PLWHIV, Tuberculosis Preventive Therapy (TPT) reduces the risk of developing TB by about 60% and prolongs survival [3].

Tanzania is one of the highest TB burden countries, and it is estimated that of 154,000 new cases of TB in 2017, 31% (48,000) were also HIV positive [4,5]. From 2012 to 2016, three regions of Dar es Salaam, Njombe and Iringa, had 32,986 TB cases [6]. The data has indicated that PLWHIV contributes significantly to the high incidence of TB, which might be attributed to low uptake of TPT and a high rate of defaulters.

This policy brief, therefore, focuses on the low uptake of TPT in three regions, namely Dar es Salaam, Iringa, and Njombe, as they have consistently recorded the highest number of TB cases in the country. Sabasaba et al. [7] depicted that the uptake of TPT has been relatively low in most developing countries, including Tanzania, of which 3,124 were diagnosed and 279 evidenced

completions of TPT. Evidence has shown that the consequences of underutilizing TPT lead to increased TB incidence, TB death, as well as increased community transmission, fueling the TB epidemic [7].

Amongst the root causes that have led to low uptake of TPT in Tanzania are distance to the health care facility, pill burden, and community unawareness [8,9].

It should be noted that from 2011 to 2017, the three regions, Dar es Salaam, Njombe, and Iringa, recorded a high incidence rate of TB among PLWHIV. Out of approximately 2 million people eligible for TPT, only around 16% (31,800) were provided with TPT. This shows that TPT uptake remains a challenge in Tanzania, as shown in the figure below [7,8,9].

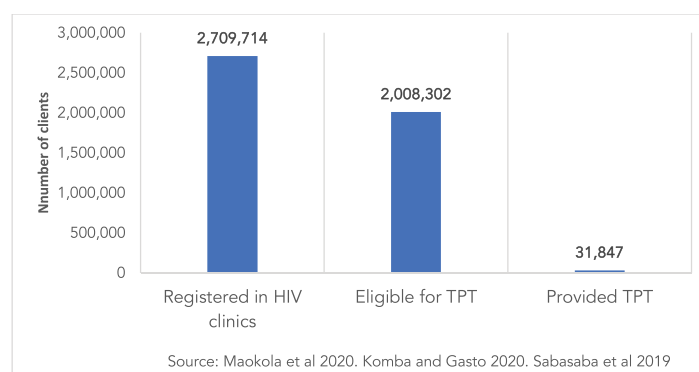


Figure 1: PLWHIV and uptake of TPT in Dar es Salaam, Iringa, and Njombe Regions, 2011-2017

POLICY OPTIONS

To reduce the TB incidence rate among PLWHIV, increasing

TPT uptake among them is needed. So, to address the root cause of community unawareness, policy options, including a Mobile message alert about TPT uptake and the use of Community Health Workers (CHWs) to administer TPT, have to be used.

1. Mobile Message Alert about TPT Uptake

What: To administer TPT uptake, the government must consider using mobile texts as a reminder for TPT uptake. This will be simple because the appropriate individuals will receive the reminder directly on their mobile phones, which will increase awareness of TPT and its significance.

Why: TPT uptake among PLWHIV is still low, which can boost awareness of TPT and its uptake. For instance, using mobile messaging alerts as a reminder for the Tanzania Census of 2022 was successful, as it helped to raise awareness of the census among Tanzanians.

Feasibility: Low since it has additional cost implications for administering push messages to remind patients for TPT uptake.

2. Use of Community Health Workers (CHWs) to Administer TPT

What: Using Community Health Workers (CHWs) to administer TPT will help since CHWs can reach more than those who decide to attend the hospital. The CHWs can also provide education on TPT to people unaware of TPT and its importance, increasing the coverage of TPT uptake in the country.

Why: CHWs will increase TPT uptake by creating more awareness in society. The Ministry is already working to generate 153,000 CHWs, who will be employed for community-level health promotion and advocacy. This will speed up the overall implementation of this program.

Feasibility: High, since we have experience using CHWs on other health programs like Malaria, HIV testing etc.

Table 1: Cost-effectiveness (CE) and Incremental cost-effectiveness (ICER) of proposed interventions

Policy Options	TB cases/Population	Expected Cost (\$)	TB Cases Averted	Incremental Cost (\$)	ICER (Ratio)
Status Quo	1,003,057	4,531,049	-	-	-
Mobile Message Alert	501,528	4,983,401	501,529	452,352	0.93
Use of CHWs	517,999	5,015,283	485,058	484,234	0.85

Table 2: Feasibility Determination

	Mobile messages alert	Use of Community Health Workers (CHWs)
Political feasibility*		
Operational feasibility		

Key: Highly feasible Somewhat feasible

*Feasibility determined by standardized policy review, stakeholder interviews, and budgetary analysis led by the Ministry of Health.

EVALUATION AND RECOMMENDATION

Based on Table 1, the most cost-effective option is the use of CHWs to influence TPT uptake. This is because, by using this option, more people will be covered, approximately 517,999 and less cost estimated to be \$5,015,283 which its ICER is 0.85 less than the other option which has 0.93. Using CHWs to administer TPT to PLWHIV was determined to be extremely practical. Based on Table 2, mobile message alert has low feasibility while the use of CHWs has high political and operational feasibility.

This is because the implementation cost is low. For this reason, we recommend the adoption of the use of CHWs. The adoption of CHWs will broaden public knowledge, encourage TPT uptake among patients, and lessen the problem of TB transmission.

NEXT STEPS

To guarantee that CHWs are trained and acknowledged across the country, the MoH will review the policy choices and build the budget in partnership with other stakeholders. The

National TB and Leprosy Program will also be informed of the policy brief findings to persuade them to think about integrating TPT management and administration in the CHWs' orientation materials. Likely enough, MOH's Health Promotion Section is currently in the process of recruiting and training 153,875 CHWs, who will deliver integrated health and social welfare services at the grassroots level. TPT uptake administration will therefore be carried out by CHWs in a mutually inclusive manner.

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Afya Bora Pamoja na Tiba ya Dawa Kinga ya Kifua Kikuu (TPT): Kutumia Wahudumu wa Afya ya Jamii (CHWs) Kuboresha Matumizi ya TPT Miongoni mwa Watu Wanaoishi na VVU (WAVIU)

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UJUMBE MUHIMU

- » Katika mwaka 2019, Kifua kikuu kilichangia wastani wa asilimia 30 ya vifo 690,000 vinavyohusiana na UKIMWI duniani.
- » Matumizi ya Dawa Tiba za Kifua Kikuu (TPT) inapunguza hatari ya kupata TB kwa takriban asilimia 60 na kuongeza muda wa kuishi.
- » Nchini Tanzania, jumla ya matumizi ya TPT miongoni mwa Watu Wanaoishi na Virusi Vya UKIMWI, (WAVIU) ni asilimia 17, ambayo ni chini ya lengo lililowekwa na mkakati wa Global End TB ambao ni kufikia zaidi ya asilimia > 90 ifikapo mwaka 2030.
- » Mwaka 2018, ripoti za Tanzania zilionesha kuwa kulikuwa na vifo 16,000 kati ya wagonjwa wenye VVU walioambukizwa TB pamoja.
- » Matumizi ya Wafanyakazi wa Afya ngazi ya Jamii (CHWs) ndilo chaguo la kisera linalopendekezwa kwa kuwa lina gharama nafuu zaidi kwa matumizi ya TPT kwa kufikia watu wengi kiasi cha WAVIU 1,521,056 kwa mwaka kwa kuwa ina ongezeko la gharama kidogo kiasi cha UDS 0.85 kwa kila mgonjwa WAVIU anayefikiwa ikilinganishwa na utaratibu wa sasa.

TAARIFA ZA CHIMBUKO LA TATIZO

Kifua kikuu kinaendelea kuwa chanzo kikuu cha vifo miongoni mwa watu wanaoishi na VVU (WAVIU). Mwaka 2019, Kifua kikuu kilichangia wastani wa asilimia 30 ya vifo 690,000 vinavyohusiana na UKIMWI duniani. Vifo hivi 208,000 ni takriban sawa na asilimia 15 ya vifo milioni 1.4 vya TB kila mwaka [1]. Kifua kikuu (TB) husababishwa na bakteria aitwaye Mycobacterium tuberculosis. Mwaka 2018, ripoti za Tanzania zilionesha kuwa kulikuwa na vifo 16,000 kati ya wagonjwa wenye VVU walioambukizwa TB [2]. TB inaweza kusababisha uharibifu wa muda mrefu (wa kudumu) wa mapafu,

na maambukizi ya mifupa, uti wa mgongo, ubongo, tezi, na sehemu nyingine za mwili. Chanzo kikuu cha TB ni bakteria ambaye huenea kutoka kwa mtu hadi mtu kupitia matone madogo madogo sana yanayotolewa hewani. Hii inaweza kutokea wakati mtu ambaye hajatibiwa, mwenye ugonjwa wa kifua kikuu anakohoa, kuzungumza, kupiga chafya, kutema mate, kucheka au kuimba [1]. Kwa upande mwingine, ushahidi umeonyesha kuwa kwa WAVIU, TPT inapunguza hatari ya kupata Kifua kikuu kwa takriban asilimia 60 na kuongeza muda wa kuishi [3].

Tanzania ni miongoni mwa nchi zenye tatizo kubwa la Kifua

kikuu (TB), inakadiriwa kuwa kati ya wagonjwa wapya 154,000 wa TB mwaka 2017, asilimia 31 (48,000) pia walikuwa na VVU [4,5]. Katika kipindi cha mwaka 2012 hadi 2016 mikoa mitatu ya Dar es Salaam, Njombe na Iringa ilikuwa na wagonjwa 32,986 wa TB [6]. Takwimu zinaonyesha kuwa WAVIU wanachangia kwa kiasi kikubwa visa vipya vya TB, ambapo idadi kubwa ya visa hivi inawezekana vinachangiwa kutokana na utumiaji mdogo wa TPT na kiwango kikubwa cha wagonjwa wanaokiuka utaratibu wa matibabu ya TB.

Muhtasari huu wa kisera unaangazia utumiaji mdogo wa TPT katika mikoa mitatu ambayo ni Dar es Salaam, Iringa na Njombe kwani mara kwa mara imekuwa na idadi kubwa ya wagonjwa wa TB nchini. Katika utafiti wa Sabasaba na wenzake (2019) [7] ulionyesha kuwa utumiaji wa TPT umekuwa mdogo katika nchi nyingi zinazoendelea ikiwamo Tanzania, ambapo kati ya wagonjwa 3,124 waligunduliwa, 279 walithibitisha kukamilisha dozi ya TPT. Ushahidi umeonyesha kuwa matokeo ya matumizi duni ya TPT husababisha kuongezeka kwa visa vya TB, vifo vitokanavyo na ugonjwa wa TB pamoja na kuongezeka kwa maambukizi kwa jamii yanayochochea janga la TB [7].

Miongoni mwa sababu kuu zilizosababisha utumiaji mdogo wa TPT nchini Tanzania ni umbali wa vituo vya kutolea huduma ya afya, uwingi wa tembe za dawa, na jamii kutofahamu TPT [8,9].

Ifahamike kwamba kuanzia mwaka 2011 hadi 2017, mikoa mitatu ya Dar es Salaam, Njombe na Iringa ilirekodi kiwango kikubwa cha visa vya TB miongoni mwa WAVIU. Kati ya takriban watu milioni 2 wanaostahiki TPT, ni karibu asilimia 16 (31,800) tuu walipewa TPT. Hii inaonyesha kuwa matumizi ya TPT bado ni changamoto nchini Tanzania kama inavyoonyeshwa kwenye kielelezo namba 1 hapa chini [7,8,9].

MAONI KISERA

Ili kupunguza kiwango cha visa vipya vya TB miongoni mwa WAVIU kuongeza kwa matumizi ya TPT miongoni mwao kunahitajika. Kwa hivyo, ili kushughulikia chanzo kikuu cha kutofahamu kwa jamii juu ya TPT, chaguzi za sera ikiwa ni pamoja na ujumbe wa taarifa kupitia Simu ya Kiganjani kuhusu matumizi ya TPT na Matumizi ya Wafanyakazi wa Afya ngazi ya Jamii (CHWs) kusimamia utoaji wa TPT inabidi zitumike.

1. Taarifa ya Ujumbe wa Simu ya Kiganjani Kuhusu Matumizi ya TPT

Ni Nini: Ili kuongeza utumiaji wa TPT, serikali lazima izingatie kutumia njia ya ujumbe wa maneno kwa simu ya kiganjani kwa kuweka kumbukumbu juu ya matumizi ya TPT. Hii itakuwa rahisi kwa sababu watu wanaostahili watapokea ujumbe wa kukumbushia moja kwa moja kwenye simu zao za kiganjani, ambayo itaongeza ufahamu wa TPT na umuhimu wake.

Kwa nini: Uwepo wa matumizi ya TPT miongoni mwa WAVIU bado ni mdogo hivyo hii inaweza kuongeza uelewa wa matumizi ya TPT. Kwa mfano, matumizi ya taarifa za ujumbe wa simu ya kiganjani kama ukumbusho wakati wa Sensa ya Tanzania ya 2022 ilifanikiwa kwa kuwa ilisaidia kuongeza uelewa wa sensa miongoni mwa Watanzania.

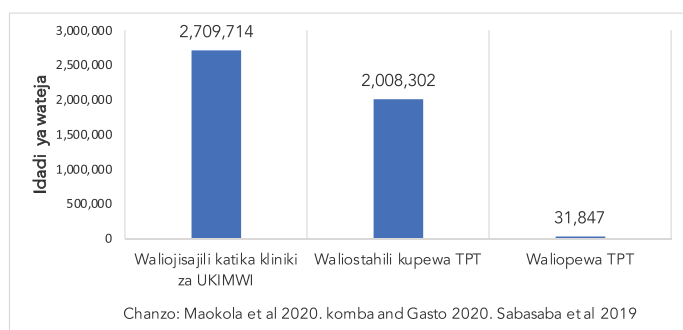
Uwezekano: Wa chini: Hii inatokana na gharama zaidi za kusambaza na kusimamia ujumbe ili kumkumbusha mgonjwa juu ya matumizi ya TPT.

2. Matumizi ya Wahudumu wa Afya Ngazi ya Jamii (CHWs) Kusimamia TPT

Ni nini: Matumizi ya Wahudumu wa Afya ngazi ya Jamii (CHWs) kusimamia TPT yatasaidia kwa kuwa CHWs wanaweza kufikia watu wengi zaidi kuliko watu wenyewe kuamua kuhudhuria hospitali kwa ajili ya TPT. CHWs pia wanaweza kutoa elimu ya TPT kwa watu ambao hawajui TPT na umuhimu wake, kwa hivyo hii itaongeza kufikiwa kwa watu wengi watakoa tumia TPT nchini.

Kwa nini: Matumizi ya Wahudumu wa Afya ngazi ya Jamii (CHWs) yataleta ufahamu zaidi wa TPT kwa jamii, na ufahamu huo utaongeza utumiaji wa TPT. Hivi sasa Wizara inafanya kazi ya kuzalisha Wahudumu wa Afya ngazi ya Jamii (CHWs) 153,000, ambao wataajiriwa kwa ajili ya kukuza maswala ya afya ngazi ya jamii. Hii itarahisisha na kuharakisha ufanisi wa utekelezaji wa jumla wa programu hii.

Uwezekano: Wa Juu: Hii inatoka kuwa na uzoefu wa kutumia CHWs kwenye programu nyingine za afya kama vile Malaria, kupima VVU n.k



Kielelezo Na. 1: Watu wanaoishi na VVU (WAVIU) na matumizi ya TPT katika Mikoa ya Dar-es-Salaam, Iringa na Njombe, 2011 -2017

Jedwali Na. 1: Cost effectiveness (CE) and Incremental cost-effectiveness (ICER) of proposed interventions

	TB cases/Population	Expected Cost (\$)	TB Cases Averted	Incremental Cost (\$)	ICER (Ratio)
Status Quo	1,003,057	4,531,049	-	-	-
Mobile Message Alert	501,528	4,983,401	501,529	452,352	0.93
Use of CHWs	517,999	5,015,283	485,058	484,234	0.85

Jedwali Na. 2: Uamuzi Yakinifu

	Ujumbe wa Simu ya Kiganjani	Use Wahudu wa Afya ya Jamii (CHWs)
Uwezekano wa Kisiasa*		
Upembuzi yakinifu wa kiutendaji		

Maelekezo: Inawezekana sana Inawezekana kiasi

*Uwezekano unatokana kufanya maamuzi ya mapitio ya sera sanifu, usaili wa wadau, na uchanganuzi wa bajeti unaoongozwa na Wizara ya Afya.

TATHMINI NA MAPENDEKEZO

Kulingana na Jedwali 1, chaguo la gharama nafuu zaidi ni matumizi ya Wahudumu wa Afya ngazi ya Jamii (CHWs) kushawishi utumiaji wa TPT. Hii ni kwa sababu matumizi ya sera hii yatawafikia watu wengi zaidi takribani 517, 999 na kwa gharama ndogo kwa makadirio ya \$5,015,283 ambayo ICER yake ni 0.85 ambayo ni ndogo kuliko ya sera nyingine yenye ICER ya 0.93. Kama ilivyoainishwa katika Jedwali 2, taarifa ya ujumbe wa simu ya kiganjani ina uwezekano mdogo huku matumizi ya CHWs yana uwezekano wa juu wa kisiasa na kiutendaji. Hii ni kutokana na ukweli kwamba gharama ya utekelezaji ni ndogo. Kwa sababu hii, tunapendekeza kupitishwa kwa chaguo hili la kisera. Kwa hivyo, kutumia CHWs, kutapanua uelewa wa jamii, kuhimiza utumiaji wa TPT miongoni mwa wagonjwa, na kupunguza tatizo la maambukizi ya TB.

HATUA ZINAZOFUATA

Ili kuhakikisha kwamba Wahudumu wa Afya ngazi ya Jamii wanafunzwa na kutambuliwa kote nchini, Wizara ya Afya itafanya mapitio ya uchanganuzi wa sera na kutenga bajeti kwa ushirikiano na wadau wengine. Programu ya TB pia itafahamishwa juu ya matokeo ya sera pendekezwa ili kuwashawishi kufikiria kuhusu kuunganisha usimamizi wa utumiaji wa TPT katika mafunzo elekezi ya CHWs. Bahati nzuri ni kwamba, kitengo cha Health Promotion cha Wizara ya Afya kwa sasa kiko katika mchakato wa

kuajiri na kutoa mafunzo kwa Wahudumu wa Afya ngazi ya Jamii 153 875 ambao watatoa huduma jumuishi za afya na ustawi wa jamii katika ngazi ya chini. Kwahiyo hii ni fursa ambapo utoaji wa TPT utafanywa na CHWs kwa njia jumuishi.

SHUKURANI

Kwanza kabisa, tunapenda kushukuru taasisi zetu zilizofanikisha sisi kupata ruhusa na kufanikisha kufanyika kwa utafiti huu. Pia kipekee zaidi tunapenda kuwashukuru washauri wetu akiwemo Dkt. Kwame Nyahko na msimamizi wetu Bi. Mwango Ng'uni kwa usimamizi wao wa karibu. Mwisho kabisa lakini si kwa umuhimu tunapenda kuishukuru programu ya DIP kwa kutuwezesha kifedha kipindi chote cha utafiti huu.

REFERENCES

1. Global tuberculosis report 2020. Geneva: World Health Organization; 2020. Licence: CC BY-NC-SA 3.0 IGO.
2. Mollel EW, Todd J, Mahande MJ, Msuya SE. Effect of tuberculosis infection on mortality of HIV-infected patients in Northern Tanzania. *Trop Med Health*. 2020 Apr 27;48:26. doi: 10.1186/s41182-020-00212-z. PMID: 32355448; PMCID: PMC7184680.
3. Implementing the Stop TB Strategy: A handbook for national tuberculosis control programmes. Geneva, World Health Organization, 2008 (WHO.THM/TB/2008.401)
4. Global Tuberculosis Report 2018. Geneva: World Health

- Organization; 2018. License: CC BY-NC-SA 3.0 IGO.
5. Mollel EW, Maokola W, Todd J, Msuya SE, Mahande MJ. Incidence Rates for Tuberculosis Among HIV Infected Patients in Northern Tanzania. *Front Public Health*. 2019 Oct 24;7:306. doi: 10.3389/fpubh.2019.00306. PMID: 31709218; PMCID: PMC6821649.
 6. Maokola W, Ngowi B, Lawson L, Mahande M, Todd J, Msuya SE. Performance of and Factors Associated With Tuberculosis Screening and Diagnosis Among People Living With HIV: Analysis of 2012-2016 Routine HIV Data in Tanzania. *Front Public Health*. 2020 Feb 6;7:404. doi: 10.3389/fpubh.2019.00404. PMID: 32117844; PMCID: PMC7015871.
 7. Sabasaba, A., Mwambi, H., Somi, G. et al. Effect of isoniazid preventive therapy on tuberculosis incidence and associated risk factors among HIV infected adults in Tanzania: a retrospective cohort study. *BMC Infect Dis* 19, 62 (2019).
 8. Maokola W, Ngowi B, Lawson L, Robert M, Mahande M, Todd J, Msuya S. Coverage of isoniazid preventive therapy among people living with HIV; A retrospective cohort study in Tanzania (2012-2016). *Int J Infect Dis*. 2021 Feb;103:562-567. doi: 10.1016/j.ijid.2020.11.192. Epub 2020 Dec 2. PMID: 33276111; PMCID: PMC7862080
 9. Komba FF, Frumence G. Facility and patient barriers in the implementation of isoniazid preventive therapy for people living with HIV attending Care and Treatment Centers, Songea Municipality, Tanzania. *Pan Afr Med J*. (2021)

The Feasibility of Mesh Repair for Emergency Inguinal Hernia Surgery in a Low-Income Setting

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ABSTRACT

Introduction: Inguinal hernias are a cause of about 75% of all abdominal hernias. The prevalence of inguinal hernias increases with age, from 4.0% to 4.7% among adults aged above 40 and those above 75 years respectively. The risk is higher in men (27-43%) than in women (3-6%). The prevalence of inguinal hernias in Tanzania is 5.4% with males being more affected. Surgical repair is the definitive management of inguinal hernias, and being performed on over 20 million patients per year. It is among the commonest procedures performed by general surgeons worldwide.

Case report: We report a case of a 67 years old male, a known patient with Benign Prostate Hyperplasia (BPH) for 16 years. The case presented at Morogoro Regional Referral Hospital (MRRH), Emergency department with a complain of a left inguinal irreducible swelling, associated with abdominal pain, and a positive history of herniorrhaphy 7 years ago. Abdominal pelvic ultrasonography showed signs of a left strangulated direct inguinal hernia. Intra-operatively, a gangrenous necrotic bowel was identified and resected, end to end anastomosis was done and a prosthetic mesh repair technique was used to repair the weak abdominal muscles. The patient was discharged with antibiotics four days post operation making a full recovery with no complications.

Conclusion: Though hernias can have mild or no symptoms, spontaneous healing is impossible and surgical repair is inevitable. Mesh repair is a safe alternative to suturing technique and therefore it is feasible, reliable and effective procedure for emergency inguinal hernia surgery in a low-income setting.

Keywords: feasible, direct inguinal hernia, herniorrhaphy, prosthetic mesh repair (hernioplasty)

INTRODUCTION

Inguinal hernias, the protrusion of a portion of the abdominal content through an opening in the inguinal region with a sac covering the abdominal content accounts for about 75% of abdominal wall hernias [1]. They are classified into direct and indirect hernias with reference to the location it occurs, and usually consist of abdominal viscera, a peritoneal sac, together with the covering skin and subcutaneous tissue [2].

Despite the global prevalence of inguinal hernias for all ages being low 1.7%, the risk increases with advancing age with persons aged 45 years and above having a prevalence of 4%. Men have also been found to have a higher lifetime risk of getting a hernia, 27-43% compared to women, 3-6% [1,3]. In Tanzania, the prevalence of inguinal hernia among adults was found to be 5.4%; the prevalence amongst men was found to be at 12% [4].

While direct inguinal hernias occur commonly in adults following weakness of abdominal muscles, indirect inguinal hernias occur more often in infants secondary to failure of closure of the processus vaginalis and weakening of the fascia that lines the anterolateral abdominal wall (transversalis fascia) [5]. Indirect inguinal hernias can be easily identified as a swelling stretching to the scrotum when the baby is straining or crying. Heavy weightlifters, patients suffering from severe forms of constipation and obstructive uropathy, or with chronic cough may present with direct inguinal hernias [6].

Surgical repair is the mainstay management of inguinal hernias

and among the most common surgical procedures performed worldwide [3]. In resource rich settings, laparoscopic repair is the good approach while open repair continues to be the most used method by surgeons working in resource poor settings [2].

Mesh repair is the gold standard procedure for hernia surgical repair and currently there is a shift towards doing laparoscopic repair especially in resource-rich settings.

One shortcoming globally is that hernias in our setup are always done on emergency environment and rarely done in elective plan and therefore this influences the feasibility of mesh repair. So far, what is offered within our setup include simple repair and mesh repair though these services are not adequately offered to the population in need. [7]

This study elaborates the feasibility of mesh repair for emergency inguinal hernia surgery in a low-income setting; and therefore, we report on the surgical management of 67 years old male who presented to the Morogoro Regional Referral Hospital (MRRH), Emergency department with a left strangulated irreducible left inguinal hernia.

CASE PRESENTATION

A 67-year-old male patient presented to MRRH emergency department complaining of on-and-off abdominal distension around the left groin area for over one month, associated with mild abdominal pain whenever swelling appears. One day before admission, the swelling became irreducible and accompanied by severe colic abdominal pain localized on the left groin

region radiating to the left thigh. Also, patient had complained of incomplete emptying of bladder and nocturia for two years but never seek medical treatment. The patient had no history of chronic cough, constipation or lifting heavy weights. He also had a history of inguinal hernia repair on the same side when he was 54 years old, from which he recovered completely.

Upon examination, he had stable vitals; his abdomen was soft, not distended, with some tenderness on deep palpation and increased bowel motility on auscultation. On the inguinal genital examination, there was tender left side inguinal swelling that was irreducible with no scrotal swelling or tenderness and reached a diagnosis of Irreducible direct left inguinal hernia (Fig 1).



Figure 1: Image showing the Left Inguinal Swelling

The patient was prepared for herniorrhaphy. Under spinal anaesthesia in aseptic techniques, the incision was made through the old inguinal scar, layers opened and the sac was identified; a gangrenous bowel through Hesselbach's triangle was identified and resected; End-to-end bowel anastomosis was done. A basin repair was done, a 4*12cm mesh size was trimmed to match the inguinal anatomy of the patient and fixed on reinforced posterior wall of inguinal canal by non-absorbable suture. (Figure 3) and (Figure 4)



Figure 2: Picture Illustrating Mesh Preparation

Post-operation, patient had stable vitals, given antibiotics for 5 days discharged fourth day. There after patient was followed at seventh day and discontinued visits at one month.

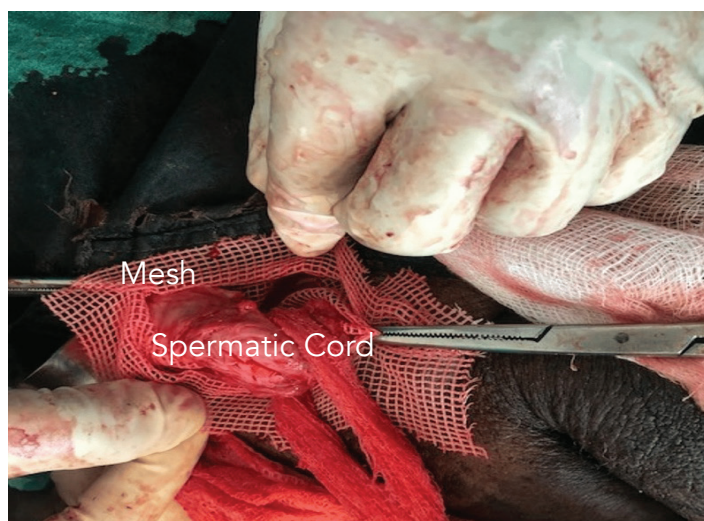


Figure 3: Picture Illustrating Mesh Fixing on the Inguinal Ligament and Conjoint Tendon

DISCUSSION

With advances in technology, there is a current shift towards more modern, minimally invasive surgical techniques including laparoscopic hernia repair that has been associated with less pain, reduced hospital stay and shorter time to recovery [8,9]. However, the preferable surgical approach differs for every patient and surgeons should be able to make informed decisions on the surgical method of choice by being up to date on the different available techniques: this includes being informed on the needed post-operative care and risk for recurrence [10]. Simultaneous management of the Benign prostatic hypertrophy (BPH) with the inguinal hernia in our patient, would have been the correct approach in order to avoid recurrence [11].

Safe provision of mesh repair requires a functioning healthcare system including operating rooms, sterilization equipment, and monitoring devices. Adequate infrastructure is essential for ensuring safe surgical procedures and minimizing the risk of complications. If this becomes a challenge in the mesh repair

which can be regarded as gold standard procedure, it might be more difficult in the laparoscopic approach as well.

Trained workforce is also very important to support the feasibility of mesh repair. This includes availability of skilled surgeons trained in surgical procedures including mesh repair techniques. In low- resource setting these experts are not adequate to meet the needs of the population. Laparoscopic hernia repair requires highly specialized training and expertise, which may not be widely accessible in and therefore making these services to be hardly accessible in low-income settings.

The resource availability, especially of necessary items such as mesh materials, surgical instruments, anaesthesia supplies, and post-operative care facilities is very important to sustain the feasibility of the services. In low-income settings, these resources may be limited, and alternative options or adaptations may need to be considered.

The viability of mesh repair for urgent inguinal hernia surgery in low-income settings might be better understood and perhaps applied as the gold standard procedure by taking these factors into account and carrying out more study. In situations with limited resources, cooperation between researchers, legislators, and healthcare professionals is crucial to overcome obstacles and enhancing surgical treatment. [12]

MUHTASARI

Uwezekano wa Matibabu ya Upasuaji wa Dharura wa Ngiri ya Kinena kwa Kutumia Kitambaa Aina ya Bandeji (Mesh Repair) Katika Nchi za Uchumi Mdogo]

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Utangulizi: Ngiri ya kinena ni kisababishi cha takriban asilimia 75 ya ngiri zote za tumbo. Ukubwa wa tatizo la ngiri ya kinena huongezeka kulingana na umri, kutoka asilimia 4 hadi 4.7 kati ya watu wazima wenye umri wa zaidi ya miaka 40 na wale zaidi ya miaka 75 mtawalia. Hatari ni kubwa kwa wanaume (asilimia 27-43) kuliko kwa wanawake (asilimia 3-6). Ukubwa wa tatizo la ngiri ya kinena nchini Tanzania ni asilimia 5.4 huku wanaume wakiathirika zaidi. Upasuaji ni udhibitaji madhubuti wa ngiri ya kinena, na hufanywa kwa wagonjwa zaidi ya milioni 20 kwa mwaka. Ni kati ya matibabu ya kawaida yanayofanywa na madaktari wa upasuaji duniani kote.

Taarifa za Mgonjwa: Tunaripoti kisa cha mwanaume mwenye umri wa miaka 67, mgonjwa anayejulikana na Tezi Dume (Benign Prostate Hyperplasia, BPH) kwa miaka 16. Mgonjwa huyu alihudhuria na kupata huduma ya matibabu katika idara ya dharura katika Hospitali ya Rufaa ya Mkoa wa Morogoro (MRRH) na malalamiko ya uvimbe wa kinena waupande wa kushoto usioweza

CONCLUSIONS

Despite the advantages that laparoscopic hernia repair has to offer its practicability in resource poor settings remains a challenge leaving open hernia repair by either tissue or mesh technique as the most widely available options. Although most surgeons prefer using open herniorrhaphy because of its low cost and short duration of operation, it is associated with high recurrence. Our case report suggests the use of mesh technique (hernioplasty) as a safe alternative technique with low recurrence rate and therefore it is reliable and effective procedure for emergency inguinal hernia surgery but encountering difficulties in determining whether a technique course of action is achievable, and sustainable given the existing constraints and conditions in our setup. Feasibility challenges including resource constraints, technical limitations and other factors that can impact the successful implementation of the practice, need to be resolved for improved implementation of the mesh repair.

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kupunguzwa, ukiambatana na maumivu ya tumbo, na historia ya kufanyiwa upasuaji wa ngiri miaka 7 iliyopita. Uchunguzi ulionyesha dalili za ngiri ya kinena iliyojifunga upande wa kushoto. Wakati wa upasuaji, utumbo mwembamba uliofungwa ulionekana kuwa umeharibika (kuoza) nakuhitaji kuondolewa (kukatwa). Baada ya hapo utumbo uliunganishwa (anastomosis) na kurekebisha kitalaam, na kwa kutumia kitambaa maalum kama bandeji kurekebisha kwa kuongezea nguvu ya misuli dhaifu ya tumbo. Mgonjwa aliruhusiwa siku nne baada ya upasuaji na kuendela na antibiotiki kwa siku nne. Mgonjwa alipata ahueni kamili bila matatizo yoyote.

Hitimisho: Ingawa ngiri inaweza kuwa na dalili za maumivu ya kawaida au isiwe na dalili zozote, uponyaji wa moja kwa moja hauwezekani kupatikana na hivyo upasuaji haukupukiki. Matibabu ya matumizi ya kitambaa aina ya Bandeji (Mesh repair) ni mbinu mbadala salama kwa hivyo inawezekana, inategemewa na ni utaratibu mzuri wa matibabu ya dharura ya upasuaji kwa ngiri

ya kinena katika nchi zenye uchumi wa chini.

Maneno muhimu: Inayowezezana, ngiri ya kinena, upasuaji wa ngiri (herniorrhaphy), matibabu ya kutumia kitambaa aina ya bandeji (hernioplasty)

REFERENCES

1. Jenkins JT, O'Dwyer PJ. Inguinal hernias. *BMJ*. 2008;336(7638):269-272. doi:10.1136/bmj.39450.428275.AD
2. Hassler KR, Saxena P, Baltazar-Ford KS. Open Inguinal Hernia Repair. In: StatPearls. StatPearls Publishing; 2023. Accessed August 19, 2023. <http://www.ncbi.nlm.nih.gov/books/NBK459309/>
3. Köckerling F, Simons MP. Current Concepts of Inguinal Hernia Repair. *Visc Med*. 2018;34(2):145-150. doi:10.1159/000487278
4. Beard JH, Oresanya LB, Akoko L, Mwanga A, Dicker RA, Harris HW. An estimation of inguinal hernia epidemiology adjusted for population age structure in Tanzania. *Hernia*. 2014;18(2):289-295. doi:10.1007/s10029-013-1177-5
5. van Wessem KJP, Simons MP, Plaisier PW, Lange JF. The etiology of indirect inguinal hernias: congenital and/or acquired? *Hernia*. 2003;7(2):76-79. doi:10.1007/s10029-002-0108-7
6. Sabiston DC, Lyerly HK, eds. *Textbook of Surgery: The Biological Basis of Modern Surgical Practice*. 15th ed. W.B. Saunders; 1997.
7. Aloysius Ogbuanya, Fabian Olisa et al. Feasibility and Safety of Prosthetic Implants for Inguinal Hernia Repair in a Nigerian Tertiary Hospital: *Medical Journal of Zambia*, Vol. 47 (3): 188 - 196 (2020)
8. Haladu N, Alabi A, Brazzelli M, et al. Open versus laparoscopic repair of inguinal hernia: an overview of systematic reviews of randomised controlled trials. *Surg Endosc*. 2022;36(7):4685-4700. doi:10.1007/s00464-022-09161-6
9. Hope WW, Pfeifer C. Laparoscopic Inguinal Hernia Repair. In: StatPearls. StatPearls Publishing; 2023. Accessed August 23, 2023. <http://www.ncbi.nlm.nih.gov/books/NBK430826/>
10. Gudigopuram SVR, Raguthu CC, Gajjela H, et al. Inguinal Hernia Mesh Repair: The Factors to Consider When Deciding Between Open Versus Laparoscopic Repair. *Cureus*. 13(11):e19628. doi:10.7759/cureus.19628
11. Gueye SM, Fall PA, Ndoye AK, et al. [Simultaneous treatment of benign prostatic hypertrophy and inguinal hernia: an old procedure revisited]. *Dakar Med*. 1999;44(2):219-221.
12. Miserez M, Peeters E, Aufenacker T, et al. Update with level 1 studies of the European Hernia Society guidelines on the treatment to inguinal hernia in adult patients. *Hernia* 2014; 18:151-63.

Improving quality of Nursing and Midwifery Services in Primary Health Care Facilities using Clinical Audit: Efforts so far and Way Forward

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ABSTRACT

Introduction: Clinical Audit (CA) is a systematic analysis of quality of health care including procedures for diagnosis, treatment, care, use of resources, resulting outcome and quality of life for patient. The Ministry of Health has employed for the goal of improving quality of care through benchmarking services provided with set standards for health care delivery. This article documents experience of implementation of the clinical audit for nursing and midwifery care in primary health care facilities to promote use of set standards in providing nursing and midwifery services.

Methods: Clinical audit was conducted in 46 district hospitals in ten (10) regions by the team of clinical auditor using tools covering components for nursing and midwifery care standards. Collected information was entered into an automated digital designed system of the Ministry of Health, Afya Supportive Supervision (Afya SS) which generated scores and recorded the identified gaps.

Results: Findings show that overall score for nursing services was 39% where Kahama District Hospital performance was 90% which was the highest among 46 hospitals and Mlowa, Kigamboni, Kivule, Kishapu and Kwimba hospitals scored the lowest (0%). Among areas of nursing, care triage was the area which performed relatively good with average of 39%. Overall midwifery services performance was 67% whereby Kivule hospital and Moshi District Council hospital were among the leading with more than 80%. The leading service area for performance, was performing initial Per vaginum (PV) examination and documentation of personal particulars.

Conclusions: Performance of nursing and midwifery services were poor coupled with incomplete documentation of all nursing and midwifery procedures, which were likely to affect treatment outcomes. This gives an insight that primary health care is suffering from inadequate quality of nursing and midwifery services to an extent that effective measures should be taken into consideration to improve quality of care and clinical auditing should maintained.

INTRODUCTION

Clinical Audit (CA) is a systematic analysis of the quality of health care including procedures for diagnosis, treatment, care, use of resources, resulting outcome and quality of life for the patient. Clinical audit can be traced back to the work of Florence Nightingale (Founder of Modern Nursing) in 1800s and Ernest Codman in early 1900s where it was used to monitor morbidity and mortality rates. Nightingale used an epidemiological method of review and monitor rates of nosocomial infections in relation to standards of hygiene while Codman introduced the idea of systematic record review as a way of identifying errors [1]. Clinical audit has been applied as one of the approaches in improving quality of care in health care settings through a cyclic process of assessing services against set standards to improve effectiveness of providing services which are evidence based guided by set standards. It involves ensuring standards are available, assessing actual practice against standards, identifying gaps and designing practical action plans with time frame to address gaps before reassessment.

The World Health Organization (WHO) defines quality as a health service given to the right person by the right provider in a timely manner. Furthermore, the WHO provides six key

components of a good quality of services, when the right care is provided by the right person at the right time, responding to the needs and preferences, while minimizing harm and wastage of resource all the time. Also, another definition of quality by WHO looks quality health care as “the degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge” [2]. There are six measurable characteristics of quality health care that include effectiveness, efficiency, safety, person-centred care, equity, and accessibility of care which includes timeliness and affordability [3-4].

The Ministry of Health has prioritized quality of care in this decade where there is improved access to health care services in line with ongoing efforts of improving availability of competent workforce. According to The Health Sector Strategic Plan V, Clinical Audit is described as one of the most effective interventions in addressing quality of care particularly effectiveness of service delivery that aligns with set standards [5].

Ministry of Health through Nursing and Midwifery Services Division started to implement clinical audit in nursing and midwifery services in health system since 2019 to complement efforts of the Health Sector in improving quality of care. In the

year 2023, the focus of implementation was for primary health care particularly council hospitals and health centres with high volume of clients. Implementation of clinical audit is an effective way of improving monitoring of service delivery according to set standards in a simplified way that can be institutionalized at the facility level to improve quality of care. Therefore, the present paper reports findings based on clinical audit for nursing and midwifery care in primary health care facilities with the aim of assessing the level of adherence to set standards in providing nursing and midwifery services.

METHODS

Study design and Area

This was a retrospective document review conducted in 46 health facilities from 10 regions. The regions were purposefully selected basing on funding agent geographical areas of support. Audit was done in two phases in which phase one involved 31 council hospitals in 6 regions of Kigoma, Geita, Shinyanga, Mwanza, Dodoma and Dar es Salaam under financial support of United Nations Population Fund (UNFPA). Phase two involved 15 council hospitals from 4 regions of Singida, Manyara, Arusha and Kilimanjaro which was supported by Ministry of Health through Health Basket Fund.

Data Collection

Experts in nursing and midwifery care from Ministry of Health, President's Office – Regional Administration and Local Government (PO-RALG), health facilities from different levels and professional association such as Tanzania Midwifery Association and Tanzania National Nurses Association developed clinical audit tools through technical workshop sessions. Two tools (nursing tool and midwifery tool) were developed whereby the midwifery tool comprised five areas namely: antenatal clinic, antenatal ward, labour ward, postnatal care ward, and crosscutting issues of infection prevention and control (IPC) and respectful care. The tool for nursing services included eight areas which were: triage, nursing round, nursing process, nursing procedures, patient observation, medication procedure, peri operative care, and resuscitation of critically ill patients. Before training of clinical

auditors, an assessment of the translated tools was conducted to 21 assessors (clinical auditors) at national and regional levels to standardize their understanding.

Based on Nursing and Midwifery services, 15 files were selected in each department, 10 partographs from normal deliveries, 5 files from abnormal deliveries and 5 Reproductive and Child Health (RCH) cards from post-delivery mothers from each audited district hospital. The selection of files was done randomly. A retrospective review of the notes in selected documents were audited against tools with trained team of clinical auditors. During auditing scores were entered in a tool which is automated and available in a digital designed system of the Ministry of Health known as Afya Supportive Supervision (Afya SS) to generate reports with identified gap being recorded. Feedback of the clinical audit reports were provided to all council hospitals and respective Council Health Management Teams (CHMTs) while also teams facilitated development of a plan to address the gaps. The teams indeed oriented hospitals in conducting internal clinical audit on quarterly basis to enhance progressive quality improvement.

Data analysis

During data analysis, collected data were translated into useful information that described how current practices comply with the set standards in the audited areas. A colour coded scoring criterion was used, i.e., score of 90% and above (green) was regarded as good performance, 70% - 89% (yellow) fair performance and below 70% (red) poor performance as shown in Figure 1.

90% - 100% ●	70% - 89% ●	0% - 69% ●
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Figure 1: Score categories and corresponding colour code

RESULTS

Nursing Services

Overall score for the nursing services was 39% whereby only Kahama District Hospital achieved good performance of 90%. A total of 5 hospitals (Mlowa, Kigamboni, Kivule, Kishapu, and Kwimba) scored 0% as shown in Figure 2.

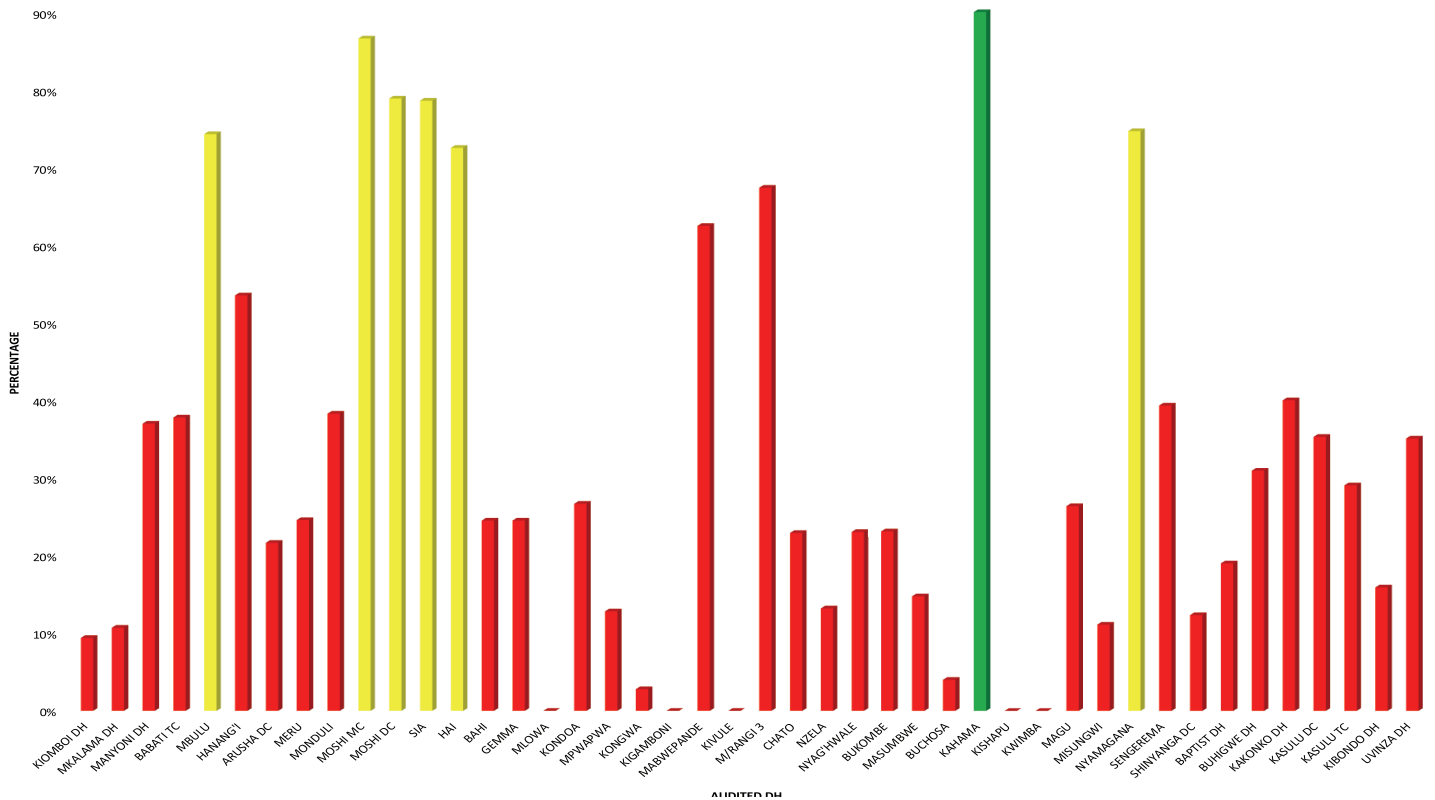


Figure 2: Compliance to Nursing Services per audited district hospital

As presented in Figure 3, all audited areas performed poorly, scores were below 70%. Triage performance was better with 39% score while nursing procedures was the area that performed least.

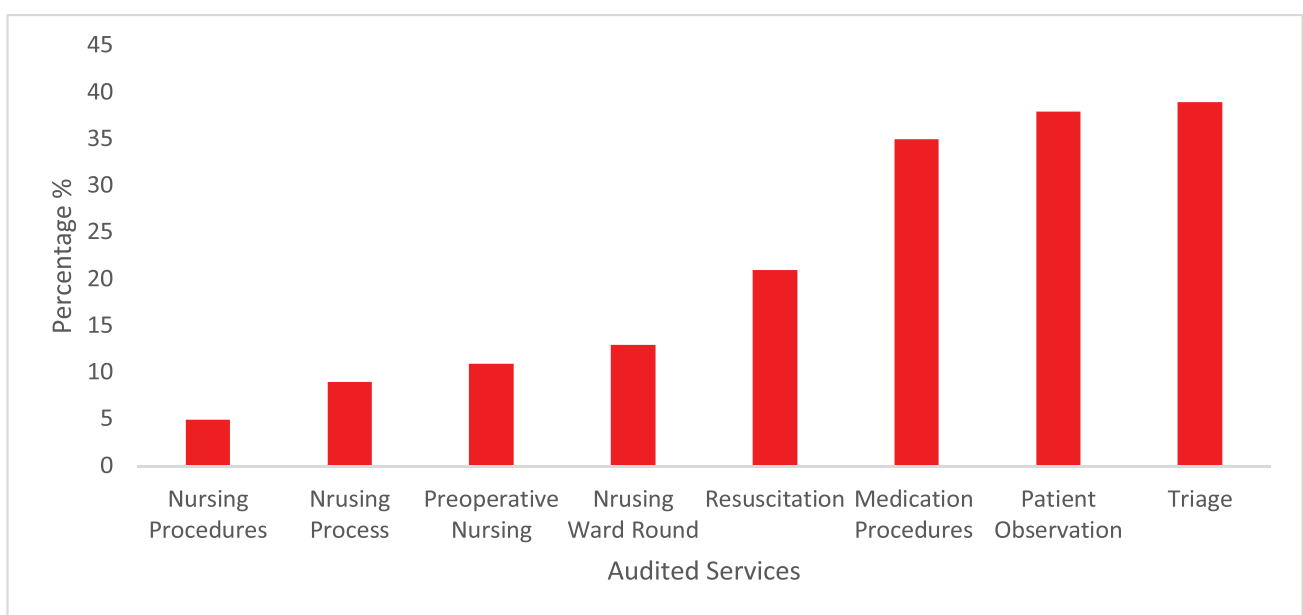


Figure 3: Performance of Audited Nursing Services

Midwifery Services

Generally, midwifery services performed poorly with an overall score of 67%. Midwifery performance indicates that Moshi DC hospital performed higher at 83% score while Bahi DC hospital performed least at 13% score as presented in Figure 4.

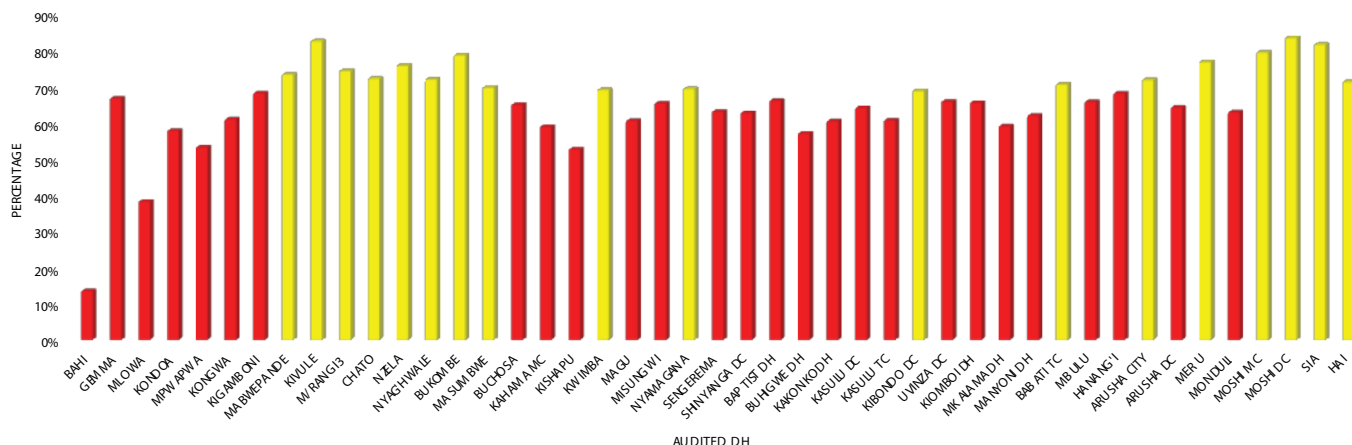


Figure 4: Compliance with Midwifery Services per audited district hospital

Performance of Initial Per vaginum (PV) examination according to standards was relatively high with 85% scores while new-born care services were observed to perform low with average score of 28% as shown in Figure 5.

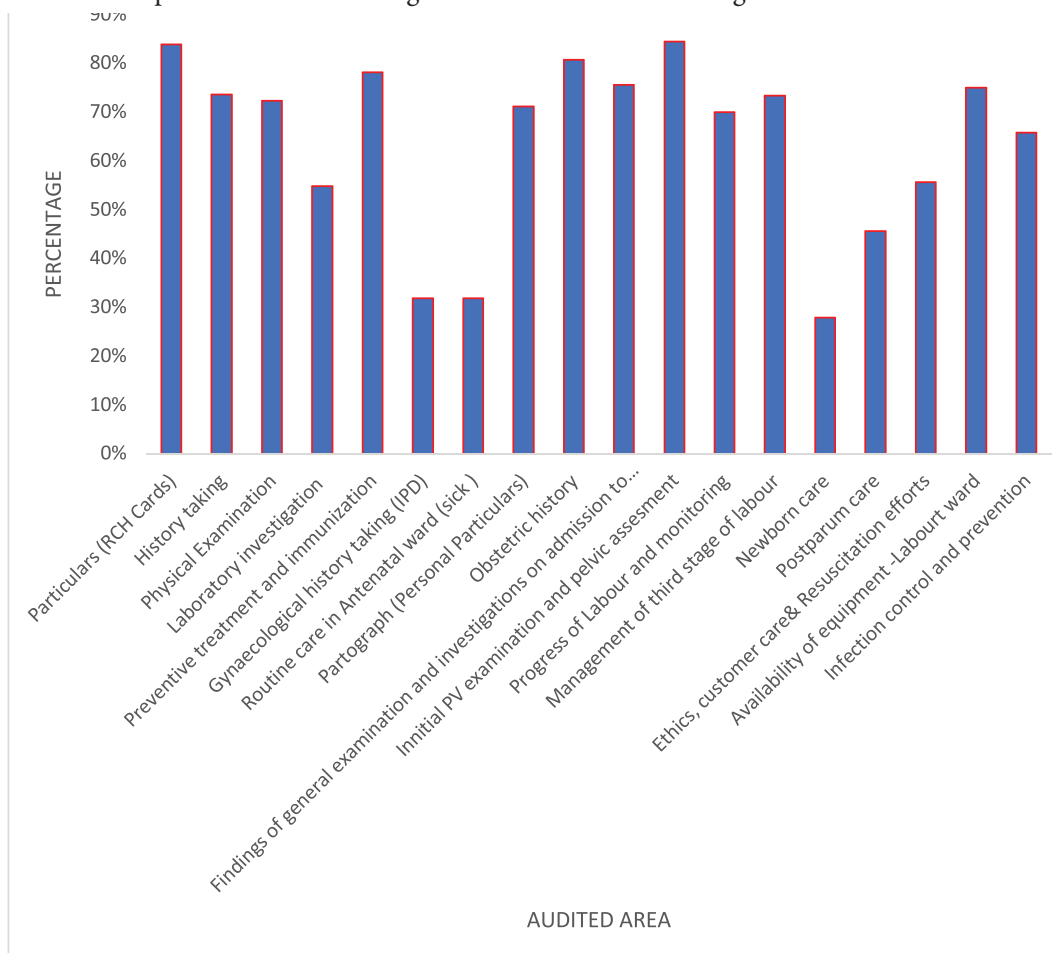


Figure 5: Compliance with Midwifery Services per audited area

DISCUSSION

Performance of nursing and midwifery services were poor, and there was incomplete documentation of all nursing and midwifery procedures. This performance and gap in documentation were likely to affect treatment outcomes.

According to unpublished supportive supervision reports from Tanzania it shows that nursing and midwifery service delivery are not done basing on standards rather routinely and experience-based which increases risk of clients' safety. This could be an explanation to the observed overall poor performance of nursing and midwifery service in the present. Therefore, despite the concept of clinical audit in Tanzanian health systems is new its implementation is showing promising results in improving quality of care because it looks into processes of service delivery and should be continued.

Incomplete documentation of all nursing and midwifery procedure in all 46 district hospitals audited and unavailability of standardized patient care forms were critical gap observed in our study, an area that could enhance quality of care. Although the present study did not consider issue of nursing workload, the observed inadequate documentation may be due to high workload among nurses in the audited district hospitals. In a study done in South Africa, involving nurses working in primary health care facilities, it was reported that increased nurses' workload contributed to inadequate patient information documentation [6]. Additionally, it has been shown that in developing countries the demand of adherence to standards is compromised with increased workload resulted by critical shortage of health care workers [7]. Therefore, to ensure this gap is addressed, dissemination of standards forms, Standard Operation Procedures (SOPs) and guidelines is important and need to be complemented with effective hospital internal supervision.

Institutionalization of clinical audit at facility level is inevitable through building capacity and culture of health care works on engaging internal quality control mechanisms. This is essential given the experience from Kenya in which Gicheha and colleagues noted clinical audit to be important in midwifery services [8]. In order to ensure institutionalization of clinical auditing, clinical auditors in collaboration with members of audited hospital developed Action Plan in each hospital. The Action Plans are being implemented with continuous consultation of the national clinical auditors. The hospitals were also encouraged to plan for and establish an internal system for clinical audit.

The management of the audited district hospitals through their quality improvement teams need to address the gaps that

have been observed in order to improve the quality of the services provided to their clients. This is very important as the Government of Tanzania has endorsed The Universal Health Insurance Act 2023 to enable every Tanzanian to have a health insurance [9].

CONCLUSIONS

Performance of nursing and midwifery services were poor coupled with incomplete documentation of all nursing and midwifery procedures, which were likely to affect treatment outcomes. This gives an insight that primary health care is suffering from inadequate quality of nursing and midwifery services to an extend that effective measures should be taken into consideration to improve quality of care and clinical auditing should maintained.

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MUHTASARI

Kuboresha Ubora wa Huduma za Uuguzi na Ukunga katika Vituo vya Kutolea Huduma ya Afya ya Msingi kwa Kutumia Ukaguzi wa Kimatibabu: Juhudi Hadi Sasa na Hatua za Mbele

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Utangulizi: Ukaguzi wa Kimatibabu ni njia kimfumo ya uchambuzi wa ubora wa huduma zinazotolewa ikijumuisha taratibu za kubaibisha ugonjwa, matibabu, matunzo, matumizi ya rasilimali na ubora wa Maisha ya mgonjwa. Njia hii imeanza kutumiwa na Wizara ya Afya kwa lengo la kuimarisha ubora wa huduma kupitia ulinganishaji wa huduma halisi zinazotolewa na viwango vya utoaji huduma vilivyowekwa. Chapisho hili limenukuu uzoefu uliopatikana kutokana na utekelezaji wa ukaguzi wa kimatibabu kwa huduma za uuguzi na ukunga katika vituo vya kutolea huduma za afya ya msingi ili kuhimiza matumizi ya viwango vya huduma vilivyowekwa kwa utoaji wa huduma za uuguzi na ukunga.

Mbinu: Mbinu: Ukaguzi wa kimatibabu ulitekelezwa katika hospitali 46 za wilaya katika mikoa kumi (10) na Timu ya Wakaguzi wa Kimatibabu kwa kutumia nyanzo zana zinazojumuisha viwango vya uuguzi na ukunga. Taarifa zilizokusanywa ziliwekwa katika mfumo wa kidijitali ulioundwa kiotomatiki wa Wizara ya Afya, Afya Supportive Supervision (Afya SS) ambao ulitoa alama na kutanabaiha mapungufu yaliyotambuliwa.

Matokeo: Matokeo yanaonesha kuwa alama za ujumla za huduma za uuguzi zilikuwa asilimia 39 ambapo Hospitali ya Wilaya ya Kahama ilipata asilimia 90 zikiwa ni alama za juu zaidi miongoni mwa hospitali 46 zilizokaguliwa na hospitali za Mlowa, Kigamboni, Kivule, Kishapu na Kwimba zikipata alama za chini zaidi (asilimia 0). Kati ya maeneo ya huduma za uuguzi 'triage' ndiyo eneo ambalo lilifanya vizuri zaidi likiwa na wastani wa asilimia 39. Kwa upande wa huduma za ukunga, alama za ujumla zilikuwa asilimia 67 ambapo Hospitali ya Kivule na Hospitali ya Halmashauri ya Wilaya ya Moshi (Moshi DC Hospital) ni miongoni mwa hospitali zilizoongoza zikiwa na alama zaidi ya asilimia 80. Eneo la huduma za ukunga lililoongoza kwa kufanya vizuri ni upimaji wa awali wa njia ya kujifungua (initial per vaginal examination) na uandikaji wa taarifa binafsi za mgonjwa

Hitimisho: Utendaji wa huduma za uuguzi na ukunga ulikuwa duni ukichangiwa na kutokamilika kwa taarifa zinazohusu taratibu zote za uuguzi na ukunga, ambazo zingeweza kuathiri matokeo ya matibabu. Hii inatoa mwanga kwamba huduma za afya ya msingi inakabiliwa na ubora duni wa huduma za uuguzi na ukunga ambapo kunahitajika kuchukuliwa hatua madhubuti ili kuboresha ubora wa huduma zinazotolewa na ukaguzi wa kimatibabu unapaswa kuwa endelevu.

REFERENCES

1. Hughes, M. A Manual for Lay Members of the Clinical Audit Team. 2012
2. Institute of Medicine. Medicare: a strategy for quality assurance, volume I. Washington (DC): National Academies Press; 1990. Available from: <https://nap.nationalacademies.org/catalog/1547/medicare-a-strategy-for-quality-assurance-volume-i> Accessed on 17 January 2024.
3. Delivering quality health services: a global imperative for universal health coverage. Geneva: World Health Organization, Organisation for Economic Co-operation and Development, and The World Bank; 2018. Licence: CC BY-NC-SA 3.0 IGO. <https://iris.who.int/bitstream/handle/10665/272465/9789241513906-eng.pdf?ua=1>
4. National Academies of Sciences, Engineering, and Medicine; Health and Medicine Division; Board on Health Care Services; Board on Global Health; Committee on Improving the Quality of Health Care Globally. Crossing the Global Quality Chasm: Improving Health Care Worldwide. Washington (DC): National Academies Press (US); 2018 Aug 28. Summary. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK535643/>
5. Ministry of Health, Community Development, Gender, Elderly and Children. (2021). Health Sector Strategic Plan July 2021 – June 2026 (HSSP V); Leaving No One Behind. MoHCDCGEC, Dodoma, Tanzania. Available from: <https://mitu.or.tz/wp-content/uploads/2021/07/Tanzania-Health-Sector-Strategic-Plan-V-17-06-2021-Final-signed.pdf>
6. Shihundla, R. C., Lebeso, R. T., & Maputle, M. S. (2016). Effects of increased nurses' workload on quality documentation of patient information at selected Primary
7. Naicker S, Plange-Rhule J, Tutt RC, Eastwood JB. Shortage of healthcare workers in developing countries--Africa. *Ethn Dis*. 2009 Spring;19(1 Suppl 1):S1-60-4. PMID: 19484878.
8. Gicheha, E.W., Richens, Y., Kivai, R.M., and Lavender, T. Why clinical audit is important in midwifery: experience from Kenya. *African Journal of Midwifery and Women's Health*, 2017; 11(2):62-66.
9. Jamhuri ya Muungano wa Tanzania. (2023). Sheria ya Bima ya Afya kwa Wote ya Mwaka 2023. Available from: <https://www.moh.go.tz/storage/app/uploads/public/656/de7/1aa/656de71aae4fb340630686.pdf> Accessed on 17th January 2024.

