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Kenya: How Devolution Has Impacted Budgeting for Compensation and Distribution of Health Workers

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Paper

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1. INTRODUCTION

There is a long history of unequal access to services in Kenya, including core social services such as education and health. In 2010, Kenya adopted a new constitution and introduced devolution in part to address these inequalities. Devolution saw the transfer of significant health functions to county governments with the national government left to play the role of policy making and running top referral hospitals. The constitution of Kenya provides for every Kenyan to have access to the highest attainable standard of health care. But ensuring vulnerable and marginalized groups have accessible health care can be a challenge, necessitating deliberate interventions by government.

Health workers are the largest input into health services and therefore, the distribution of these workers is a major indicator of equitable access. Under devolution, counties have control over their own health budgets and workforces and therefore should be able to change their spending patterns to adjust the number and distribution of health workers. This paper aims to answer several questions around the distribution of health workers. First, four years since their establishment, have counties adjusted their budgets in ways that have improved the distribution of health workers to match their needs? Second, are high education workers who are better skilled moving to counties that previously didn't have access to such health workers? Lastly, what strategies have various counties put in place to attract and retain health workers? Our goal in addressing these questions is to provide evidence that will inform county and national policy on human resources for health in order to make access to health care more equitable across the country.

The counties studied include Elgeyo Marakwet, Bungoma, Kilifi, West Pokot, Samburu, Turkana, and Baringo. This sample represents different regions in the country (North Eastern, Western, Rift Valley and Coast regions) and were selected based on the available data. In this paper, we also interrogate policy and budget interventions taken by various counties to improve in the quantity and quality of health workers from 2014 to 2017.

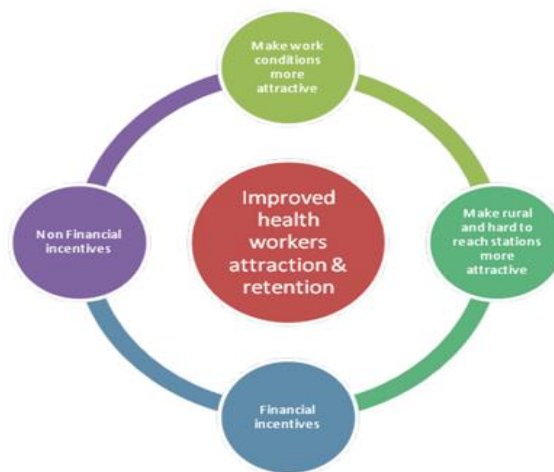
2. POLICY FRAMEWORK ON DISTRIBUTION OF HEALTH WORKERS ACROSS KENYA

One of the policy interventions envisioned in the *Kenya Health Sector: Human Resources Strategy 2014-2018* published by Ministry of Health (MoH), is ensuring adequate and equitable distribution of the health workforce. Adequacy relates to" numbers, skill mix, competence and attitudes of the health workforce," While equitable distribution relates to" improving of the existing health workforce by putting in place attraction, retention and motivational mechanisms for the workforce especially in marginalized areas." Counties are encouraged to establish information systems for health human resource and to redeploy staff according to needs, workload and skills. In

addition, creating an ideal environment should be prioritized; developing and reviewing schemes of service, and providing competitive and attractive retention packages to health workers can ensure workers are satisfied.

Shortly after counties took the health functions in February 2015, the MoH issued guidelines on devolved human resources for health, offering information on an array of policy issues including county health workforce recruitment and deployment, and an incentive framework for attraction and retention of health workers. In recognition of the difficulty attracting quality health workers in under developed areas, the guidelines proposed four strategies to ensure improved health worker attraction and retention (See Figure 1).

FIGURE 1. STRATEGIES FOR ATTRACTION AND RETENTION OF HEALTH WORKFORCE



Incentive Framework for Attraction and Retention of health workforce

Source: MoH Guidelines on Devolved Human Resources for Health, 2015

Clearly, these options have financial implications for the county budget, particularly in the case of direct financial incentives, but even for the other three strategies. Counties would need to carefully consider what strategies to adopt based on their respective context and availability of funds. For example, they may opt to renovate or upgrade health facilities (improve work conditions), provide transport for family visits every few months for those living far from family (make rural posts more attractive), improve health workers' housing or establish social amenities (non-financial incentives).

2.1 PRE-DEVOLUTION PERIOD

In the pre-devolution period (up to 2013), all health workers were employed and compensated through the Ministry of Health, except for those employed in semi-autonomous government agencies (state corporations) under the health sector such as the Kenyatta National Hospital. Health workers remained under the national government even after devolution and establishment of county governments. All health workers were paid by the national government until the end of 2013, when counties assumed payroll responsibilities. The national government then transferred the management of the employees that were already working in counties to those counties at the end of 2013.

HOW MUCH WAS BEING SPENT BY THE NATIONAL GOVERNMENT ON HEALTH WORKERS BEFORE DEVOLUTION?

In June 2013, the National Treasury produced an estimate of how much it would cost to pay all existing health workers in 2013/14 (see Table 1).

TABLE 1. PERSONNEL EMOLUMENTS FOR FY 2013/14 -HEALTH FUNCTIONS

County	**Amount in Kshs. Millions**						
	Public Health	*Medical Services*	*Total Personnel Emoluments*	*All cadres*	*Hospital visits 2013*	*Population 2014*	*Annual Spending per capita (Kshs.)*
Mandera	44	116	161			685,510	234
Turkana	94	172	266			1,009,225	263
Bomet	122	245	367			861,397	426
Homa Bay	178	311	489			1,077,554	454
Narok	213	243	456			1,003,672	454
Siaya	226	226	452			941,724	480
Wajir	72	143	214			442,371	484
Kilifi	257	412	669			1,307,185	512
Kwale	199	200	398			765,831	520
Nyamira	172	176	349			668,863	521
Migori	225	322	547			1,025,422	534
Kitui	285	338	623			1,075,866	579
Vihiga	184	167	351			605,379	580
Kajiado	251	234	485			810,918	598
Nandi	241	299	540			888,435	607
Kericho	285	268	553			887,659	623
West Pokot	146	232	378			605,033	625
Bungoma	364	610	975			1,500,990	649
Uasin Gishu	373	313	686			1,054,805	650

Kakamega	485	712	1,198			1,812,330	661
Tranzoia	239	409	647			966,197	670
Meru	435	540	975			1,441,361	676
Muranga	280	437	717			1,042,929	687
Busia	244	335	579			812,036	713
Makueni	295	385	680			939,879	724
Kisii	363	624	987			1,288,290	766
Tana River	102	142	243			282,958	861
Samburu	97	135	232			264,284	878
Machakos	423	641	1,065			1,167,480	912
Kirinyanga	224	323	547			584,377	936
Nyandarua	195	437	632			659,848	958
Laikipia	195	261	456			470,965	969
Kiambu	630	1,142	1,772			1,795,999	987
Marsabit	102	209	310			309,557	1,003
Nakuru	570	1,388	1,958			1,891,739	1,035
Nairobi	1,812	2,474	4,286			4,004,400	1,070
Baringo	388	373	760			655,641	1,159
Tharaka Nithi	168	283	452			388,202	1,163
Taita	135	258	393			334,042	1,178
Kisumu	381	899	1,280			1,083,268	1,181
Elgeyo Marakwet	266	279	544			436,631	1,247
Garissa	141	401	542			416,389	1,303
Embu	307	594	901			548,569	1,642
Nyeri	381	880	1,262			767,560	1,644
Lamu	77	120	197			119,641	1,644
Isiolo	91	240	330			152,332	2,169
Mombasa	250	4,495	4,746			1,106,444	4,289
National	13,211	24,440	37,650			42,961,187	876

What does this data tell us about the distribution of spending on health workers prior to devolution? Looking at total spending, counties with provincial/ high volume level 5 (L5) hospitals and Nairobi were some of the highest spenders, though Garissa's spending was lower than the other counties with such facilities. [1] However, when we look at the per capita spending ranking, we find that Garissa ranks more highly and Kakamega is now the lowest among the L5 counties. We also find that several small counties rank highly in per capita: Lamu, Isiolo, Elgeyo Marakwet, and so on.

[1] Mombasa, Garissa, Embu, Machakos, Nyeri, Kiambu, Nakuru, Kakamega, Kisumu, Kisii, and Meru

These patterns are not surprising.   Counties with provincial hospitals (and Nairobi) are regional hubs that serve patients from multiple counties and would therefore have served a larger population than counties without such facilities. Indeed, the per capita costs reported here for regional hubs are biased upward because the population included in the calculation is only that from the county, and does not include people from other counties that use these facilities. On the other hand, smaller counties generally tend to have higher per capita service costs because all hospitals have fixed costs; that is, expenses necessary to operate and provide services. For example, all hospitals need beds, administrators, and health workers to function. Therefore, while a hospital serving 1,000 people is more expensive than one serving 100 people, a hospital serving 50 people may still be nearly as expensive as one serving 100. The data show inequality in spending across counties at the time of devolution: while Mandera and Baringo had similar population, Mandera health spending per capita was a fifth of that in Baringo.

WHAT WAS THE DISTRIBUTION OF PUBLIC SECTOR HEALTH WORKERS IN THE PRE-DEVOLUTION ERA?

For this study, we look at a sample of the types of health workers which we consider vital to a functioning health sector on a day to day basis. Our aim is to learn how workers were distributed as of January 2014, when counties took over the management of human resources for health. The MoH provided data on the staff working in the respective counties at the time the county governments took over their payroll. We look at 10 categories of health workers in our analysis; they are divided into high education and moderate education health workers. The cadres adopted in this paper are general categories consisting of health workers of different job titles but with similar education background. [2] For example, dental officers have a bachelor's degree and continuing higher education and dental technologists have a diploma. The following is a table showing the ten categories of workers we studied.

TABLE 2. CATEGORIES OF PUBLIC SECTOR HEALTH WORKERS

High education public sector health workers	Moderate education public sector health workers
1. Medical officers	1. Clinical officers
2. Dental officers	2. Dental technologists
3. Pharmacists	3. Pharmaceutical technologists
4. Nursing officers	4. Enrolled nurses
5. Medical lab technologists	5. Medical lab technicians

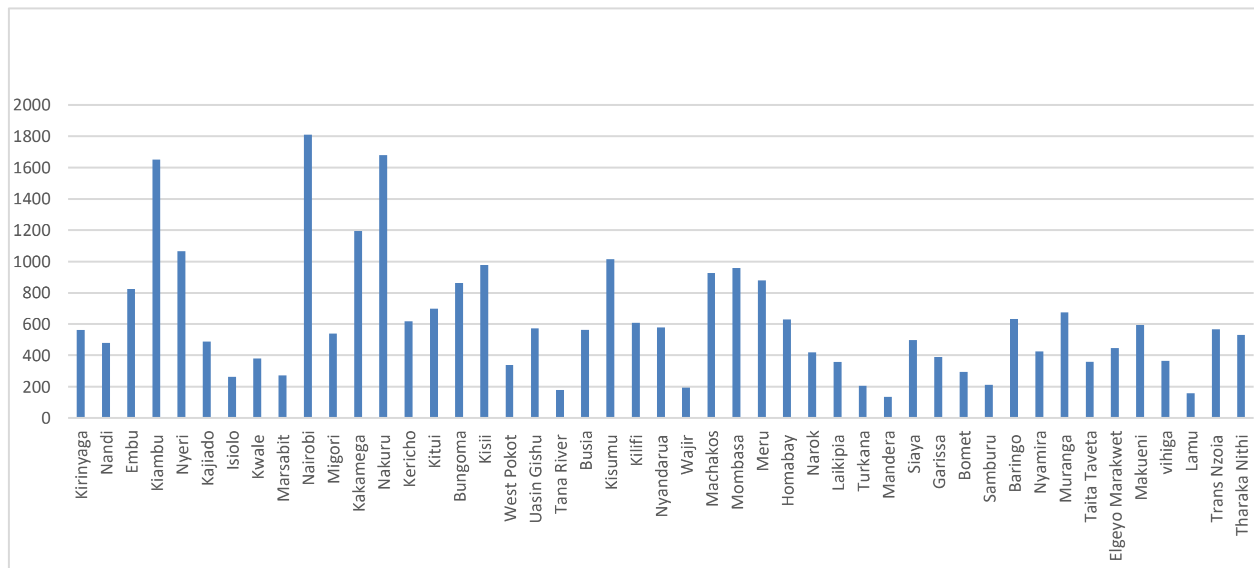
[2] The categories we use are themselves umbrellas for a number of different officers. For example, medical officers (who we have classified as high education here) include those with positions such as director medical services, medical specialist, and medical officer.

Note: We analyzed staff that provide similar but essential services. High education health workers are assumed to have higher skills, and provide a wider range of advanced services. We also assume that, on average, they are more expensive than moderate education workers with similar levels of experience.

According to the MoH, this data only entails those health workers that were already working in the counties. The human resource department at the MoH also indicated that they could not confirm whether all the staff were then absorbed by the counties. There may have been cases where workers had moved to other counties or to the private sector, immediately after counties took over, but this is not reflected in the data. What does this data, tell us about the distribution of health workers in 2014?

Distribution of public-sector health workers (absolute numbers) and health workers per capita (10 categories). In general, and as expected following the financial data above, the health worker data show that those counties that have Level 5 hospitals and Nairobi have more health workers than other counties except for Garissa county. Bungoma, Kitui, Murang'a, Baringo and Homa Bay were the top five counties with the most health workers at the time of devolution after we exclude counties with Level 5 hospitals and Nairobi. Counties with the least number of health workers were Mandera, Lamu, Tana River, Wajir and Turkana

FIGURE 2. ALL PUBLIC SECTOR HEALTH WORKERS ACROSS COUNTIES AS OF DECEMBER 2013 (10 CATEGORIES)

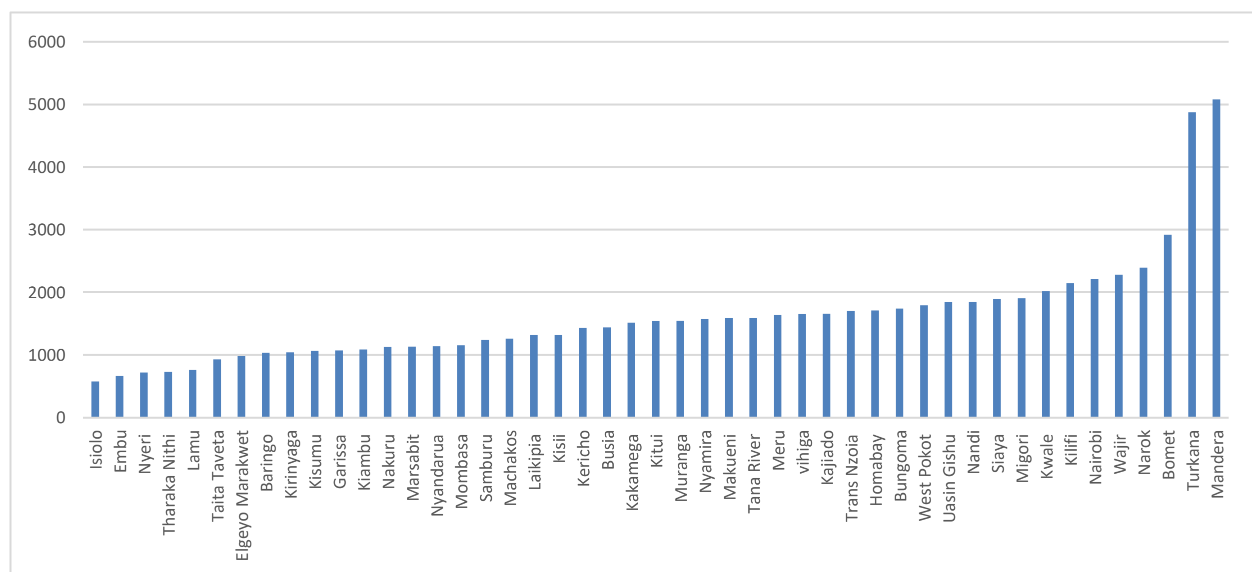


Source: Ministry of Health, 2016

When we look at the number of persons per health worker, the rankings change. Counties with Level 5 hospitals fall and less populous counties, such as Isiolo, Tharaka Nithi, Elgeyo Marakwet, Lamu, Marsabit and Taita Taveta move up. Mandera, Wajir, and Turkana still appear in the bottom five counties. This likely reflects two factors. First, as discussed above, small counties tend to have relatively high per capita services because most services

require capital to deliver, regardless of population size. Second, marginalized counties are marginalized precisely because they lack access to services; this is reflected in low per capita levels of human and other capital. Due to their high population, Kilifi and Bungoma have the largest drop in ranking (falling behind by 23 positions) compared to the ranking in the numbers of health worker. Other counties that fall in comparison to their ranking of absolute number of health workers are: Meru, Kakamega and Homa Bay, and Uasin Gishu. Nonetheless, there are some surprises here, such as the high number of persons per health workers in Nyeri, a moderately large county with a population to worker ratio similarly to Tharaka Nithi, a county with half as many residents.

FIGURE 3. PERSONS PER PUBLIC SECTOR HEALTH WORKER AS OF DECEMBER 2013 (10 CATEGORIES)



Source: Ministry of Health, 2016

Distribution of high and moderate health workers in the country in 2014. Looking at the proportion of high and moderate education health workers as an indication of a county's ability to provide different levels of service, we observed that distribution of workers by skill was unequal While it is not the case that more higher education workers are always needed—it may be more efficient to have fewer such workers for certain services—it is generally the case that a county needs a reasonable share of such higher education workers to provide the full range of services that should be available in the health sector.

At the outset of devolution, most counties had more moderate education health workers than high education health workers. Only seven counties had more health workers in the high education as compared to the moderate education workers: Nairobi, Mombasa, Bomet, Kiambu, Muranga, Nyeri, and Machakos. This group is largely made up of counties with L5 facilities and Nairobi (plus Bomet and Muranga, the only two counties that fell under this

category at the time).[3] However, most counties with L5 hospitals are missing from this list: Kisii, Kisumu, Garissa, Embu, Nakuru, and Kakamega. Samburu, Nyamira, Busia, Homa Bay, and West Pokot have the largest difference in the proportion of high and moderate education health workers. Narok appears both in the ten worst counties in terms of share of high education health workers and in the ten worst counties in ratio of people to health worker. Counties in marginalized areas such as Mandera and Turkana seem to be doing better in terms of balancing the number of high and moderate, though of course they still have fewer workers overall. Table 3 demonstrates the difference in proportion of high and lower cadres of health workers in the top and bottom counties.

TABLE 3. PUBLIC SECTOR HEALTH WORKERS' SKILL MIX (DEC 2013)

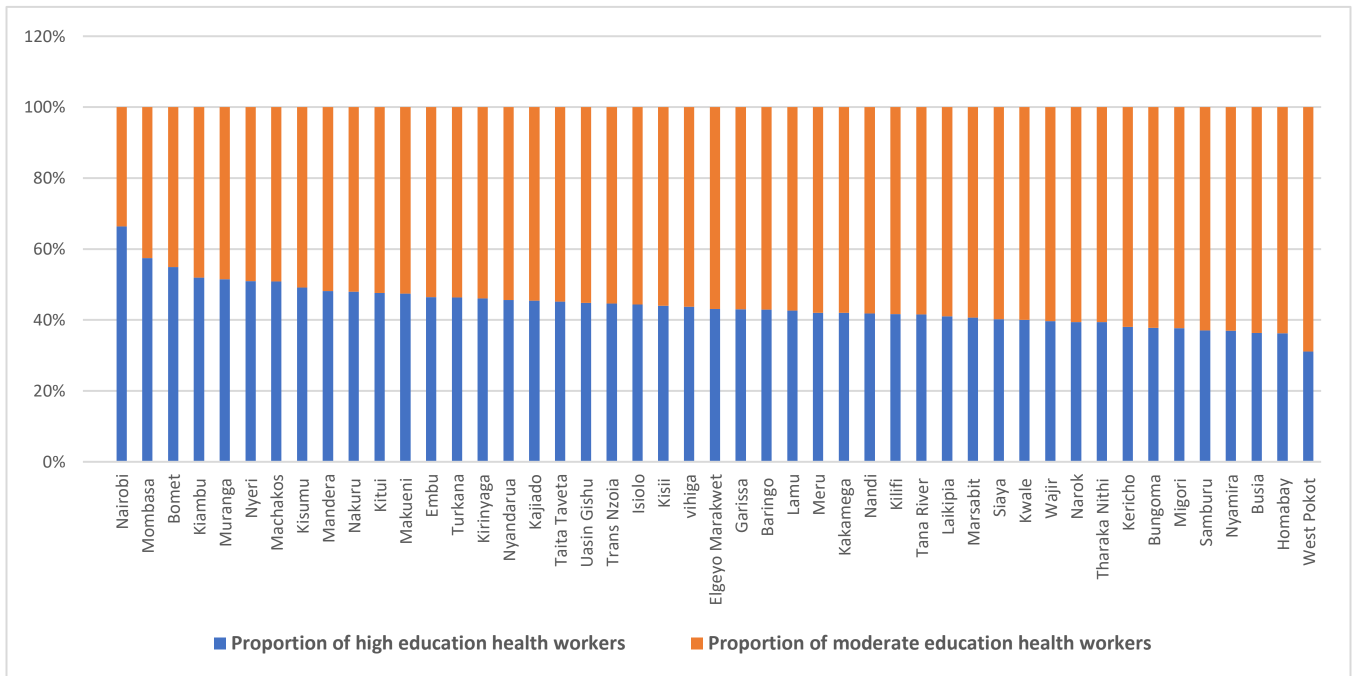
County	Population (2014)	All Health workers	No. of high education health workers (Medical Officers, Pharmacists, Dentists, Nursing officers, Medical Lab Technologist)	No. of moderate education health workers (Clinical Officers, Pharm Techs, Dental Techs, Enrolled Nurses, Medical Lab Technicians)	Percentage of high education health workers of the total health workers	Percentage of moderate education health workers of the total health workers
Nairobi	4,004,400	1,810	1,202	608	66%	34%
Mombasa	1,106,444	958	550	408	57%	43%
Bomet	861,397	295	162	133	55%	45%
Kiambu	1,795,999	1,650	857	793	52%	48%
Muranga	1,042,929	674	347	327	51%	49%
Nyeri	767,560	1,064	542	522	51%	49%
Machakos	1,167,480	926	471	455	51%	49%
West Pokot	605,033	338	105	233	31%	69%
Homabay	1,077,554	630	228	402	36%	64%
Busia	812,036	564	205	359	36%	64%
Nyamira	668,863	425	157	268	37%	63%
Samburu	264,284	213	79	134	37%	63%
Migori	1,025,422	539	203	336	38%	62%
Bungoma	1,500,990	863	326	537	38%	62%
National skill mix	42,961,187	29,072	13,411	15,661	46%	54%

Source: Ministry of Health, 2016

Figure 4 illustrates the ratio of high and moderate education health workers in all counties at the end of 2013

[3] In 2017, Muranga district (level 4) Hospital was upgraded to a Level 5 Hospital.

FIGURE 4. RATIO OF HIGH TO MODERATE EDUCATION PUBLIC SECTOR HEALTH WORKERS IN ALL COUNTIES AT THE END OF 2013 (10 CATEGORIES)



Source: Ministry of Health, 2016

Lumping these categories together hides further inequalities that were present in the counties prior to devolution. There are extreme instances where some counties lacked health workers completely or only had few high education health workers serving the whole county. In some cases, one would assume the county relied on moderate education health workers where there were few or high education health workers. However, some counties did not have many moderate education workers either. This is true especially for medical specialists, dental officers, and pharmacists. Samburu, Mandera, Wajir and Tana River counties had no dental workers. Samburu and Mandera had the least number of pharmacists. Below is a table showing some of these extreme cases for dentists and pharmacists.

TABLE 4. COUNTIES WITH EXTREME CASE OF INEQUALITIES IN HIGH CADRE WORKERS (PRE-DEVOLUTION)

Counties	Number of high education health workers	Number of corresponding moderate education health worker	Number of high education health workers	Number of corresponding moderate education health worker
	Dentist (December 2013)	*Dental technologist (December 2013)*	*Pharmacist (December 2013)*	*Pharmaceutical technologist (December 2013)*
Samburu	0	0	1	3
Mandera	0	0	1	3
Wajir	0	0	1	6
Tana River	0	0	3	4
Turkana	0	1	2	7
Kwale	0	1	6	5
Bomet	0	2	2	4
Taita Taveta	0	3	1	6
West Pokot	2	2	1	6
Marsabit	1	0	1	7

Population and distribution of counties public sector health workers. There is a strong relationship between population and the distribution of health workers (correlation 0.82).[4] The correlation coefficient is much higher in the case of high education health workers (0.85) than in lower education health workers (0.71). We divided the counties into quartiles to examine the situation in 2014. The population quartiles and the average number of high and moderate education health workers were as follows:

[4] The correlation was based on numbers of health workers in counties against the population in each of the counties.

TABLE 5. AVERAGE NUMBER OF PUBLIC-SECTOR HEALTH WORKERS IN POPULATION QUARTILES

Quartile	Counties	Average population	Average number of all health workers	Average number of high education health workers	Average number of moderate education health workers
Quartile 1	Lamu, Isiolo, Samburu, Tana River, Marsabit, Taita Taveta, Tharaka Nithi, Garissa, Elgeyo Marakwet, Wajir, Laikipia, Embu	347,162	349	149	200
Quartile 2	Kirinyaga, West Pokot, Vihiga, Baringo, Nyandarua, Nyamira, Mandera, Kwale, Nyeri, Kajiado, Busia, Bomet	706,866	486	214	272
Quartile 3	Kericho, Nandi, Makueni, Siaya, Trans Nzoia, Narok, Turkana, Migori, Muranga Uasin Gishu, Kitui, Homabay	992,781	541	233	308
Quartile 4	Kisumu, Mombasa, Machakos, Kisii, Kilifi, Meru, Bungoma, Kiambu, Kakamega, Nakuru, Nairobi	1,672,681	1142	570	573

Beyond population: other factors affecting the need for health workers. Population is an important driver of the need for health workers, but it is not the only factor to consider. County area and population density may have an impact on the number of health workers needed in a county. Prior to devolution, there was an inverse correlation between the number of health workers and the area of counties (-0.44). This suggests that larger counties had fewer health workers than smaller counties. Mandera, Tana River, Wajir, Turkana, Samburu, Isiolo, and Marsabit, which are shown as marginalized counties in Table 7, fall in the top ten largest counties by area as well as the top ten counties with the least number of health workers.

There is some correlation between the number of health workers and the population density (0.52). We observe that there were counties with similar population but significant differences in their area. While this might be expected to lead to differences in the number of health workers in these counties, this is not the case. For example, Lamu and Isiolo have similar populations, among the lowest of all counties (119,641 and 152,332 respectively), but the land mass of Isiolo is four times the area of Lamu. While both counties have a small population, Isiolo's population is thinly spread across a larger area, making it more difficult for residents to access health workers. Consequently, Isiolo may require more health workers than Lamu to ensure the sparsely distributed population still has access to health services. In some instances, Lamu had more health workers than Isiolo, such as in the case of dental officers and pharmacists. Both Nyandarua and Nyamira have similar populations, but Nyandarua's land area is four times that of Nyamira. Still, both counties had only one dentist in 2014. Large counties, such as Marsabit and Turkana, have a thinly spread population and, like Isiolo, may need more health workers than their population numbers alone suggest.

While data restrictions make it difficult to investigate these challenges further, we can divide the counties into quartiles by population and study range of areas per health worker. From this data, we can see there were

significant differences among the counties, leading to variance in the area to be covered by a single health worker in each county. For example, while Wajir and Elgeyo Marakwet (EMC) have a similar population (436,631 and 442,371 respectively), the km^2 per health worker is 7 km^2 in EMC and 292 km^2 in Wajir. Table 6 shows the range in area per health worker in the same population quartiles above.

TABLE 6. RANGE OF AREA (IN KM^2) PER PUBLIC-SECTOR HEALTH WORKER IN POPULATION QUARTILES

Quartile	**Counties**	**Average population**	**Range of county area in Km^2**	**Range of area in Km^2 per health worker**
Quartile 1	Lamu, Isiolo, Samburu, Tana River, Marsabit, Taita Taveta, Tharaka Nithi, Garissa, Elgeyo Marakwet, Wajir, Laikipia, Embu	347,162	2,639 km^2 - 309,557 km^2	5 km^2 - 292 km^2
Quartile 2	Kirinyaga, West Pokot, Vihiga, Baringo, Nyandarua, Nyamira, Mandera, Kwale, Nyeri, Kajiado, Busia, Bomet	706,866	531 km^2 - 25,992 km^2	1 km^2 - 193 km^2
Quartile 4	Kisumu, Mombasa, Machakos, Kisii, Kilifi, Meru, Bungoma, Kiambu, Kakamega, Nakuru, Nairobi	1,672,681	219 km^2 - 12,610 km^2	0.23 km^2 - 21 km^2
Quartile 3	Kericho, Nandi, Makueni, Siaya, Trans Nzoia, Narok, Turkana, Migori, Muranga Uasin Gishu, Kitui, Homa Bay	992,781	2441 km^2 - 68,680 km^2	4 km^2 - 332 km^2

Note: Counties with the largest area in km^2 per health worker are marked in red.

MARGINALIZED COUNTIES BASED ON VARIOUS PARAMETERS

At the time of devolution there were some marginalized counties regarding the deviations in spending per capita, numbers of health workers, skill mix of health workers, and the area per health worker. Table 7 illustrates some of the counties that were marginalized based on these parameters. In the next section, we look at the post-devolution changes in our sample counties.

TABLE 7. MARGINALIZED COUNTIES

Parameter (pre-devolution)	Marginalized counties
Per capita spending (counties with the lowest per capita spending) (bottom five)	Mandera, Turkana, Bomet, Homa Bay, and Narok
Persons per health worker (counties with the highest number of persons per health worker) (bottom five)	Wajir, Narok, Bomet, Turkana, and Mandera
Proportion of high cadre to low cadres' health workers (counties with the least proportion of high education health workers) (bottom five)	West Pokot, Homa Bay, Busia, Nyamira, and Samburu
Counties with Level 5 facilities with the lowest ratio of high to moderate education health workers	Garissa and Meru
Counties with extreme lack of categories of health workers	Samburu and Mandera
Counties with largest area (Km^2) per health worker	Mandera, Tana river, Marsabit, Wajir and Turkana

2.2 POST DEVOLUTION PERIOD

It has been estimated that over half (50% - 70%) of the county workforce is in the health sector.[5] Counties continue to increase spending each year on health; this expenditure is often geared toward improving access to quality health care, including deliberate steps to attract and retain health workers. But, due to the rising wage bill, county budgets indicate that the cost of running their health departments has been increasing. In Elgeyo Marakwet for example, the average increase in budget allocation to the health sector has been 5 percent from previous budgets.[6] As these budgets continue to grow, how exactly are counties making efforts to address their need for more and better health workers?

CHANGES IN NUMBER AND SKILL MIX OF HEALTH WORKERS IN 2017

There is evidence that the number and skill mix of health workers under the county governments is becoming more equitable, though data for all counties on health workers is not available. We studied a sample of seven counties for which data was available; analysis of data on the 10 categories of the public-sector health workers shows a median growth of health workers between 2013/14 and 2016/17 was 35 percent. While there are still gaps, Turkana reports an astounding growth of 232 percent in the number of health workers. The growth is varied across counties.

[5] Ministry of Health, *Devolved HRM Policy Guidelines on Human Resources for Health*, February 2015, p.4
[6] Elgeyo Marakwet County, *2016/17 Approved Budget Estimates*, page 82

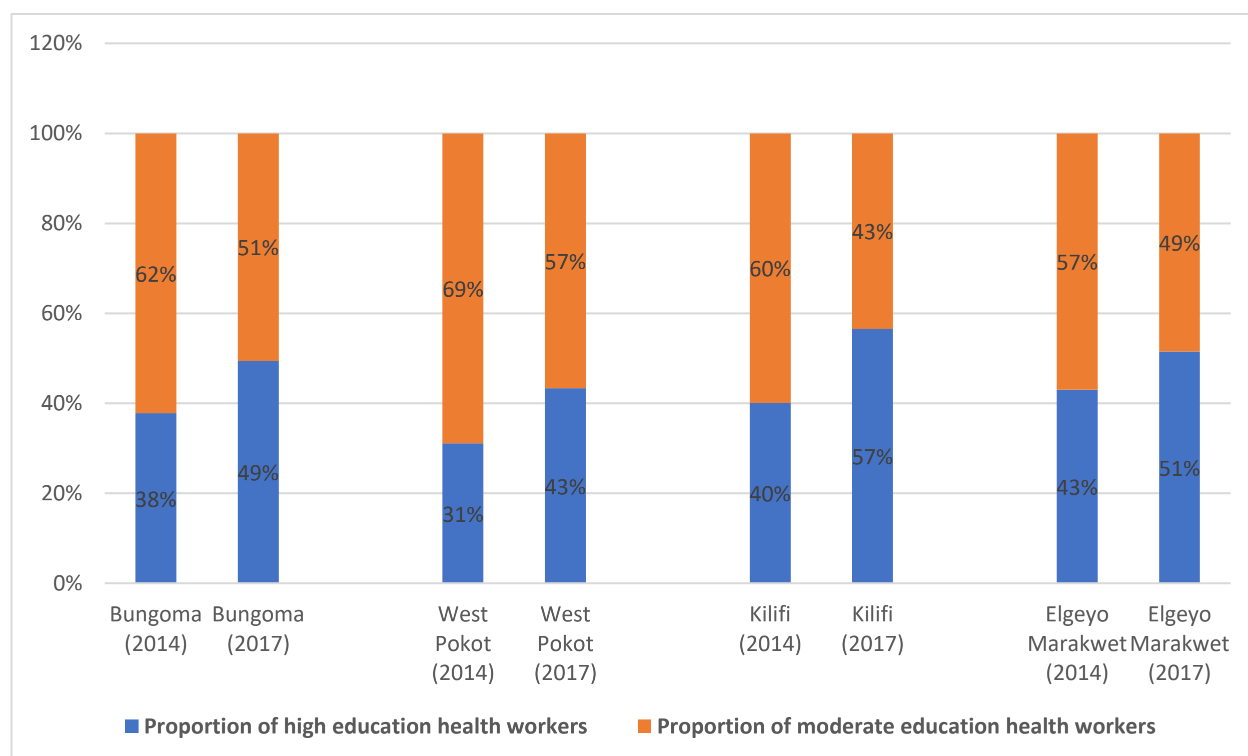
TABLE 8. CHANGE IN NUMBER OF PUBLIC SECTOR HEALTH WORKERS IN SEVEN COUNTIES (FOR THE PERIOD BETWEEN 2013/14 AND 2017)

County	Number of staff (10 categories) 2013/14	Number of staff (10 categories) 2017	Change between 2013 and 2017	% change
Samburu	213	240	27	13%
West Pokot	338	388	50	15%
Baringo	632	776	144	23%
Bungoma	863	1161	298	35%
EMC	446	606	160	36%
Kilifi	610	951	341	56%
Turkana	207	688	481	232%
Median (sample counties)				35%

Source: MOH and individual county health departments

Looking at the skill mix we see that all four counties, which had comparable health workers classification, increased their proportion of high education health workers. Figure 5 shows this.

FIGURE 5. CHANGE IN PROPORTION OF HIGH AND MODERATE EDUCATION HEALTH WORKERS IN BUNGOMA, WEST POKOT, ELGEYO MARAKWET, AND KILIFI



Source: MOH (2014 health workers); county health departments (Baringo, Bungoma and Kilifi), & county budgets (West Pokot).

POLICY INTERVENTIONS FOR HEALTH WORKERS IN COUNTIES

Counties have adopted different strategies to address their needs for more health workers. The following are a few examples of how counties are spending to ensure they attract, employ and retain health workers in their counties:

Increased spending on the health sector, with high spending on compensation to employees Looking at the budget estimates between 2014/15 and 2017/18 from West Pokot, Baringo, EMC, and Busia, we see that the health budget has grown an average of 7 percent. More directly related to health workers, we see that counties have been spending a significant proportion (on average 60 percent) of their health budgets on compensation to employees In the fourth quarter implementation report (for the FY 2016/17) Baringo county's, total expenditure in the last quarter increased significantly from 2015/16 due to increased recurrent expenditure where a high proportion was to personal emoluments for health workers. Table 7 shows the average percentage of health budgets to the total county budgets and the average proportion of this budget going to compensation to employees for three years for a sample of counties in which budget documents are publicly available.

TABLE 9. PERCENTAGE OF HEALTH BUDGET TO TOTAL COUNTY BUDGETS AND PERCENTAGE OF COMPENSATION TO EMPLOYEES TO HEALTH BUDGETS IN SAMPLE COUNTIES (2013-2017)

2014/15							
County	*Total County Expenditure (Ksh. millions)*	*Total Health Expenditure (Ksh. millions)*	*Health budgets recurrent*	*Health budgets development*	*Compensation to health employees allocation (Ksh. millions)*	*% of health budget to total budget*	*% of compensation to employees to health budget*
West Pokot	3,779	923	702	221	451	24%	49%
Busia	6,050	1,501	1,111	390	782	25%	52%
EMC	3,288	895	744	151	708	27%	79%
Average						*25%*	*60%*
2016/17							
West Pokot	5,246	1,363	1,124	239	743	26%	55%
Busia	7,268	1,708	1,355	353	958	24%	56%
EMC	3,886	1,371	1,107	263	983	35%	72%
Baringo	6,521	2,285	1,819	466	1,294	35%	57%
Samburu	4,316	700	538	162	345	16%	49%
Homa Bay	6,732	1,904	1,654	250	1,267	28%	67%
Kakamega	12,761	3,481	3,199	282	2,187	27%	63%
Average						*27%*	*60%*
2017/18							
West Pokot	5,107	1,535	1,194	341	805	30%	52%
Busia	6,979	1,921	1,604	317	1,144	28%	60%
EMC	3,997	1,499	1,110	389	1,051	38%	70%
Baringo	5,642	2,071	1,867	204	1,357	37%	66%
Samburu	4,561	817	669	148	484	18%	59%
Kilifi	11,895	2,790	2,326	464	1,526	23%	55%
Average						*29%*	*60%*

Source: County budget estimates 2014/15, 2016/17 & 2017/18

Note: The information here represents the budget estimates (proposed and approved). County final supplementary budgets and County Budget Review and Outlook Papers, CBROPs (which would give the more accurate figures) are rarely published by county governments. In addition, for CBROPs that are available the information on health department compensation to employees is missing. We were not able to obtain 2015/16 budget for many of the sample counties

Active recruitment of health workers. The West Pokot budget 2016/17 indicates that the county recruited 83 health workers (among them 13 doctors, 57 nurses, seven lab technicians, and two pharmacists). As we see below the seven counties we have studied record significant increase in the number of health workers.

In Samburu, the 2013 -2017 CIDP Review for the department of health services indicates that although the county still has inadequate staff across all categories, it has been able to employ various health workers among them two

dentists, four pharmacists, two surgeons, one gynecologist, 87 nurses, 49 clinical officers, and four pharmacy technologists in the period of review.

In the 2016/17 budget from Homa Bay, it is reported that among the health sector's major achievements in the period 2013/14 to 2015/16 is employing health workers. The county employed 150 nurses, 50 clinical Officers, 20 pharmaceutical technicians, 20 laboratory technicians, and another additional 100 nurses specifically to serve the County General Hospital.

Negotiating unique pay schemes for health workers that are independent from other county schemes: *Better remuneration:* in response to striking health workers, in Bomet the county government negotiated to give them increments to their salary. This payment deal was to take effect in January 2017. Doctors got an increment of 15 percent, clinical officers an increment of 10 percent and nurses, an increment of seven percent.

Staff motivation through promotion, trainings, and awards. Samburu health department reported in the budget estimates FY 2016/17 to have 200 staff promoted to motivate them in staying in the county.

Under the programme of 'health service delivery administration services', Elgeyo Marakwet County budgets for in service training and staff motivation initiatives. In 2014/15 the county budgeted for sponsoring 168 health staff for in service training and offered five annual performance awards to staff. The county also budgeted for staff retreats. In 2016/17 the county budgeted for in-service training for a smaller number of staff. In 2016/17, the county aimed to train 15 staff on commodity management under the pharmacy services sub-programme.

Providing residential facilities and means of transport in hard to reach areas. In West Pokot, the county invested (in the financial years 2015/16 and 2016/17) in building a doctors' plaza that would serve as a residential flat for doctors in the county. This is on appreciation that the county had very few high cadres of health workers at the onset of devolution. The county estimated expenditure towards constructing 12 units was Ksh. 5 million in 2015/16 and Ksh. 2 million for additional works to the plaza in 2016/17.

Samburu county also provides for construction of staff houses in its 2015/16 budget and for motor bikes to enable health workers to travel more easily to remote areas.

In the 2016/17 approved budget, Elgeyo Marakwet budgeted for construction of two staff houses. The budget provides that there would be construction of staff houses at Kamogo Health Centre at the cost of Ksh. 4 million in Embobut ward. The budget also provides for completion of other staff houses attached to health centers across most wards in the county.

Providing a conducive working environment. In EMC, county officials attributed the increase and retention of staff to low stock-outs of commodities and access to better-quality medical equipment. The county also attributed staff increase and retention to infrastructural developments in the county such as better road networks allowing access to hard to reach areas.

Allowing for cross country transfers/ Encouraging health workers from other counties to return to their home counties. In EMC, the county officials indicated that the county tries to recruit and retain health workers by encouraging workers from EMC that are based in other counties to return home.

3. EMERGING ISSUES AND CHALLENGES

The 70/30 recurrent/development share as required by the national PFM Act limits possibilities for staff recruitment.[7] Counties are now free to recruit more health workers to meet their health needs, but they are constrained by the Public Finance Management (PFM) Act from increasing their recurrent budgets, where wages are located. When counties do invest in capital in the sector, they still need to invest in more workers as well. In Samburu, for example, the county invested heavily between 2013/14 and 2016/17 on development projects such as building of health facilities (Laresori), installment of radiological equipment (Baragoi) and installation of a 5-bed dialysis unit (Maralal). The county's plan indicates that it needs to hire specialized health workers, but they are constrained by the 70/ 30 rule. On average, looking at the five county budget estimates for 2017/18 available, recurrent spending is already at 69 percent of the total budget.

There is a tension between national interventions and county autonomy more broadly. In the recent past, health worker strikes concluded with national collective bargaining settlements that make it difficult for counties to adjust pay to their contexts. This contradicts the logic of devolution. Counties are required by these "external arrangements" to use certain pay scales, regardless of the inequalities across counties. However, the national government needs to promote coordination and interventions to reduce imperfection in the labor market and inequalities of limited resources, such as the access to specialized health services.

Intra-county distribution. Counties ought to make sure that the distribution of health workers takes into consideration the inequalities in access of health service within their counties. In Turkana, the county intends to increase the current number of staff by 17 percent in the years 2017-2022. This is to be redistributed to subcounties with Lodwar County Referral Hospital (LCRH) being treated as a separate unit. We see that the county does not intend to distribute these health workers equally within the county. While the parameters for distribution

[7] The PFM Act 2012, requires that at least 30 percent of county annual budgets shall be allocated to development budgets.

are not clear , it seems the needs for health workers in these county subunits are not the same and there is deliberate distribution across the county. We also see that all medical specialists are set to be stationed at LCRH. See the figure below for the proposed distribution of health workers.

FIGURE 6. PROJECTED SUB-COUNTY DISTRIBUTION OF HEALTH WORKERS IN TURKANA COUNTY 2017-2022

CADRE	J/G	POSTS	LCRH	T/C	T/W	T/E	T/S	T/N	KIBISH	LOIMA
Medical Officers (General)	M	15	2	2	2	2	2	2	1	2
Medical Specialists	Q	25	25	0	0	0	0	0	0	0
Clinical Officer (General)	J	100	15	13	14	13	12	12	9	12
Graduate Clinical Officer	K	20	3	3	3	3	2	2	2	2
Clinical Officer (Specialist)	L	155	23	20	22	20	19	19	14	19
Nurse (General)	H	375	56	49	53	49	45	45	34	45
B.Sc. Nurse	K	0	0	0	0	0	0	0	0	0
Dental Nurse	K	10	2	1	1	1	1	1	1	1
Nurse Specialist	K	90	14	12	13	12	11	11	8	11
Pharmacist	M	0	0	0	0	0	0	0	0	0
Pharmacy Specialists	L	5	1	1	1	1	1	1	0	1
Pharm Technologists	J	50	8	7	7	7	6	6	5	6
Dental Officers	M	10	2	1	1	1	1	1	1	1
Dental Specialists	L	5	1	1	1	1	1	1	0	1
Dental Technologists	J	10	2	1	1	1	1	1	1	1
Community Oral Health Officer	H	75	11	10	11	10	9	9	7	9
Rehabilitative staff	H	220	33	29	31	29	26	26	20	26
Plaster Staff	J	5	1	1	1	1	1	1	0	1
Clinical psychologists	K	5	1	1	1	1	1	1	0	1
Diagnostics & Imaging Staff	K	0	0	0	0	0	0	0	0	0
Health Promotion Officers	J	80	12	10	11	10	10	10	7	10
Environmental Health Staff	H	135	20	18	19	18	16	16	12	16
Health Administrative Officers	J	105	16	14	15	14	13	13	9	13
Health Information (ICT)	K	35	5	5	5	5	4	4	3	4
Medical Engineering Staff (Hospital Maintenance)	K	5	1	1	1	1	1	1	0	1
Medical Laboratory Staff	J	95	14	12	13	12	11	11	9	11
Medical Social Worker	H	40	6	5	6	5	5	5	4	5
Nutrition staff	H	75	11	10	11	10	9	9	7	9
Support staff	G	330	50	43	46	43	40	40	30	40
Community Health Service Personnel (CHEWs 24, CHA1, CHO1)	H	60	9	8	8	8	7	7	5	7
Human Resource Officers	K	10	2	1	1	1	1	1	1	1
SUBTOTAL minus CHVs		2145	322	279	300	279	257	257	193	257
Community Health Volunteers (trained)	VOLUNTEERS	980	147	127	137	127	118	118	88	118
Total		3125	469	406	438	406	375	375	281	375

Note: the columns starting from the second column are Job Group, Number of posts, Lodwar Central Referral hospital, Turkana Central, Turkana West, Turkana East, Turkana South, Turkana North, Kibish and Loima.

Need to deliberate on the implications of significant shortages in the human resource for health in counties. We observe that counties are very far from achieving the required number of health workers as per the guidelines set by the *Human Resources for Health Norms and Standards Guidelines for the Health Sector*. Data from Turkana and Samburu shows the public-sector health workers are nine percent and 35 percent workers the total workers required respectively. This shortage points to the need for training of new health workers and cost that counties will need to incur to reach the optimum staff levels.

We also notice that there is heavy reliance on public health workers in counties. For example, in Samburu, the public-sector workers constitute two-thirds (67 percent) of all the health workers in this rural county. Unlike urban counties where residents may fall back on a thriving private sector, most residents here depend on the county government to improve their access to health care.

Deliberations on health policy remains a challenge due to data gaps. For the public and county assemblies to take part in decision making on issues related to health workers, they should have access to adequate information. Data challenges point to lack of a central repository where information on the current workforce, their cost, and county needs are published.[8] In some cases, we obtained data where there was varied classification of health workers. There is need for counties to publish the schemes of services for different categories of health workers. We also lack information on the effectiveness of interventions that counties have taken. Ideally this should be in implementation reports such as the County Budget Review and Outlook Papers. It is unclear how much we can attribute recruitment and retention of workers to the strategies adopted. For example, have the health staff houses have been occupied? By how many health workers?

New bodies under the 2017 Health Act such as the Kenya Health Human Resource Advisory Council and Health Professions Oversight Authority should publish the master register of all practitioners in the counties. The Ministry of Health also still has an obligation to collect information from counties on human resources.

Some counties, such as Busia, West Pokot, and Homa Bay, include the number and skill mix of staff in their annual budget estimates. This makes it easy to track the trend in growth of health workers over the years. In Homa Bay the budget presents further details giving name of the staff establishment together with the cost to each staff. Many other counties do not provide such information. See below a snippet of information in the West Pokot budget in 2017/18.

[8] The data analyzed in this paper was obtained only after months of requests and is only partial.

FIGURE 7. SNIPPET SHOWING PRESENTATION OF STAFF ESTABLISHMENT IN THE WEST POKOT BUDGET ESTIMATES

PART J: Details of Staff Establishment by Organization Structure

SNO	DESIGNATION	JOBGROUP	INPOST
1	Chief Officer (County)	S	1
2	Senior Assistant Director - Medical Service	Q	1
3	Medical Specialist[1]	Q	1
4	Medical Specialist[2]	P	1
5	Assistant Chief Pharmacist	P	1
6	Assistant Director - Medical Services	P	1
7	Assistant Director - Medical Services	P	2
8	Assistant Director - Accounting Services	P	1
9	Principal Registered Clinical Officer[2]	N	1
10	Senior Dental Officer	N	1
11	Senior Medical Officer	N	2
12	Chief Registered Clinical Officer	M	1
13	Dental Officer	M	1
14	Chief Registered Clinical Officer – Anaesthetist	M	1
15	Chief Medical Lab Technologist	M	1
16	Chief Medical Lab Officer	M	1
17	Deputy Chief Pharmaceutical Technologist	M	1
18	Deputy Chief Orthopaedic Technologist	M	1
19	Deputy Chief Medical Engineering Technologi	M	1
20	Chief Radiographer	M	1
21	Chief Assistant Community Health Officer	M	1
22	Medical Officer	M	2
23	Chief Clinical Officer	M	2
24	Deputy Chief Dental Technologist	M	2
25	Assistant Chief Physiotherapist	M	2
26	Medical Officer	M	8
27	Chief Registered Clinical Officer	M	9
28	Chief Registered Nurse	M	9

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Source: West Pokot Programme Based Budget 2017/18

4. CONCLUSION

We have seen that indeed there were significant inequalities at the time of devolution in health spending per capita, county residents per health worker, and skill mix of health workers. Four years on, devolution seems to have brought some positive change: counties are spending on the health sector with intent to attract and retain health workers. But, as counties continue to employ strategies for addressing their needs, it is imperative that challenges and successes are documented and shared to stimulate public debate. Counties can learn from each other about what is effective and what is not in attracting health workers. There are also policy interventions that must be applied in a coordinated manner and a need for some national interventions. Parliament should consider amending the Public Finance Management Act to change the 70/30 rule on recurrent and development expenditure, as it may adversely affect spending in recurrent heavy sectors such as the health. Counties may need to spend more on health workers and other recurrent expenditures to ensure that the highest attainable standard of health is met.