

Influence of Health Insurance on Clinical Decision Making Among Kenyan Doctors in Emergency Care

Abstract: Majority of Kenyans lack health insurance and therefore find it difficult to raise money for health expenditure. Studies elsewhere have shown disadvantage to uninsured individuals in terms of health care accorded to them when compared to those insured, even in provision of lifesaving medical care.

Objective: To examine the extent that clinical decisions on emergency medical care by doctors in Kenya changed given the health insurance status of a patient

Methodology: An online self-administered survey was sent to Kenyan doctors. Alongside demographics of the doctors and the modality of payment of their patients, respondents estimated frequency of decision change in emergency medical cases. The results were compared to the payment modality of their patients.

Results: The completed responses were 20 % of total surveyed. Regarding decision change in delivery of emergency health care, no difference was found between the doctors who attended to uninsured patients and those who attended to insured patients ($p=0.4$).

Conclusion: While clinical decision making of Kenyan doctors is influenced by health insurance, delivery of emergency health care is not influenced by health insurance.

Keywords: Health insurance, Emergency medical care, Clinical decisions

1. Introduction

In the year 2015, the then millennium development goals (MDG) were replaced by the sustainable development goals (SDG). The third SDG is aimed at attaining good health and well-being globally. One of the major ways of achieving that is through offering universal health care (UHC). This has been defined by the world health organisation (WHO) as financial risk protection, access to quality essential health-care services and access to safe, effective, quality and affordable essential medicines and vaccines for all (WHO, 2015).

Kenya has adopted the SDGs and part of its mechanism to achieve UHC is enshrined in the governments big four agenda. Ultimately, Kenyan government is looking at health insurance to achieve UHC for its citizens (GOK, 2017). The government has postulated that if every Kenyan is covered by health insurance, it will be possible for them to seek health care without financial barriers and/or consequences.

The only problem with this model is that majority of Kenyans are without health insurance. Access to health care has been a big limitation in the country and the main reason has been

inability for people to pay for services. These services include both elective and emergency cases. By definition, emergency health care is medical services rendered to patients which if delayed or denied lead to immediate loss of life or impairment. Needless to say, therefore, emergency conditions allow minimal or no time to wait for interventions. That being the case, there is wide body of evidence that clinical decisions are either altered or delayed when patients lack health insurance or are unable to pay. The decision change is in many instances detrimental to the patient.

Ability to pay has almost a direct relationship with possession of insurance. This has been proven in Kenya where insurance possession is almost entirely (90%) in the high-income earners (Zollmann & Ravishankar, 2016). This leaves the vast majority of Kenyans with no or limited ability to pay for health services.

2. The Problem

Evidence drawn from western countries which have an outstanding health insurance system shows that uninsured population suffer poor health outcomes whenever they fall sick. Sadly, even emergency services have been withheld from patients who did not have health insurance. This phenomenon, though, has not extensively been studied in Africa. The available data from African set up seems to be conflicting with one study showing no effect of health insurance (Abuosi, Domfeh, Abor, & Nketiah-Amponsah, 2016) and others showing better outcomes for the insured population (Nguyen, Rajkotia, & Wang, 2016). (Wang, Temsah, & Mallick, 2017)

In Kenya, there is scanty data on association between health insurance and clinical decisions in emergency care. There is however a lot of unsubstantiated reports that patients who needed emergency care have been denied such leading to their death. The basis of denying them is blamed on lack of health insurance and inability to pay otherwise. In the recent past, the Kenyan media was awash with news of a critically ill patient who could not be admitted to several hospital because he lacked insurance (Merab, 2018). This is not an isolated case; many more variations of the same occurrence are raised often. Such cases happen despite a legal requirement that every Kenyan be accorded with the highest medical standards regardless of their ability to pay.

Further afield, data tends to suggest that the risk of mortality from emergencies is higher in the uninsured population (Wilper et al., 2009; Woolhandler & Himmelstein, 2017). All this is tied to the change of clinical decision from the standard of care to other (often cheaper and less effective) alternatives (Meyers et al., 2006). In several cases of trauma, lack of insurance has been found to independently predict failure to rescue (Meyers et al., 2006). In such cases, lack of health insurance is associated with less likelihood of being rescued which eventually leads to poor outcomes.

Since clinical decisions are central to patient care during emergencies, this study looks at whether Kenyan doctors are influenced by health insurance when attending to emergency cases. This comes at a time when there is significant discontent from the public that uninsured patients get poorer services, and in some cases are denied the services altogether.

Since emergencies literally determine whether one dies or lives, this will give insight as to whether uninsured population are likely to be disadvantaged when it comes to getting emergency services.

3. Literature Review

In most settings, whether to take care of a patient in an emergency situation regardless of the patient's ability to pay is both an ethical and a legal issue. In such cases, hospitals will incur hefty expenses while taking care of an emergency case with no assurance of payment if the patient has no health insurance (Okeyo, 2019; Wachira & Martin, 2011). Nevertheless, it is illegal to deny anyone highest standards of care during an emergency (Constitution of Kenya, 2010). Similar laws exist in the USA but these laws have not eliminated care discrepancies. One study targeted African Americans presenting to American hospitals with acute chest pain. The finding was that despite chest pain in a black adult being a serious event (due to the likelihood of it being a heart attack) there were consistent delays in these patients seeking medical intervention. This was loosely associated with their inability to secure health insurance (Smolderen et al., 2010). Smolderen (2010) then concluded that lack of health insurance and financial concerns among those without health insurance were associated with delays in seeking emergency care for acute myocardial infarction (AMI)-a fatal condition which qualifies by all means to be an emergency.

A review of emergency services was conducted to determine how health insurance affected delivery of emergency services. The whole spectrum of trauma emergencies was found to be greatly influenced by insurance status, with deleterious outcomes for the uninsured. Uninsured patients involved in trauma were likely not to be rescued (Bell & Zarzaur, 2013; Joseph et al., 2015). It is not then surprising that the all-cause mortality for uninsured patients involved in trauma is high as averred by (Haas & Goldman, 1994; Haider et al., 2008a; Osler et al., 2015). Associations for these poor outcomes have been linked to delayed investigations, missed interventions all of which depend on a doctor's decision.

Health insurance status has in past researches been shown to influence clinical decision making. An overwhelming majority of them have suggested that the decision change was tending to harm the patient (Hajjaj, Salek, Basra, & Finlay, 2010; McIntosh, Stewart, Forbes-McKay, McCaig, & Cunningham, 2016). As indicated above, such trend has been observed in emergency care of patients. In Kenya, the constitution requires that in the event of an emergency, all Kenyans be provided with the services they may require regardless of their ability or inability to pay (GoK, 2010). Many providers in Kenya have complained that delivery of such services often is not paid for and hence counts as massive losses to the institutions (Merab, 2018). As a result, institutions are unwilling to offer emergency services unless there is some assurance of payment (Wachira & Martin, 2011). Having health insurance means that the institutions will be compensated for their services. This means that they might be motivated to offer services readily to those insured (Jeffrey, 2011).

The foregoing thus underscores the fact that lack of insurance can actually lead to loss of life. This is true for those settings from which the quoted studies were done. Notably, there is a scarcity of regional data to this effect. This is understandable as health insurance has not been a key concern for most African governments. With the growing interest and effort to have universal health care in Kenya, health insurance has taken a foreground and thence making local data more necessary.

4. Methodology

This was a cross-sectional survey which utilized an online questionnaire. It was conducted anonymously to Kenyan doctors registered with the Kenya Medical Association (KMA). All members in the KMA database between August 2018 and October 2018 were invited to take part in the survey. Kenya Medical Association is a professional society that deals with social and welfare issues as well as capacity building for the doctors. Membership is voluntary and open to all medical practitioners registered in the Republic of Kenya upon payment of an annual membership fee. As of the time this study was conducted, the association had a membership of approximately 3,000 member. Those with valid emails totaled 900 and it is to these that the questionnaire was sent.

Purposive convenient sampling was used since only doctors registered with KMA were targeted in the study. The association was chosen due to its ability to reach out to members via email. Emails were preferred in this study since that was the only way to be sure the target recipients responded once. All doctors on the mailing list were included to increase statistical power. All those who responded, and were eligible, were included in the final analysis amounting to a convenient sample. A response rate of about 20%-30% was expected as has been the with previous online surveys among doctors in low income setting (Wright, 2006).

Instrumentation

Data obtained via the questionnaire included demographics of the respondents and the type of practice they were involved in. Respondents were then asked the kind of clientele they served in terms of insurance status. Further, they approximated how often they had had to change their clinical decision both in emergency and non emergency cases. Analysis was then done by stratifying respondents according insurance status and comparing how their responses varied. A chi square test of association was then run to show significance at p value of $p < 0.05$.

5. Results and Discussion

Demographic data

A total of 158 responses were analysed representing 20% of the sampled population. Demographic distribution was largely in congruence with the statistics released by the Kenya Medical Practitioners Board (KMPB) in 2017 (Okeyo, 2017). The only discrepancy was the number of doctors working in public hospitals. According to KMPB, 60% of the doctors work for public hospital but this study found only 30% worked exclusively in the public sector. It is likely that a group of doctors who work in both government and private hospitals have not declared that to the government.

Table 1 Demographic characteristics

Variable	Frequency (%), N=158
Cadre	
Medical Interns	6 (3.8%)
Medical officers	74 (46%)
Residents	32 (20%)
Specialist	46 (29%)
Duration of Practice	
1 month – 1 year	15 (9.5%)
2 years – 5 years	73 (46.2%)
6 years – 10 years	34 (21%)
More than 10 years	36 (22%)
Type of Practice	
Public hospital	48 (30.3%)
Private	34 (21.5%)
Private and Public	57 (36.1%)
Faith based	19 (12.0%)

Health Insurance in Emergency Care

To determine whether health insurance was a consideration in making decisions in emergency situations, respondents rated how often they would change management in emergency services. This was compared to a question that asked about their decision change in non-emergent (but important) clinical decisions. The responses to the important (but non-emergent) situations were used as the control to determine if there was a significant change. A contingency table was then populated as below, and a Chi-square test was run.

Table 2 Frequency of decision change in emergency and non- emergency situations

	Emergency situations (N=128)	Non-emergency situations (N=108)
Infrequent decision change (20% of the times or less)	75	48
Frequent decision change (More than 20% of the times)	53	60
P value	0.03	

The finding of a statistically significant p value means that the two groups are different. The difference is that there was more decision change in non emergent cases than was made in emergencies. This therefore implies that when it came to emergency cases, respondents were less likely to consider insurance status of their clients.

To further quantify the frequency of decision change in view of insurance, respondents estimated how often they had had to change emergency clinical decision based on insurance status of their patients.

A cross-tabulation of insurance status and decision change was done as shown in table 5 below. A statistically insignificant p-value of 0.4 was obtained indicating that the decision change was similar regardless of the insurance status of patients. This strengthens the finding that health insurance was not found to influence clinical decisions in emergency conditions.

Table 3 A Cross-tabulation of decision change in emergency conditions per payment modality

		The frequency of decision in emergency conditions					
		Very frequentl y	More than half	About half the time	Less than 20%	infrequently	N
Modality of payment	OOP	1	2	2	4	24	33
	Insurance	3	7	8	13	42	73
	OOP+ Insurance	0	2	4	7	10	23
	N	4	11	14	24	76	129
P value							0.4

Contrary to previous works that indicate that health insurance influences clinical decision making in emergency conditions (Ferreira et al., 2009; Haider et al., 2008b), this study finds that among the respondents, health insurance status was not an influence in their clinical decisions. While there were still some decision changes that happened in emergency conditions, this change could not be attributed to the insurance status of the patient. This finding comes at a time when health care providers are facing accusations of

preferential treatment of Kenyans who have health insurance (Kubania, 2018). It contributes to a different narrative that insurance status did not influence clinicians in making their decisions. Even when a change was made as is evident from the results, it didn't seem to follow the insurance status.

This study, however, could not find reasons excluding health insurance, that would lead clinicians to change their decision making in an emergency. The scope and structure of the study were not designed to capture other factors likely to influence decision changes in the emergency setting. One possible explanation would be the legal requirement that every Kenyan should receive emergency care regardless of their financial status. It is also likely that this is one case where Kenyan clinicians consider the patients' condition rather than the ability to pay; which was the commonest reason given by respondents on why they changed clinical decisions.

6. Recommendations

Further research on actual outcome measures is recommended since this study looked at influence from the clinicians perspective. A retrospective chart review of emergency cases would further minimise bias and give more insight into the topic.

Given the reassuring nature of the findings, disseminating the information to public, media and clinicians will be helpful to correct any misconception held about whether doctors in Kenya are influenced by insurance.

7. Conclusion

This study finds that health insurance does not influence clinical decisions of Kenyan doctors when dealing with emergency conditions. This seems to deviate from several researches in other regions with established health insurance systems. While this may change as the insurance perspective broadens in the country, this study finds an encouraging trend that should be applauded.

8. References

- Abuosi, A. A., Domfeh, K. A., Abor, J. Y., & Nketiah-Amponsah, E. (2016). Health insurance and quality of care: Comparing perceptions of quality between insured and uninsured patients in Ghana's hospitals. *International Journal for Equity in Health*. <https://doi.org/10.1186/s12939-016-0365-1>
- Bell, T. M., & Zarzaur, B. L. (2013). Insurance status is a predictor of failure to rescue in trauma patients at both safety net and non-safety net hospitals. *Journal of Trauma and Acute Care Surgery*, 75(4), 728–733. <https://doi.org/10.1097/TA.0b013e3182a53aaa>
- Ferreira, G. M. T. de M., Correia, L. C., Reis, H., Ferreira Filho, C. B., Freitas, F., Ferreira, G. M., ... Guimarães, A. C. (2009). Increased mortality and morbidity due to acute myocardial infarction in a public hospital, in Feira de Santana, Bahia. *Arquivos Brasileiros de Cardiologia*, 93(2), 97–104. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/19838485>
- GoK. Constitution of Kenya (2010). Retrieved from <http://www.kenyalaw.org/lex/sublegview.xql?subleg=CAP.253>
- GOK. (2017). *The Big Four-Immediate priorities and actions Specific Priorities*. Retrieved from [https://lookaside.fbsbx.com/file/UHURU%27S BIG FOUR PRIORITIES AND ACTIONS.pdf?token=AWzaiF_wDKbaiME96Bj4PXfJsj9ZaW08YibwFqT7n3kl47LaCSjIRNu_HWVYY0IrlzhdGeeVEopkcqwGRHkTyA6-CVqCyGqdMN9t8l9SwBK-g2QtNfs5ggeF4TnaxmFkoKePijkWfkqmXixjsIL3TbwDV4RsgqNR](https://lookaside.fbsbx.com/file/UHURU%27S%20BIG%20FOUR%20PRIORITIES%20AND%20ACTIONS.pdf?token=AWzaiF_wDKbaiME96Bj4PXfJsj9ZaW08YibwFqT7n3kl47LaCSjIRNu_HWVYY0IrlzhdGeeVEopkcqwGRHkTyA6-CVqCyGqdMN9t8l9SwBK-g2QtNfs5ggeF4TnaxmFkoKePijkWfkqmXixjsIL3TbwDV4RsgqNR)
- Haas, J. S., & Goldman, L. (1994). *Acutely Injured Patients with Trauma in Massachusetts: Differences in Care and Mortality, by Insurance Status*. Retrieved from <https://ajph.aphapublications.org/doi/pdfplus/10.2105/AJPH.84.10.1605>
- Haider, A. H., Chang, D. C., Efron, D. T., Haut, E. R., Crandall, M., & Cornwell, E. E. (2008a). Race and Insurance Status as Risk Factors for Trauma Mortality. *Archives of Surgery*, 143(10), 945. <https://doi.org/10.1001/archsurg.143.10.945>
- Haider, A. H., Chang, D. C., Efron, D. T., Haut, E. R., Crandall, M., & Cornwell, E. E. (2008b). Race and Insurance Status as Risk Factors for Trauma Mortality. *Archives of Surgery*, 143(10), 945. <https://doi.org/10.1001/archsurg.143.10.945>
- Hajjaj, F. M., Salek, M. S., Basra, M. K. A., & Finlay, A. Y. (2010a). Non-clinical influences on clinical decision-making: a major challenge to evidence-based practice. *Journal of the Royal Society of Medicine*, 103(5), 178–187. <https://doi.org/10.1258/jrsm.2010.100104>
- Hajjaj, F. M., Salek, M. S., Basra, M. K. A., & Finlay, A. Y. (2010b). Non-clinical influences on clinical decision-making: A major challenge to evidence-based practice.

- Journal of the Royal Society of Medicine*, 103(5), 178–187.
<https://doi.org/10.1258/jrsm.2010.100104>
- Jeffrey, F. (2011). Do Doctors in America Turn Away the Uninsured? | HuffPost. Retrieved July 31, 2019, from https://www.huffpost.com/entry/do-doctors-in-america-tur_b_478267?guccounter=1
- Joseph, B., Zangbar, B., Khalil, M., Kulvatunyou, N., Haider, A. A., O'keeffe, T., ... Rhee, P. (2015). Factors associated with failure-to-rescue in patients undergoing trauma laparotomy. <https://doi.org/10.1016/j.surg.2015.03.047>
- Kubania, J. (2018). How hospitals exploit insured patients - Daily Nation. *Daily Nation*. Retrieved from <https://www.nation.co.ke/news/How-hospitals-exploit-insured-patients/1056-4599432-7uxg83/index.html>
- McIntosh, T., Stewart, D., Forbes-McKay, K., McCaig, D., & Cunningham, S. (2016). Influences on prescribing decision-making among non-medical prescribers in the United Kingdom: Systematic review. *Family Practice*, 33(6), 572–579. <https://doi.org/10.1093/fampra/cmw085>
- Merab, E. (2018). Sad reality of Kenya's emergency care services. *The Daily Nation*. Retrieved from <https://www.nation.co.ke/news/poor--emergency-healthcare-shocks-experts-and-medics/1056-4533796-4pcky0z/index.html>
- Meyers, D. S., Mishori, R., McCann, J., Delgado, J., O'Malley, A., & Fryer, E. (2006). Primary care physicians' perceptions of the effect of insurance status on clinical decision making. *Annals of Family Medicine*, 4, 399-402 ST-Primary care physicians' perceptions. <https://doi.org/10.1370/afm.574>.INTRODUCTION
- Nguyen, H. T., Rajkotia, Y., & Wang, H. (2016). The financial protection effect of Ghana National Health Insurance Scheme: evidence from a study in two rural districts. *International Journal for Equity in Health*, 10, 4. <https://doi.org/10.1186/1475-9276-10-4>
- Okeyo, V. (2017). Report lays bare Kenya's frail health sector - Daily Nation. *Nation Newspaper*. Retrieved from <https://www.nation.co.ke/news/Kenya-lacks-enough-specialist-doctors/1056-3927146-14wporj/index.html>
- Okeyo, V. (2019). Emergency cases burden a struggling health system - Daily Nation. Retrieved July 30, 2019, from <https://www.nation.co.ke/health/Make-or-break-moment-after-accident/3476990-5214918-kj78rxz/index.html>
- Osler, T., Glance, L. G., Li, W., Buzas, J. S., Wetzel, M. L., & Hosmer, D. W. (2015). Trauma care does not discriminate: The association of race and health insurance with mortality following traumatic injury. *The Journal of Trauma and Acute Care Surgery*, 78(5), 1026–1033. <https://doi.org/10.1097/TA.0000000000000593>
- Smolderen, K., Spertus, J., Nallamothu, B., Krumholz, H., Tang, F., Xiang, Y., ... S.S., R. (2010). Health care insurance, financial concerns in accessing care, and nonelective

- readmissions following acute myocardial infarction. *Jama*, 303(14), 1392–1400. Retrieved from <http://ovidsp.ovid.com/ovidweb.cgi?T=JS&PAGE=reference&D=emed10&NEWS=N&AN=71256540>
- Wachira, B., & Martin, I. B. K. (2011). The state of emergency care in the Republic of Kenya. *African Journal of Emergency Medicine*, 1(4), 160–165. <https://doi.org/10.1016/J.AFJEM.2011.10.008>
- Wang, W., Temsah, G., & Mallick, L. (2017). The impact of health insurance on maternal health care utilization: evidence from Ghana, Indonesia and Rwanda. *Health Policy and Planning*, 32(3), 366. <https://doi.org/10.1093/HEAPOL/CZW135>
- WHO. (2015). What is universal coverage? *WHO*. Retrieved from https://www.who.int/health_financing/universal_coverage_definition/en/
- Wilper, A. P., Woolhandler, S., Lasser, K. E., McCormick, D., Bor, D. H., & Himmelstein, D. U. (2009). Health insurance and mortality in US adults. *American Journal of Public Health*, 99(12), 2289–2295. <https://doi.org/10.2105/AJPH.2008.157685>
- Woolhandler, S., & Himmelstein, D. U. (2017). The Relationship of Health Insurance and Mortality: Is Lack of Insurance Deadly? *Annals of Internal Medicine*, 167(6), 424. <https://doi.org/10.7326/M17-1403>
- Wright, K. B. (2006). Researching Internet-Based Populations: Advantages and Disadvantages of Online Survey Research, Online Questionnaire Authoring Software Packages, and Web Survey Services. *Journal of Computer-Mediated Communication*, 10(3), 00–00. <https://doi.org/10.1111/j.1083-6101.2005.tb00259.x>
- Zollmann, J., & Ravishankar, N. (2016). FSD Kenya financial sector Deepening Struggling to thrive: How Kenya’s low-income families (try to) pay for healthcare. Retrieved from <http://s3-eu-central-1.amazonaws.com/fsd-circle/wp-content/uploads/2016/03/30093042/16-03-22-Struggling-to-Thrive-Report.pdf>