Advance Research Journal of medical and clinical science
Received 2 Nov 2021 | Revised 15 Dec 2021 | Accepted 14 Jan 2022 | Published Online 20 Jan 2022

DOI: https://doi.org/10.15520/arjmcs.v8i1.395
ARJMCS 08 (01), 730–734 (2022)

ISSN (O) 2455-3549

ICV 2020 = 86.28

ARTICLE

Barriers to Compliance W1ith Infection Prevention and Control Guidelines in Health Facilities in Seme Sub-County, Kisumu County, Kenya

Gladys Biwott [1*] | Daniel Onguru [1] | Jane Owenga [1] | Rose Luhai Hellen Ojwang [2]

[1]Jaramogi oginga Odinga University of Science and Technology

[2]Masind Muliro University of Science and Technology

Abstract

Health care workers and patients may acquire infections during pro-vision and acquisition of health services, respectively, due to expo-sure to microorganisms in health care facilities. Studies have shown that compliance with standard infection prevention strategies is low among healthcare service providers. This study investigated the factors influencing compliance with infection prevention and control prac-tices among health care workers, barriers to compliance with these guidelines in Seme Sub County, Kisumu County. Data collection was done by an observational checklist and Key Informant Interviews. Quantitative,data was subjected to content analysis. A total of 109 healthcare workers from all the health care facilities in Seme Sub-County participated in the study. About 20% of the facilities had written IPC policy guidelines. County and Subcounty hospitals and only one health center had IPC committee, while none of the dispensaries had an IPC committee in place. Majority of the HCWs reported a good uptake of IPC domains; hand washing (80.7%), waste segregation (94.5%) and injection safety (84.9%), although upon observation, only a small proportion of healthcare facilities followed the IPC domains. Majority of staff mentioned lacked of training on infection prevention and control practices, and the major barriers to compliance included lack of dissem-ination of guidelines, inadequate equipment and supplies, and ignorance among healthcare workers. County level of healthcare facility was significantly associated with good uptake of handwashing (p=0.04), while nurses were more likely to have good uptake of handwashing and waste segregation compared to medical officers (p= 0.04). The findings in this study provided insight into individual and hospital related factors associated with compliance with standard precautions of infection prevention and control. These findings suggest need for improvement on infection prevention and control within the facilities. It is necessary for the hospital administration to reactivate IPC committee in all major facilities and conduct regular audits and in-service training to enhance good compliance and implementation of IPC. The ministry of health should urgently put up interventions to improve compliance with IPC in all healthcare facilities in Seme subcounty.

Keywords: Infection Prevention and control, Compliance, Healthcare Workers, Barriers

1 | INTRODUCTION

Despite there being more manageable and applicable control methods to infection prevention, the burden of health care associated infections is still high in many settings. Studies suggest that organizations identify and develop IPC programs that are effective, easy to implement and monitor at health facility level (Zucoloto & Martinez, 2017). Some of the components that affect compliance with IPC are; bed occupancy, staffing, workload, and employment of healthcare workers ; availability and access to materials and equipment and optimum ergonomics; appropriate use of guidelines; education and training; auditing; surveillance and feedback; multimodal and multidisciplinary prevention programs that include behavioral change; engagement of champions; and positive organizational culture were the most suggested options (Shah *et al.*, 2015). In the present era of emerging pathogens such as Ebola virus, correct use of personal protective equipment (PPE) is vital to decrease contamination of health care workers and patients. However, current removal practices are not well described. It is known that half of health care workers correctly remove their PPE, and very few remove their PPE in the correct order and dispose of it in the correct location (Zellmer *et al.*, 2015)...Another study found out that there was differences on both newly trained and experienced workers on retention of PPE skills despite the education programs, there is no standard assessment for the competencies developed during the training (Williams & Carnahan, 2013). A study noted barriers to proper PPE use: time-consuming, cumbersomeness, and PPE effectiveness. Despite, being videotaped, contamination occurred in 79.2% of the PPEs (Kang *et al.*, 2017). The misuse of injection has been a major challenge in the previous years. Certain nations such as China still record high injection prescription rates than the recommended standards by WHO (Xiang *et al.*, 2012).

Good hand hygiene is the single most significant approach used to avert health care-associated infections (HAIs); most healthcare workers are aware and knowledgeable of the importance of hand hygiene in the reduction of HAIs but their compliance rates range between 25% and 51%.B (Watson, 2016). However, there is disparities in placement and availability of hand washing requirement in wealthy and poor resource setting because of financial constraints ,despite the fact that communicable diseases such as pneumonia, tuberculosis and diarrheal illnesses are more common in poor areas (Kumar *et al.*, 2017).Healthcare hands has a great load of microbes due to incomplete primary education on handling of hazardous waste generated in all sections of health facilities, therefore it should receive more attention during training exercise (Vieira *et al.*, 2017). Despite the high prevalence of chronic hepatitis B virus (HBV) infection and training on prevention of HBV transmission and safe injection practices among health care workers studies have shown that they had insufficient knowledge on HBV prevention and long-term care (Wang *et al.*, 2016). Ndegwa (2014), highlighted the lack of basic infrastructure as one of the challenges facing infection prevention and control practices in Kenya while (Katama, 2011) reported a wide range of unavailable hand hygiene facilities and other barriers such as workload and unclear lines of communication and expectations for IPC at Kenyatta National Hospital which is the country's biggest referral facility.

2 | METHODOLOGY

This study investigated the factors influencing compliance with infection prevention and control practices among health care workers, the existing infection prevention and control policy guidelines, uptake among healthcare workers and barriers to compliance with these guidelines in Seme Sub County, Kisumu County. Data collection was done by an observational checklist andKey Informant Interviews. A total of 109 healthcare workers from all the health care facilities in Seme Sub-County participated in the

Supplementary information The online version of this article (https://doi.org/10.15520/arjmcs.v8i1.395) contains supplementary material, which is available to authorized users.

Corresponding Author: *Gladys Biwott*
Jaramogi oginga Odinga University of Science and Technology

study.

3 | RESULTS

Barriers to compliance with infection prevention and control strategie

The barriers to compliance with infection prevention and control strategies were assessed through a key informant interview involving six healthcare workers. These were the Sub County Public Health Nurse, Sub County Clinical Officer, Sub County Medical Laboratory Technologist, Medical Superintendent, Kombewa Lab Manager and Sub county Health promotion officer /KOM IPC lead.

Majority of the healthcare staff mentioned lack of training on infection prevention and control practices, inadequate equipment and supplies and ignorance among healthcare workers as some of the major barriers to compliance. This is as explained by some of their responses below:

"Lack of training among the staff on IPC practices." (Sub county Clinical Officer)

"The support staff are not trained on IPC practices doubling up as CHVS and pharmacist in most facilities." (Sub county public health nurse)

"Inadequate supply of PPEs." (Sub county public health nurse)

"No biohazard waste bins e.g. brown for pharmaceutical waste." (Sub county Health promotion officer)

Not all health care workers do hand washing despite having knowledge on importance." (Medical Superintendent –Kombewa County Hospital)

"Ignorance by casual staff despite having PPEs during waste segregation, transportation and at disposal site." (Sub county Health promotion officer)

Another major barrier to compliance with infection prevention and control mentioned by healthcare workers was that peripheral facilities lack of incinerator and placenta pit and poor funding to enhance complete disposal of wastes. The incinerator is only available in Kombewa county hospital. This is as explained by their comments below:

"Transportation of medical waste from peripheral facilities to Kombewa for incineration." (Sub county Medical Laboratory Technologist)

*"Most placenta are disposed in pit latrines due to lack of placenta pits." (*Sub county public health nurse)

"No ash pit to burry incinerated material." (Sub county Health promotion officer)

Another important barrier was inadequate water supply and lack of funding to support infection prevention and control.

"Lack of funding from the county to support incineration and transportation of medical waste from peripheral facilities." (Kombewa –Medical superintendent)

"Erratic water supply especially maternity and pediatric ward." (Kombewa –Medical superintendent)

Lack of dissemination of guidelines to staff and other facilities and overdependence on the partner were also mentioned as major barriers, as captured below:

"The guidelines on IPC are not disseminated to other facilities and the one in Kombewa is kept at the nursing station, most staff are aware but have never read the document." (Kombewa –Medical Superintendent)

"Overdependence on partner to improve the facility." (Kombewa –Medical superintendent)

"The incinerator most of the time has insufficient fuel mostly the hospital depends on partners e.g. WRP." (Kombewa –Medical superintendent)

"The guidelines and policies are kept at matron's office not accessible to other departments though they confuse posters with policies." (Sub county Health promotion officer)

4 | DISCUSSION

This study sought to determine the barriers to compliance with IPC guidelines. Based on results from the key informant interview, lack of training, inadequate equipment and supplies, lack of and inactive IPC committee were some of the barriers to infection prevention and control. Some respondents stated

inadequate water supply and lack of funding to facilitate IPC strategies. These factors have been cited in similar studies (citation). A study conducted in the two referral hospitals in Kenya-MTRH-Eldoret and KNH-Nairobi on the knowledge, attitude and practices of HCWs on management of hazardous healthcare waste found out that safety in handling health-care waste was not incorporated in most of the programs for training the healthcare workers (Nkonge Njagi *et al.*, 2012). For effective infection prevention and control, the county government and hospital management should fully support IPC strategies through provision of adequate resources to peripheral facilities, establishing of functional IPC committees and continuous supervision of health facilities to enhance implementation of the infection prevention and control strategies.

This study had some limitations. The study was cross-sectional in nature, which does not establish the definitive and effect of a relationship between the dependent and independent variables. This was maximized by combining facility-based observation together with healthcare worker interviews from researcher-administered questionnaire. However, this study also had some strengths. This was the first to determine compliance with infection prevention and control guidelines among various levels of healthcare facilities in Seme sub county, Kisumu County. Facility based compliance was measured by direct observation, which has been considered a gold standard to measure compliance by various researchers.

5 | CONCLUSION

There were several barriers to IPC which hindered compliance, these include: lack of training on IPC, inadequate supplies, frequent water shortage and inactive IPC committee. The findings in this study provide insight into individual and hospital related factors associated with compliance with standard precautions of infection prevention and control. These findings suggest need for improvement on infection prevention and control within the facilities.

RECOMMENDATION

The hospital administration in all facilities need to urgently address inadequate supplies of essential items such as water, and PPEs.

REFERENCES

1. Dolan, S. A., Arias, K. M., Felizardo, G., Barnes, S., Kraska, S., Patrick, M., & Bumsted, A. (2016). APIC position paper: Safe injection, infusion, and medication vial practices in health care. *Am J Infect Control, 44*(7), 750-757.

2. Dong, L., Wang, D., Gao, J., & Yan, H. (2011). Doctor's injection prescribing and its correlates in village health clinics across 10 Provinces of Western China. *J Public Health (Oxf), 33*(4), 565-570.

3. Dos Santos, M. A., & Souza Ade, O. (2012). [Knowledge of nurses of the Family Health Strategy on health services waste]. *Rev Bras Enferm, 65*(4), 645-652.

4. El-Shafie, I. F., Mokabel, F. M., & Helmy, F. E. (1995). The relationship between the knowledge of nursing staff and their compliance to universal precautions for prevention of hepatitis B viral infection. *J Egypt Public Health Assoc, 70*(5-6), 523-540.

5. Eljedi, A., & Dalo, S. (2014). Compliance with the national palestinian infection prevention and control protocol at governmental paediatric hospitals in gaza governorates. *Sultan Qaboos Univ Med J, 14*(3), e375-381.

6. Elnour, A. M., Moussa, M. M., El-Borgy, M. D., Fadelella, N. E., & Mahmoud, A. H. (2015). Impacts of health education on knowledge and practice of hospital staff with regard to Healthcare waste management at White Nile State main hospitals, Sudan. *Int J Health Sci (Qassim), 9*(3), 315-331.

7. Fischer, W. A., 2nd, Weber, D., & Wohl, D. A. (2015). Personal Protective Equipment: Protecting Health Care Providers in an Ebola Outbreak. *Clin Ther, 37*(11), 2402-2410.

8. Fung, I. C., Cai, J., Hao, Y., Ying, Y., Chan, B. S., Tse, Z. T., & Fu, K. W. (2015). Global Handwashing Day 2012: a qualitative content analysis of Chinese social media reaction to a health promotion event. *Western Pac Surveill Response J, 6*(3), 34-42.

9. Gichuhi, A., Kamau, S., Nyangena, E., & Otieno-Ayayo, N. (2015). Health Care Workers Adherence to Infection Prevention Practices and Control Measures: A Case of a Level Four District Hospital in Kenya *American Journal of Nursing Science*.

10. Gilmartin, H. M., & Sousa, K. H. (2016). Testing the Quality Health Outcomes Model Applied to Infection Prevention in Hospitals. *Qual Manag Health Care, 25*(3), 149-161.

11. Gould, D. J., Hale, R., Waters, E., & Allen, D. (2016). Promoting health workers' ownership of infection prevention and control: using Normalization Process Theory as an interpretive framework. *J Hosp Infect, 94*(4), 373-380.

12. Gudnadottir, U., Fritz, J., Zerbel, S., Bernardo, A., Sethi, A. K., & Safdar, N. (2013). Reducing health care-associated infections: patients want to be engaged and learn about infection prevention. *Am J Infect Control, 41*(11), 955-958.

13. Gyawali, S., Rathore, D. S., Kc, B., & Shankar, P. R. (2013). Study of status of safe injection practice and knowledge regarding injection safety among primary health care workers in Baglung district, western Nepal. *BMC Int Health Hum Rights, 13*, 3.

14. Gyawali, S., Rathore, D. S., Shankar, P. R., Kc, V. K., Jha, N., & Sharma, D. (2016). Knowledge and Practice on Injection Safety among Primary Health Care Workers in Kaski District, Western Nepal. *Malays J Med Sci, 23*(1), 44-55.

15. Hageman, J. C., Hazim, C., Wilson, K., Malpiedi, P., Gupta, N., Bennett, S., Kolwaite, A., Tumpey, A., Brinsley-Rainisch, K., Christensen, B., Gould, C., Fisher, A., Jhung, M., Hamilton, D., Moran, K., Delaney, L., Dowell, C., Bell, M., Srinivasan, A., Schaefer, M., Fagan, R., Adrien, N., Chea, N., & Park, B. J. (2016). Infection Prevention and Control for Ebola in Health Care Settings - West Africa and United States. *MMWR Suppl, 65*(3), 50-56.

16. Heudorf, U. (2015). [Hygiene and Infection Prevention in Medical Institutions, Kindergartens and Schools - Statutory Basis, Infection Control Practice and Experiences of the Public Health Services]. *Gesundheitswesen, 77*(7), 481-487.

17. Ho, H. J., Poh, B. F., Choudhury, S., Krishnan, P., Ang, B., & Chow, A. (2015). Alcohol handrubbing and chlorhexidine handwashing are equally effective in removing methicillin-resistant Staphylococcus aureus from health care workers' hands: A randomized controlled trial. *Am J Infect Control, 43*(11), 1246-1248.

18. Joshi, H. D., Acharya, T., Ayer, R., Dhakal, P., Karki, K. B., & Dhimal, M. (2017). Health Care Waste Management Practice in Health Care Institutions of Nepal. *J Nepal Health Res Counc, 15*(35), 7-11.

19. Joshi, S. C., Diwan, V., Tamhankar, A. J., Joshi, R., Shah, H., Sharma, M., Pathak, A., Macaden, R., & Stalsby Lundborg, C. (2015). Staff perception on biomedical or health care waste management: a qualitative study in a rural tertiary care hospital in India. *PLoS One, 10*(5), e0128383.

20. Kalong, N. A., & Yusof, M. M. (2013). Understanding waste for lean health information systems: a preliminary review. *Stud Health Technol Inform, 192*, 749-753.

21. Kang, J., O'Donnell, J. M., Colaianne, B., Bircher, N., Ren, D., & Smith, K. J. (2017). Use of personal protective equipment among health care personnel: Results of clinical observations and simulations. *Am J Infect Control, 45*(1), 17-23.

22. Karout, N., & Altuwaijri, S. (2012). Impact of health education on community knowledge, attitudes and behaviour towards solid waste management in Al Ghobeiry, Beirut. *East Mediterr Health J, 18*(7), 777-785.

23. Katama, J. (2011). *Knowledge, attitudes, and practices of hand hygiene among clinical staff at Kenyatta National Hospital Nairobi, Kenya.* . Paper presented at the Infection Prevention Network – Kenya (IPNET-K) Regional Conference Whitesands Resort and Spa, Mombasa-Kenya.

24. Kiernan, M. (2015). Prevention of surgical site infection: compliance is key. *Br J Nurs, 24*(17), 856.

25. Kumar, R., Somrongthong, R., & Shaikh, B. T. (2015). Effectiveness of intensive health-care waste management training model among health professionals at teaching hospitals of Pakistan: a quasi-experimental study. *BMC Health Serv Res, 15*, 81.

26. Kumar, S., Loughnan, L., Luyendijk, R., Hernandez, O., Weinger, M., Arnold, F., & Ram, P. K. (2017). Handwashing in 51 Countries: Analysis of Proxy Measures of Handwashing Behavior in Multiple Indicator Cluster Surveys and Demographic and Health Surveys, 2010-2013. *Am J Trop Med Hyg, 97*(2), 447-459.

27. Liu, H. C., Wu, J., & Li, P. (2013). Assessment of health-care waste disposal methods using a VIKOR-based fuzzy multi-criteria decision making method. *Waste Manag, 33*(12), 2744-2751.

28. M.O.H. (2007b). *National Standards and Guidelines on injection safety and medical waste management*.

29. M.O.H. (2008). *The National Health Care Waste Management Plan*.

30. M.O.H. (2007a). *National Policy on injection safety and medical waste management.*

31. Mitchell, R., Roth, V., Gravel, D., Astrakianakis, G., Bryce, E., Forgie, S., Johnston, L., Taylor, G., Vearncombe, M., & Canadian Nosocomial Infection Surveillance, P. (2013). Are health care workers protected? An observational study of selection and removal of personal protective equipment in Canadian acute care hospitals. *Am J Infect Control, 41*(3), 240-244.

32. MoMS, M. (2015). *National Infection Prevention and Control Guidelines for Healthcare workers.* . Nairobi: : Government of Kenya.

33. Morsi, R. Z., Safa, R., Baroud, S. F., Fawaz, C. N., Farha, J. I., El-Jardali, F., & Chaaya, M. (2017). The protracted waste crisis and physical health of workers in Beirut: a comparative cross-sectional study. *Environ Health, 16*(1), 39.

34. Ndegwa, L. (2014). Assessment of hand hygiene practices and usage of alcohol-based hand sanitizer in three Kenyan hospitals *Infectious Diseases Society of America*.

35. Nikolic, B. (2012). [Trends in use of injection drugs in the health center Novi Sad]. *Med Pregl, 65*(3-4), 142-145.

36. Njagi, N. A., Oloo, M. A., Kithinji, J., & Kithinji, M. J. (2012). Health-care waste incineration and related dangers to public health: case study of the two teaching and referral hospitals in Kenya. *J Community Health, 37*(6).

How to cite this article: G.B., D.O., J.O., R.L.H.O. Barriers to Compliance W1ith Infection Prevention and Control Guidelines in Health Facilities in Seme Sub-County, Kisumu County, Kenya. Advance Research Journal of medical and clinical science. 2022;730−734. https://doi.org/10.15520/arjmcs.v8i1.395