

## DETERMINING CANCER-RELATED PAIN MANAGEMENT PRACTICES BY NURSES AT THE NAKURU COUNTY REFERRAL HOSPITAL

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### Abstract:-

**Background:** More than 70% of cancer patients will experience cancer-related pain in the course of the disease. Nurses have a key role in cancer pain management by accurate assessment, prompt intervention, and adequate evaluation of pain relief measures for better cancer-related pain control. To enhance this, World Health Organization (WHO) developed a 3-step analgesic ladder in 1986 to guide cancer-related pain management worldwide.

**Objective:** To determine cancer-related pain management practices by nurses at the Nakuru County Referral Hospital.

**Methodology:** A descriptive cross-sectional study design was used. The study targeted all nurses working at Nakuru County Referral Hospital; systematic random sampling was used to select the respondents where every 2<sup>nd</sup> nurse was selected. A pre-test was done at the Naivasha County Referral Hospital on 10% (23) of the sample. Data was collected using a semi-structured questionnaire for nurses, and a checklist for nurse managers who were the key informants. Qualitative data was analyzed through thematic content analysis and presented in form of text. Quantitative data was analyzed using Statistical Package for Social Sciences (SPSS) version 20, Ethical clearance was obtained from MKU and Nakuru County Referral Hospital Research and ethics Committees and relevant departments.

**Results:** About 91.2% of the respondents had poor adherence to WHO guideline on cancer-related pain management.

**Conclusion:** The study findings indicate poor adherence to the WHO guideline on cancer-related pain management by nurses and recommends emphasis on adherence to the WHO guideline on cancer-related pain management for effective cancer-related pain control.

## INTRODUCTION

Pain is an unpleasant sensory and emotional experience associated with tissue damage (International Association for Study of Pain, 2012). Approximately 75% of cancer patients live with chronic pain resulting from nociceptive or neuropathic syndromes which represent direct effects of the cancer (Portenoy, 2011).

Most cancer-related pain is due to the underlying cancers (85%), treatment (17%) and comorbidities unrelated to cancer (9%). Cancer-related pain can be acute or chronic, acute pain syndromes are disease-related while chronic pain syndromes are due to direct effects of malignancy or treatments (Fornasari, 2012).

Unmanaged cancer pain has been identified as a global Health Concern (WHO, 2011) that greatly affects patients' daily living activities, emotions and quality of life (Funk et al 2012). Nurses have a key role in cancer pain management by accurate assessment, prompt intervention, adequate evaluation of pain relief measures for better cancer-related pain control, and to work effectively in interdisciplinary health care teams (Pasero & McCaffery, 2011).

In 1986, World Health Organization (WHO) developed guidelines for cancer-related pain management worldwide. This was as a result of widespread misconceptions about treatment of chronic pain using opioids and the risk of addiction. WHO recommends a three-step pain relief ladder based on the intensity of pain and emphasizes the principles of "by the clock, by the mouth, by the ladder, and by the individual" as sufficient for cancer-related pain control.

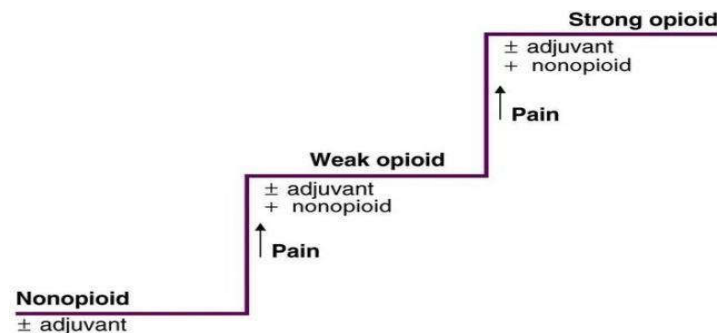


Figure i: Source: WHO (1996) *Cancer Pain Relief, Second Edition*.

**Step 1** is mild pain with intensity of 1–3 on the 0–10 standard; non-steroidal anti-inflammatory drugs and adjuvants are used. If pain persists, step 2 treatments for mild to moderate pain with intensity of 4–6; a combination of medications such as oxycodone, acetaminophen and adjuvants. If pain persists, then step 3 for Moderate to severe pain with intensity of 7–10; potent opioids such as morphine and adjuvants are used. To prevent undertreatment of malignant cancer pain it has become a common practice to begin the treatment of malignant cancer pain with strong opioids, providing immediate relief, and then slowly reducing the type and dosage until pain relief is achieved at a lower level (WHO, 2013).

Despite the publication of the WHO evidence-based guidelines, cancer-related pain is still under treated throughout the world (Caraceni, 2012) driving the need for health professionals' education about best practices (Breuer, 2011).

A study to assess cancer pain levels and treatment at a National Referral Hospital in Western Kenya found that a majority of patients (66%) had undertreated cancer pain (Kristin et al.2013). The WHO three-step pain relief ladder has evolved as an international standard of care for cancer-related pain (Koyyalagunta, 2012). It is estimated to achieve adequate pain relief in up to 90%of cancer patients (WHO, 2011).

An Australian survey of current practice and guideline use in adult cancer pain assessment and management by community health nurses (Philips et al.2013) reported high levels (71%) of adherence to accepted cancer pain management practices in their workplace.

The Kenyan Government emphasizes utilization of the principles of treatment outlined in the WHO cancer pain relief programme when treating pain in patients with cancer (National Guidelines for Cancer Management Kenya, 2013).

Hospital daily reports at the Nakuru County Referral Hospital indicated that 20 patients are admitted with different types of cancer at one given time ( Hospital daily reports) and 80 cancer patients are attended per month on average at the Nakuru Hospice ( Annual data analysis report, 2014)

The report also shows a 6.3% increase in new cancer patients and a 96% increase in Hospital visits from the year 2013. The WHO guideline on cancer-related pain management is available in some wards and no study has been done at the Nakuru County Referral Hospital to ascertain the level of adherence by nurses. This study therefore sought to determine cancer-related pain management practices by nurses at the Nakuru County Referral Hospital.

## MATERIALS AND METHODS

### Study design

A cross-sectional descriptive study design was used to determine the cancer-related pain management practices by nurses at the Nakuru County Referral Hospital.

### Study area

The study was carried out at the Nakuru County Referral Hospital. Nakuru County Referral Hospital is situated in Milimani area of Nakuru County, with a catchment population of about 500,000, bed capacity of 588 and 60 cots, and average monthly bed occupancy of 110%.

Nakuru County has a total Population of 1,603,325; 409,836 Households and covers an area of 7,496.5sq.km. The Population density is 213.9 persq.km and 43% of the population live below the poverty line. The County borders Baringo Central to the North, Kericho to the West, Laikipia to the North East, Nyandarua to the East, Narok to the South West, Kajiado to the South and Kiambu Counties. The county is the main economic and agricultural centre of the Kenyan Rift Valley region.

### ***Population and sample***

The study targeted all nurses at all levels working at the Nakuru County Referral Hospital since their deployment to units is rotational with a total Nursing workforce of 466 Nurses, 3 Nurses have acquired Masters Degrees, BSc in Nursing-23, Diploma in Nursing-212 and 228 Enrolled Nurses.

Nakuru County Referral Hospital was purposively selected as a case study. A sample of 232 respondents was determined using Fishers formula as cited by Mugenda and Mugenda(2003).

From the anticipated population of 466, systematic random sampling was employed to identify the study respondents whereby every 2<sup>nd</sup> client qualified to be a respondent in this study was chosen subject to their informed consent. Eight nurse managers took part in the study as key informants.

### ***Research instruments.***

A semi-structured questionnaire partly adopted from W.H.O guideline on cancer-related pain management and a checklist for nurse managers were used to collect both quantitative and qualitative data. The questionnaire was mainly self-administered while the interview schedule was researcher-administered.

### ***Data quality control***

Four nurses were recruited and trained as research assistants; during the training, they reviewed the instruments item by item, and engaged in practice and mock interviews. For open-ended questions, research assistants were trained to probe respondents and record the responses.

### ***Study variables.***

The dependent variable was Cancer-related pain management practices, the independent variables were; Nurses' social-demographic characteristics, adherence to WHO guideline.

### ***Data management and analysis.***

Analysis of qualitative data was done through content analysis; the findings are presented in form of text. Quantitative data was analyzed using Statistical Package for Social Sciences (SPSS) version 20, with sample weights applied prior to analysis. The demographic and general characteristics were identified using descriptive statistics. Chi-square test was used to determine the prevalence of statistically significant association between the dependent variable and independent variables. The results are presented in narrative, tables, pie charts and bar graphs. Chi square was used to check the levels of relationships between variables and level of significance in the interactions. Measures of central tendencies were used to show the mean and mode.

## **RESULTS**

### ***Respondents' Demographic characteristics***

The response rate for both quantitative respondents and qualitative participants was 88% (204 out of 232 and 7 out of 8) respectively.

About 17.5% (34) of the respondents were up to 30 years of age; 33.5% (65) were between 31-40 years; 29.4% (57) were between 41-50 years and 19.6% (38) were above 50 years (N=194).

85% (171) of the respondents were female while 15% (30) were male (N=201).

The study also sort to understand the respondents' marital status, 204 respondents gave out their marital status, 66.2% (135) were married; 27.5% (56) were single; 4.4% (9) were widowed and 2% (3) were divorced (N=204). On the religious affiliations of the respondents, about 98 % (199) of the respondents were Christian while 2% (4) were Muslim (N=203)

Pertaining to their level of nursing education; the respondents were asked their highest level of nursing education(N=204); 69.6% (142) of the respondents were Kenya Registered Nurses; 19.6% (40) were Kenya Enrolled Community Health Nurses; 10.3% (21) had obtained Bachelor of Science in nursing degree and 0.5% (1) had obtained a Master of Science in nursing degree.

The study also looked at the respondent's years of clinical experience(N=204); 36.3% (74) of the respondents had more than 15 years of experience; 28.9% (59) had between 11 and 15 years of experience; 19.1% (39) had between five and ten years of experience and 15.7% (32) had less than 5 years of experience.

### ***Respondents' adherence to WHO guideline on cancer-related pain management***

Adherence of respondents to WHO guidelines on cancer-related pain management was determined by use of the following questions:- d23- Are you aware of the WHO guidelines on Cancer-related pain management?; d24- If yes, do you use them in management of cancer-related pain?; d25- If yes, how often do you use them when managing cancer-related pain?; d26- Have you been trained on use of the W.H.O guidelines for cancer-related pain management?; d28- Do you find them useful in your practice?; d30- How often do you perform pain assessment in cancer patients?; d31- What method do you use in assessing pain in a cancer patient?; d32- How often do you administer opioid analgesics to patients with cancer-related pain? and d33- What action do you normally take when the first step of treatment fails to relief pain in a cancer patient?

In order to compute adherence to the WHO guideline, each correct response to each of these questions was assigned the value '1' and any other value was assigned '0'. The values from d23, d24, d25, d26, d28, d30, d31, d2 and d33 were

then summed up. The highest value was 9 and the least 0, this was then recorded into three groups of; 6 – 9- good, 4- 5 Average, below 4- Poor. The brief summary shown in Table i indicate that 8.8% (17) had good adherence to WHO guideline on management of cancer related pain; 14.5% (28) had average adherence and 76.7% (148) had poor adherence of the guideline.

**Table i: Adherence to WHO guideline on cancer-related pain management (N=193)**

| Adherence |         |         |         |      |         | Total |         |
|-----------|---------|---------|---------|------|---------|-------|---------|
| Poor      |         | Average |         | Good |         |       |         |
| Freq      | Percent | Freq    | Percent | Freq | Percent | Freq  | Percent |
| 53        | 27.5    | 4       | 2.1     | 5    | 2.6     | 62    | 32.1    |
| 74        | 38.3    | 13      | 6.7     | 2    | 1.0     | 89    | 46.1    |
| 21        | 10.9    | 11      | 5.7     | 10   | 5.2     | 42    | 21.8    |
| 148       | 76.7    | 28      | 14.5    | 17   | 8.8     | 193   | 100.0   |
| .000      |         |         |         |      |         |       |         |
| .266      |         |         |         |      |         |       |         |

*The researcher tested the H<sub>0</sub> stating that there is no relationship between additional formal training and adherence to WHO guidelines on cancer related pain management.*

Table ii below shows a significant relationship between additional formal training on cancer related pain management and adherence to WHO guideline (*P Value = 0.000*).

Based on these findings, the researcher *rejected* the hypothesis

**Table ii : Additional formal training on cancer related pain management and adherence (N= 195)**

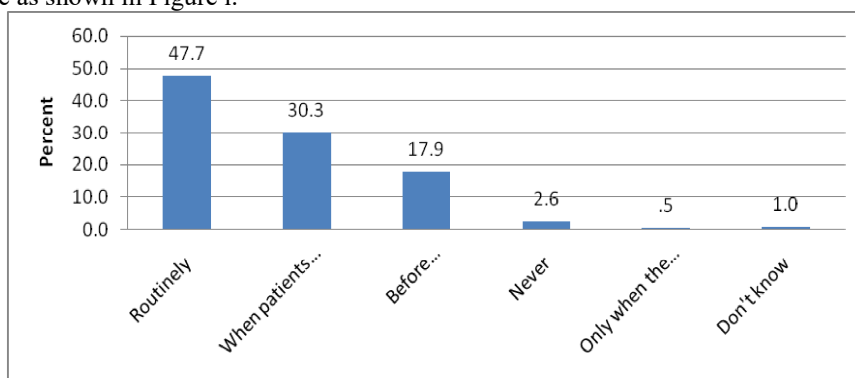
|                              | Value  | df | Asymp. Sig. (2-sided) |
|------------------------------|--------|----|-----------------------|
| Pearson Chi-Square           | 30.164 |    | 2 ,000                |
| Likelihood Ratio             | 25.800 |    | 2 ,000                |
| Linear-by-Linear Association | 28.715 |    | 1 ,000                |
| N of Valid Cases             | 195    |    |                       |

**Awareness of WHO guideline on cancer-related pain management**

The study found out that 25.5% (49) of the nurses interviewed were aware of WHO guidelines on Cancer-related pain management; 10.3% (21) had been trained on use of the W.H.O guideline for cancer-related pain management.

**Frequency of performing pain assessment in cancer patients**

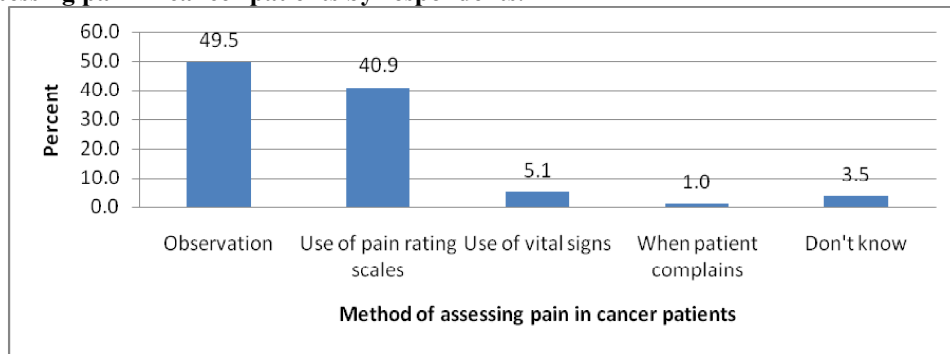
The respondents were asked how frequent they performed pain assessment in cancer patients. Their responses are as shown in Figure i.



**Figure i: Frequency of performing pain assessment in cancer patients (N=195).**

Figure 4.18 shows that 47.7% (93) of the respondents performed pain assessment in cancer patients routinely; 30.3% (59) performed pain assessment when patients complain of pain; 17.9% (35) Performed pain assessment before administration of pain medications.

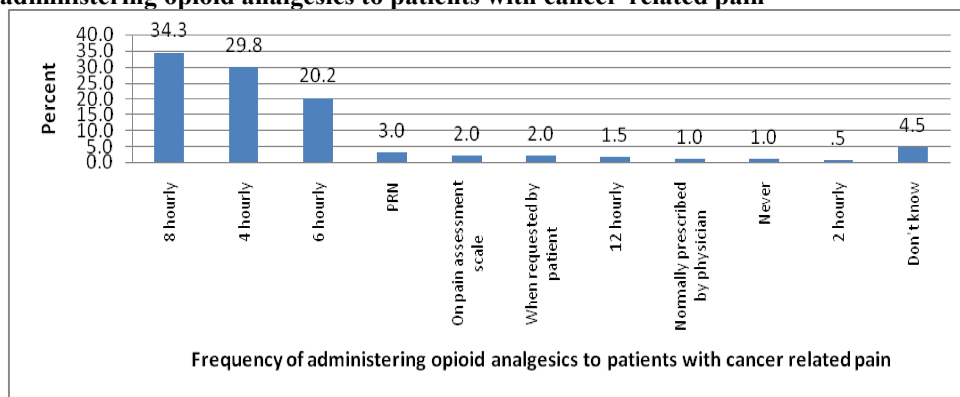
**Method of assessing pain in cancer patients by respondents.**



**Figure 4.19: Method of assessing pain in cancer patients (n=198)**

Almost half 49.5% (98) of the respondents use observation as a method of assessing pain in cancer patients; 40.9 % (81) use pain rating scales; 5.1% (10) use vital signs and 1% (2) assess pain by extent of patient complains as shown in Figure ii.

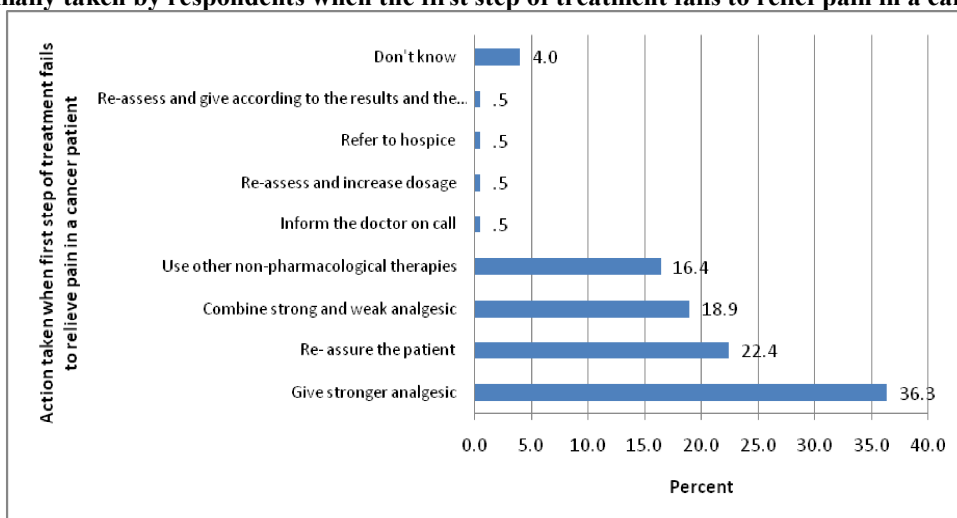
**Frequency of administering opioid analgesics to patients with cancer-related pain**



**Figure iii: Frequency of administering opioid analgesics to patients with cancer-related pain (n=198)**

Figure iii shows that 34.3% (68) of the respondents administer opioid analgesics to patients with cancer related pain 8 hourly; 29.8% (59) 4hourly and 20.2% (40) 6hourly. Other intervals given include PRN, depending on patient's score on pain assessment scale, when requested by patient, 12 hourly, as prescribed by physician and 2 hourly as shown in the figure above.

**Action normally taken by respondents when the first step of treatment fails to relieve pain in a cancer patient.**



**Figure IV Action normally taken by the nurses when the first step of treatment fails to relieve pain in a cancer patient (N=201)**

During times when the first step of treatment fails to relieve pain in cancer patients 36.3% (73) of the nurses will give stronger analgesic; 22.4% (45) will re-assure the patient; 18.9% (38) combine strong and weak analgesic; 16.4% (33) will use other non-pharmacological therapies. Other measures given include informing the doctor on call, re-assessing

and increasing the dosage, referring to hospice and re-assessing and giving medication according to the results and the recommendations in the ladder as shown in Figure 4.21.

*In the qualitative interviews conducted*, it was repeatedly mentioned by the participants that the WHO guideline is not available in all the wards.

The participants pointed out that the hospital does not have a database for cancer patients and mainly rely on hospice data; this they said was limiting their ability to plan for the care of cancer patients since they all agreed hospice data does not capture all cancer patients, however they said the hospital is in the process of establishing a database for cancer patients.

They all agreed that documentation of patients' treatments is done and this includes cancer patients mainly by use of the nursing care plan although they noted that this is general documentation for any other patient. It was also repeatedly mentioned that there was regular consultation with cancer pain management consultants who were mainly doctors and other staff from the Hospice and process improvement strategies for onsite consultations.

## **DISCUSSION OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS**

### **Respondents' Socio-demographic characteristics**

About 85% of the respondents were female while 15% were male. Kenya Population and Housing Census (2009) indicate that 52% of Kenyan population are Female. This also depicts the way society views nursing as being a female profession based on the caring role of women in society.

### **Respondents' adherence to WHO guidelines on cancer-related pain management at Nakuru County Referral Hospital.**

About 8.8% of the respondents adhered to the WHO guideline on cancer-related pain management, while 91.2% had low scores on adherence to WHO guideline on cancer-related pain management.

These findings contradict an Australian survey of current practice and guideline use in adult cancer pain assessment and management by community health nurses (Philips ET al.2013) which reported high levels (71%) of adherence to accepted cancer pain management practices in their workplace. These findings reflect the disparities that exist in cancer-related pain management between developed and developing countries.

Cancer related pain management should be performed routinely, in this study 47.7% of the respondents acknowledged performing pain assessment in cancer patients routinely, the method utilised by most of the respondents was mainly observation (49.5%) and pain rating scales (40.9%).

These findings are similar to those yielded in a study by (Bader et al.2010), who found out that cancer-related pain was common, severe and undertreated for many patients due to poor assessment of pain by nurses and inability to consider all dimensions of pain experience when planning for pain management. Another survey of Nigerian medical providers found that almost 60% pain assessment of oncology patients was not routine, over 10% of respondents did not support pain relief for cancer patients (Ogboli-Nwasor,2013).

The appropriate responses given on how the guidelines can be improved included; experience sharing workshops(14.1%), conducting more research(5.2%), specifying non-pharmacological therapies(1.5%), Review and update guidelines(1.5%).

### **Conclusions**

Findings on adherence to WHO practice guidelines for management of cancer-related pain among the respondents was low, and a significant relationship was evident between knowledge, additional formal training and adherence to WHO guideline, so low scores on adherence has been attributed to factors which may include unawareness of existence of WHO guideline and inadequate formal training.

### **Recommendations**

Emphasis on nurses and other health workers to strictly adhere to WHO guidelines for cancer related pain management through supervision and mentorship by specialists in cancer related pain management. The nurses should be clear on the right medication for each step. There should also be timely reviews on pain levels to be able to administer the right medication. Systematic education and adherence to practice guidelines for management of cancer-related pain should be encouraged to all nurses responsible for care of patients with cancer-related pain. In addition, audits of adherence to cancer-related pain management guidelines should be conducted by hospital continuous quality improvement teams in order to ensure optimal pain relief for cancer patients.

### **Recommendation for further study**

This study has helped to determine the cancer-related pain management by nurses, there is also need to evaluate cancer-related pain management practices among other health professionals since they all work as an inter-disciplinary team.

## **ACKNOWLEDGEMENT.**

The researchers acknowledge the support of Mount Kenya University School of nursing and school of postgraduate studies, medical superintendent, Dr. Etemesi(Ethics and research committee), nursing officer in-charge, research assistants and all the nurses at Nakuru County Referral Hospital who participated in this study.

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## APPENDICES

### Appendix 1: MKU ethical clearance certificate



**Appendix 2: Ethical clearance-Nakuru County Referral Hospital**  
**MINISTRY OF HEALTH**

Telegrams: "PROVMED", NAKURU  
Telephone: Nakuru 051-2215580-90  
When replying please quote  
FAX 051 2216497



PROVINCIAL GENERAL HOSPITAL  
RIFT VALLEY PROVINCE  
P.O. Box 71  
NAKURU.

RII/VOL.I/08

Date 5/3/2015  
To: Alice K. Maranga

Dear Alice K. Maranga

**RE: APPROVAL TO UNDERTAKE RESEARCH AT THE  
RIFT VALLEY PROVINCIAL GENERAL HOSPITAL**

Reference is made to your letter dated 26/2/2015 seeking approval to conduct a research on "Implementation of the WHO guidelines on cancer-related pain management by nurse"

Permission has been granted/~~Not granted~~ for the research. It is hoped that you will adhere to the ethics and standards that relate to research at our institution.

Thank you.

Yours sincerely,

**MEDICAL SUPERINTENDENT**

**CHAIRPERSON  
RESEARCH AND ETHICS COMMITTEE**

