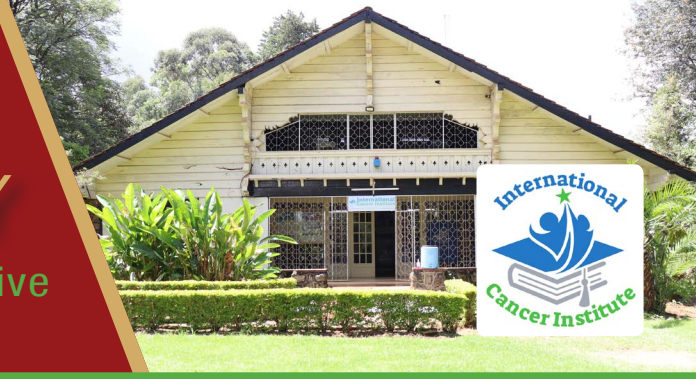
KABARAK UNIVERSITY

Education in Biblical Perspective

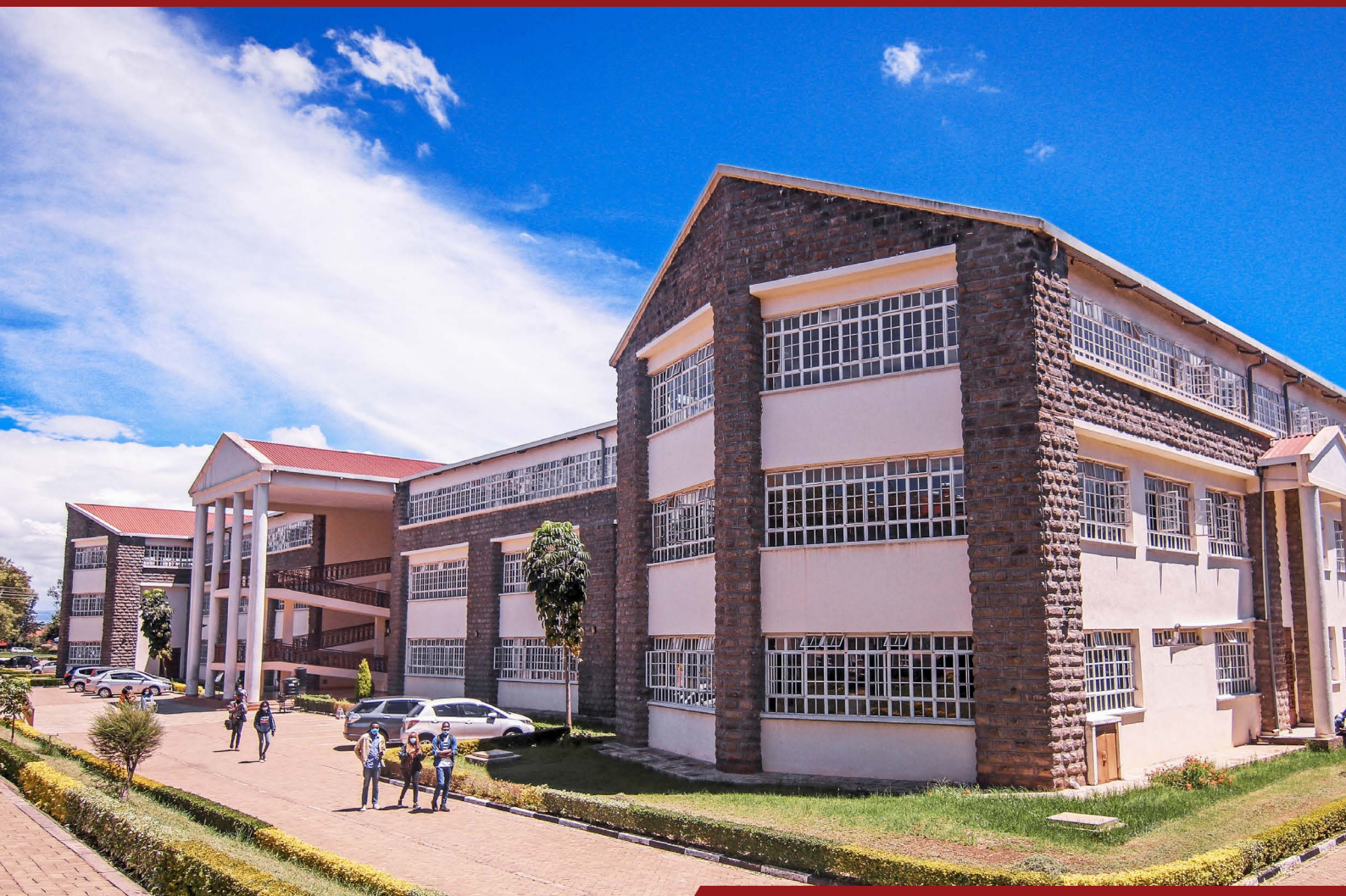


SCHOOL OF PHARMACY

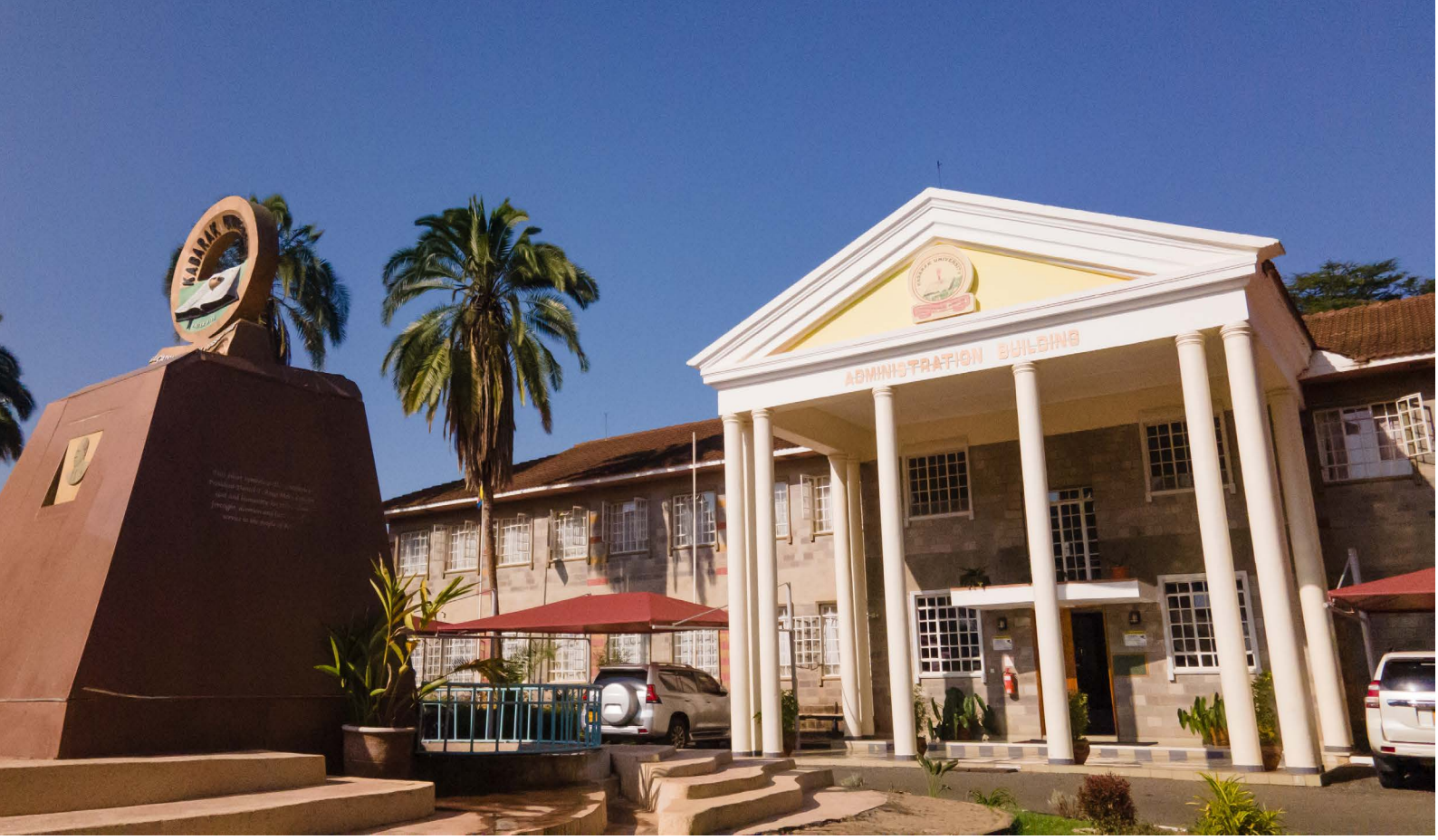
THE 15TH INTERNATIONAL RESEARCH CONFERENCE FOR THE SCHOOL OF PHARMACY & INTERNATIONAL CANCER INSTITUTE

18TH - 19TH SEPTEMBER 2025

PROGRAM AND BOOK OF ABSTRACTS



Kabarak University is ISO 9001:2015 certified.



KABARAK UNIVERSITY | Education in Biblical Perspective

About Us

Kabarak University is a Chartered institution of higher learning that provides holistic Christian-based quality education, training, research and outreach activities for the service of God and humanity. The University was established in the year 2000 by the 2nd President of Kenya, H.E. the Late Hon. Daniel T. Arap Moi, who was also the founding Chancellor. This was as a result of his visionary idea of setting up a Christian University that would meet the demand for higher education in Kenya and offer quality education based on strong moral principles.

Location

Kabarak University Main Campus is located 20 kilometers north of Nakuru City, along the Nakuru-Eldama Ravine highway in a serene, spacious and beautiful environment that makes it ideal for learning. The University has state-of-the art facilities for teaching, learning, research, accommodation, catering, and sports. The facilities are purpose-built to enhance intellectual, physical, and spiritual growth. Nakuru City Campus is located one kilometer from Nakuru CBD, along Prison Road, off Nakuru-Kabarnet Road.

Vision

To become a centre of Academic Excellence founded on Biblical Christian values.

Mission

To provide holistic quality education, research and community outreach based on Biblical Christian values.

Philosophy

To provide quality education in Biblical perspective that transforms lives.

Core Values

- Integrity
- Professionalism
- Patriotism
- Innovativeness
- Being Mindful of Others

KABARAK UNIVERSITY

SCHOOL OF PHARMACY

THE 15TH INTERNATIONAL RESEARCH CONFERENCE FOR THE SCHOOL OF PHARMACY & INTERNATIONAL CANCER INSTITUTE

Conference Theme:

"Advancing Access to Quality Cancer Care and Control"

PROGRAM
AND
BOOK OF ABSTRACTS

SEPTEMBER 2025

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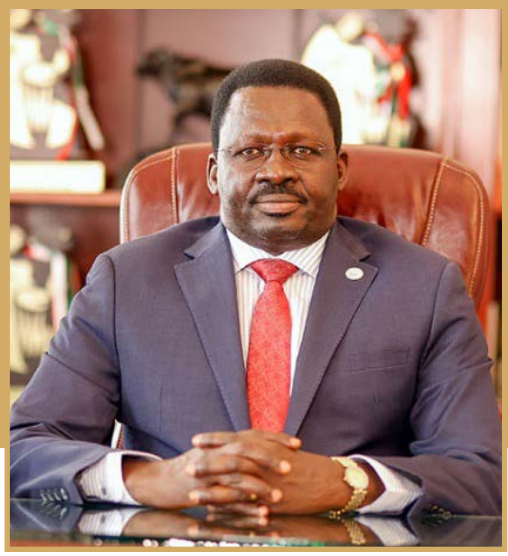

Prof. Henry Kiplangat, PhD, MBS, OGW

VICE CHANCELLOR, KABARAK UNIVERSITY

It is my singular honour to welcome you to Kabarak University and to the **15th International Research** Conference, which the schools in the University have been hosting on various dates this year. Today and tomorrow, it is the School of Pharmacy's turn to host the Research Conference in collaboration with our key partner, the International Cancer Institute. The theme of the conference is **Advancing Access to Quality Cancer Care and Control**.

Distinguished ladies and gentlemen, the Kabarak University School of Pharmacy was established in **2016**. The School is accredited by the Pharmacy and Poisons Board (PPB) to offer Bachelor of Pharmacy program which is the entry level qualification for pharmacy practice in Kenya. The program is also approved by the Commission for University Education.

Since its inception in 2016, the School of Pharmacy has graduated four cohorts of students with a total of **261** graduates from our world class Bachelor of Pharmacy program. Today I am quite pleased to mention that our 261 graduates are serving with distinction in various roles within the pharmacy and broader healthcare sectors in this country.

Distinguished ladies and gentlemen, Kenya has recently been awakened to the grim statistics of rising cancer incidence and mortality. In the year 2022 alone, **44,726** new cancer cases were reported. Some **29,317** individuals died of cancer in Kenya. As a University with the vision of being the centre of academic excellence founded on Biblical Christian values and with "being mindful of others" as one of our core values, we have responded to this public health emergency by developing the **Master of Pharmacy in Oncology pharmacy** as one of our flagship programs. The program is the first of its kind in Kenya with a dedicated focus on advanced pharmaceutical care for oncology patients. In collaboration with the International Cancer Institute, we developed the program through extensive engagement with oncology

sector experts and professionals. As a result, we have a program that produces practice-ready oncology pharmacists for the national and global market.

Distinguished ladies and gentlemen, it is a sad reality that approximately 70 percent of pharmaceutical products consumed in Kenya are imported. The disruption of supply chains during the COVID-19 pandemic highlighted the long-known challenge of reliance on imports for domestic medicines. Factors contributing to the dominance of foreign products include limited innovation capacity, production of similar products by the industry, and inadequate personnel with specialized skills essential in the manufacturing industry. Many companies in this sector currently depend on expatriates to provide the technical expertise necessary for product development and maintenance of quality systems. At Kabarak University, we have taken this challenge and developed the **Master of Pharmacy in Pharmaceutical Manufacturing** program. The graduates from this program will alleviate the shortage of local experts in pharmaceutical manufacturing. This program has been approved by the Commission for University and will be mounted in our School of Pharmacy in January Semester 2026.

As we immerse ourselves in this conference, I encourage all the participants to approach every session and every interaction with an open heart. Let us embrace this remarkable opportunity to learn from experts in the field, to challenge our existing notions, and to push the boundaries of our knowledge. It is through these collaborative exchanges that we can expand our horizons, unlock new possibilities, and drive innovation in pharmacy practice.

To our young and upcoming pharmacists in attendance, I want to convey a special message. You stand at the threshold of an extraordinary journey, one that holds immense possibilities and boundless opportunities. Embrace the challenges that lie ahead, for they are stepping stones on the path to your greatness. Embody the values instilled in you by Kabarak University – integrity, compassion, and excellence – and let them guide your every action. Your role in advancing the practice of pharmacy is pivotal, and I trust that you will rise to the occasion, leaving an indelible mark on the pharmacy profession.

Distinguished ladies and gentlemen, with those few remarks, it is now my pleasure to declare the International Research Conference for the School of Pharmacy and the International Cancer Institute officially opened.

Dr. Titus Suge

DEAN, SCHOOL OF PHARMACY

It gives me great pleasure to welcome you all to the Kabarak University School of Pharmacy and International Cancer Institute Conference, 2025 on "**Advancing Access to Quality Cancer Care and Control".**

Cancer remains one of the greatest health challenges of our time. Yet, it is also an area where we have seen incredible progress—through research, innovation, and teamwork across the health professions.

Pharmacists play a vital role in this fight. From ensuring the safe and effective use of chemotherapy and other treatment modalities, to developing new therapies, to supporting patients through their treatment journeys, pharmacy is at the heart of cancer care.

This conference is about more than sharing knowledge—it is about collaboration, as you can see, several institutions and bodies are represented here. It is an opportunity to learn from each other, to spark new ideas, and to build stronger partnerships that will ultimately benefit patients and families. I encourage you to make the most of the sessions, the discussions, and the networking ahead.

Established in 2016, the School of Pharmacy offers a 5-year Bachelor of Pharmacy program and a Master of Pharmacy in Oncology Pharmacy program. Our approach to teaching and learning involves the use of case-based learning to enhance critical thinking and problem-solving skills.

On behalf of the School of Pharmacy, I thank you for joining us, and I wish you a successful and inspiring conference.

Thank you.

KEYNOTE SPEAKER

Dr. Mansoor Saleh, MD

Founding Chair, Department of Hematology-Oncology, Aga Khan University

Mansoor Saleh, MD received his early education in the Aga Khan School system in East Africa, his medical education at the University of Heidelberg in Germany and conducted his doctoral research at the Max Planck Institute for Medical Research in Heidelberg.

He received his training in internal medicine at the Henry Ford Hospital in Detroit Michigan and clinical and translational research training in Hematology & Oncology at the University of Alabama Comprehensive Cancer Center in Birmingham, Alabama where he was tenured Professor of Medicine & Pathology and Director of the First-in-Human Early Drug Development Program.

His area of research and clinical focus is "targeted therapy of cancer". In January 2020, he joined the Aga Khan University in Nairobi, Kenya as the Founding Chair, Department of Hematology – Oncology and Founding Director - AKU, N Cancer Center.

Dr. Irene Weru

HEAD OF CLINICAL PHARMACY, KENYATTA NATIONAL HOSPITAL, NAIROBI, KENYA

Dr. Irene Weru holds a master's degree in clinical pharmacy with sub-specialization in oncology pharmacy from the University of Nairobi. She has over 20 years' experience working as a specialist oncology pharmacist. She has served in several national, regional and international expert advisory and technical working groups. Dr. Weru has worked at Kenyatta National Hospital since 2003 and is the current head of clinical pharmacy.

Dr. Weru is a member of several professional associations notably the Oncology Pharmacists Society of Kenya (Founding Chair), and the International Society of Oncology Pharmacy Practitioners (ISOPP) where she served as the Secretary between 2021 and April 2025 and is the current Education Committee Chair.

She is also an honorary lecturer at University of Nairobi, School of Pharmacy and adjunct faculty at Kabarak University and provides research and clinical practice supervision to undergraduate and postgraduate students. Irene was awarded the 2025 Helen Mckinnon award by ISOPP for her contribution to oncology pharmacy practice in Kenya and beyond.

KABARAK UNIVERSITY

THE INTERNATIONAL RESEARCH CONFERENCE FOR THE SCHOOL OF PHARMACY & INTERNATIONAL CANCER INSTITUTE

CONFERENCE THEME: "'ADVANCING ACCESS TO QUALITY CANCER CARE AND CONTROL"'

DAY 1 PROGRAM 18TH SEPTEMBER 2025		
TIME	**ACTIVITY**	**PRESENTER**
08:00-09:00 am	Registration & Welcome Tea	*Secretariat*
09:00-09:10 am	National Anthem, East Africa community Anthem, Kabarak University Anthem	MC. Dr. Ogoti, All participants
09:10-09:30 am	Devotion and opening prayer	Rev. Justus Mutuku University Provost
09:30-09:40 am	Dean SOP welcomes participants and invites Director RIO	*Dr. Titus Suge, Dean SOP*
09:40-09:50 am	Executive Director International Cancer Institute (ICI) makes his remarks	*Prof. Fredrick Chite (CEO ICI)*
09:50-10:00 am	DVC (A&R) makes his remarks and invites the Vice Chancellor	Prof. John Ochola DVC (A&R)
10:00-10:20 am	**Vice-Chancellor makes his remarks, officially opens the Conference and invites the Key Note Speaker**	**Prof. Henry Kiplangat, PhD, MBS, OGW**
10:20- 11:05 am	**Keynote Speaker**	**Prof. Mansoor Saleh, Founding Chair, Department of Hematology-Oncology, Aga Khan University**
11:05-11:20 am	Guest Speaker	Dr. Elias Melly, CEO NCI-K
11:20 – 11:50 am	Guest Speaker	Dr. Irene Weru, Head of Clinical Pharmacy KNH
11:50-12:20 pm	Plenary: Q & A	Moderator Dr. Kelvin Manyega
12:20-12:35 pm	Sponsor highlight	GSK
12:35-12:45 pm	Awards	Dr. Rose Obat
12:45-12:55 pm	Vote of Thanks	Dr. Philip Nyawere Director, RIO

TIME	ACTIVITY	PRESENTER
12:55-13:05 pm	Closing Prayer	Rev. Justus Mutuku – University Provost
13:05-13:15 pm	Photo session and Networking	Photographer and all participants
13:15-14:00 pm	Lunch break	All

DAY 1 AFTERNOON BREAKOUT SESSION A

SUBTHEMES:

1. Patient care for solid tumours and oncology supportive care
2. Contemporary issues in pharmacy practice, research and education
3. Advances in medical technology and health informatics for oncology
4. Training for multidisciplinary oncology workforce

TIME	ABSTRACT NO. & TITLE	PRESENTER
14:00-14:10 pm	1) Factors Influencing Adherence to Oral Anticancer Therapy in Breast Cancer Treatment at Kenyatta National Hospital	Cleophas Mayieka *Kabarak University*
14:10-14:20 pm	2) Treatment Outcomes And Predictors of Relative Dose Intensity Among Patients Undergoing Chemotherapy for Colorectal Cancer at Nakuru County Referral Hospital-Oncology Center	Richard Kibe *Kabarak University*
14:20-14:30 pm	3) Molecular Characteristics and Survival Outcomes of Patients with Metastatic Colorectal Cancer at KUTRRH	Emmy Kinya *Kabarak University*
14:30-14:40 pm	4) Predictors of Poor Pain Management in Prostate Cancer Patients With Bone Metastasis: A Study at Kenyatta National Hospital	Peter Namaru *Kabarak University*
14:40-14:50 pm	5) Factors Influencing The Quality of Life Among Metastatic Prostate Cancer Patients on Abiraterone at Kenyatta University Teaching Research and Referal Hospital	Jackson Lubayo *Kabarak University*
14:50-15:00 pm	6) Management and Survival Outcomes Among Prostate Cancer Patients at Nakuru County Referral and Teaching Hospital	Neha Bilakhia *Kabarak University*
15:00-15:10 pm	7) Determinants of Suboptimal Pain Control: An Evaluation of Cancer Pain Management Practices at the Palliative Care Center in MTRH	Eric Karani, *Kabarak University*
15:10-15:30 pm	Q & A Session	Moderator Dr. Wairimu Karaihira

TIME	ABSTRACT NO. & TITLE	PRESENTER
15:30-15:40 pm	8) Knowledge, Attitudes And Practices on Emergency Contraceptive use Among Female Students at Kabarak University	Wincate Njagi *Kabarak University*
15:40-15:50 pm	9) Bibliometric Analysis Current Research Trends and Research networks in Nano Delivery systems in Africa	Harnes Randiga *Stellenbosch University*
15:50-16:00 pm	10) Utility of Antimicrobial Susceptibility Data of Bacterial Pathogens at Nakuru Level 5 Hospital for the Development of an Antibiogram	Nagwala Jeremiah *Kabarak University*
16:00-16:10 pm	11) From Vertical to Integrated Care: Assessing Barriers and Co-Designing Cost-Effective Interventions for ART Dispensing in Outpatient Services. A case of Kirinyaga County, Kenya	Amos Kandagor *Ministry of Health, County Government of Kirinyaga*
16:10-16:20 pm	12) How cutting-edge technology and digital solutions are transforming cancer care in Kenya	Calvin Odhiambo *Clinical Health Network*
16:20-16:30 pm	13) Corticotherapy and COVID-19 Hospitalized Patient Mortality - Impact of Study Design, Temporality and Publication status on Study Results: A Meta-Regression	Nahashon Akunga *Kabarak University*
16:20-16:30 pm	14) The Kabarak University oncology pharmacy preceptorship workshop 2025 – Developing partnerships and dedicated training for robust experiential learning	Kelvin Manyega *Kabarak University*

DAY 1 AFTERNOON BREAKOUT SESSION B

SUBTHEMES

1. Patient care for hematologic malignancies and oncology supportive care
2. Advances in pharmaceutical manufacturing
3. Healthcare financing and policy for oncology
4. Drug development and clinical trials in oncology

TIME	ABSTRACT NO. & TITLE	PRESENTER
14:00-14:10 pm	15) Clinical Characteristics, Management, and Survival Outcomes of Hodgkin Lymphoma Patients at Kenyatta National Hospital	Dorcas Kiprop *Kabarak University*
14:10-14:20 pm	16) Prevalence and Management of Bloodstream Infections among Adult Leukemia Patients Receiving Chemotherapy at Kenyatta National Hospital	Allan Odera *Kabarak University*

TIME	ABSTRACT NO. & TITLE	PRESENTER
14:20-14:30 pm	17) Outcomes of GCSF use Patterns for Prophylaxis of Chemotherapy-Induced Neutropenia in Solid Tumors and Lymphomas: A Narrative Review	Beryl G. Achei *Kabarak University*
14:30-14:40 pm	18) Assessment Of Survival Outcomes And Adverse Drug Reactions Among Patients With Chronic Myeloid Leukemia At Kenyatta National Hospital	Mohamed Yunis *Kabarak University*
14:40-14:50 pm	19) Determinants and Management Patterns of Hematologic Toxicities among Advanced Ovarian Cancer Patients Receiving Carboplatin/Paclitaxel at Moi Teaching and Referral Hospital, Kenya	Benard Kioko *Kabarak University*
14:50-15:00 pm	20) Risk Factors and Management of Venous Thromboembolic Events Among Patients with Gastrointestinal Malignancies at Kenyatta National Hospital	Joy Waithaka *Kabarak University*
15:00-15:20 pm	Q & A Session	Moderator Dr. Thrizza Kiplagat
15:20-15:30 pm	21) Enhancing Technical Capacity Through Integrated Theory and Practice	Sarah Vugigi *Kabarak University*
15:30-15:40 pm	22) An Overview of Market-Approved Novel Delivery Systems for Oncology Therapeutics	Vincent Nyandoro *Kabarak University*
15:40-15:50 pm	23) Dual pathway-targeting Vancomycin-loaded Lipid-Dendrimer hybrid Nanocarrier Therapy for MRSA-induced Sepsis	Vincent Nyandoro *Kabarak University*
15:50-16:00 pm	24) A Rights-Based Assessment of Kenya's Social Health Authority	Chemwetich Janet *Kabarak University*
16:00-16:10 pm	25) Optimizing Investigational Product Management in Oncology Trials: Best Practices in Storage, Accountability, and Personnel Qualification	Daniel Mahiuha *Clinical Research Health Network*
16:10-16:20 pm	26) Identification of Novel Drug Analogues of Phytochemicals for Breast Cancer Treatment: A Computational Approach.	Samuel Masha *Kabarak University*
16:20-16:30 pm	27) In-silico Design and In-vitro Validation of Dual PARP and PI3K Inhibitors to Overcome Resistance in BRCA-Mutated Triple-Negative Breast Cancer	Benard Kioko *Kabarak University*
15:30-16:40 pm	28) Identification of Novel Compounds for Triple-Negative Breast Cancer Through Computational Analysis	Lettycia Marwa *Kabarak University*
16:40-17:00 pm	Q & A Session	Moderator Dr. Thrizza Kiplagat

DAY 2 PROGRAM
19TH SEPTEMBER 2025

DAY 2 MORNING – MASTER CLASS BREAKOUT SESSION

TIME	ACTIVITY	PRESENTER
08:00-09:00 am	Registration	Secretariat
09:00-09:20 am	Devotional prayer & recap of day 1	Dr. Kelvin Manyega
09:20-09:40 am	Guest presentation from National Cancer Control Program (NCCP)	Dr. Joyfrida Chepchumba, Program Officer, NCCP Cancer treatment, palliative care and survivorship
09:40-09:50 am	Q&A Session	Moderator Dr. Wairimu Karaihira
09:50-11:30 sm	Oncology pharmacy master class session 1	Dr. Winnie Mwangi (Oncology Pharmacist KUTRRH), Dr. Irene Weru (Oncology Pharmacist (KNH)
11:30-11:50 am	Q&A Session	Moderator Dr. Wairimu Karaihira
11:50-12:15 pm	Health break	
12:15-13:00 pm	Oncology pharmacy master class session 2	Dr. Winnie Mwangi (Oncology Pharmacist KUTRRH), Dr. Irene Weru (Oncology Pharmacist (KNH)
13:00-13:15 pm	Vote of thanks and closing prayer	Dr. Jackson Lubayo
13:15-13:30 pm	Photo session and Networking	Photographer and all participants
13:30 pm	Lunch break and end of program	All

DAY 2 MORNING – INNOVATION COMPETITION BREAKOUT SESSION

TIME	ACTIVITY	PRESENTER
08:00-09:00 am	Registration	Secretariat
09:00-09:20 am	Devotion, opening prayer and recap of day 1	Dr. Chester Kolek
09:20-09:30 am	Opening remarks	Dr. Andrew Kipkebut — Coordinator, Innovation & Business Incubation

TIME	ACTIVITY	PRESENTER
09:30-10:00 am	Guest Speech	Dr. William Ogallo — Senior Research Scientist, Google
10:00-10:20 am	Q&A / Panel Discussion	Moderator: Allan Baraka
10:20-10:30 am	Sponsor Spotlight: Menengai	Company Representative
10:30-10:40 am	Sponsor Spotlight: ZenDawa	Wilfred Chege, Dr. Victor Achoka,
10:40-10:50 am	Sponsor Spotlight: Pharmaceutical Society of Kenya (PSK)	Dr. Lydia Giturwa, PSK Central Rift Branch
10:50-12:30 pm	**Pitches of Shortlisted Candidates**	**Shortlisted Teams**
10:50-11:00 am	Mammary Protect for breast cancer screening	Abdulnaim Hussein and Co.
11:00-11:10 am	Intelligent prescriber aid tool	Victoria Waithera Gathoni and Co.
11:10-11:20 am	Comprehensive Hospital Management System (HMS)	Jesse Kulei and Co.
11:20-11:30 am	CLARIVIA consulting for Clinical Trials	Oeri Monyangi Agatha and Co.
11:30-11:40 am	ClearRx – Making prescriptions clear	Okore Agnes and Co.
11:40-11:50 am	AfyaSync national digital health system	Peace Kiptoo Towett and Co.
11:50-12:00 pm	SCAN RX App for medication adherence and patient education	Samuel Simiyu and Co.
12:00-12:10 pm	Elimu Afya tool for clinical training and performance assessment	Hope Yego and Co.
12:10-12:20 pm	ClinPro Pharma Solutions for clinical trial recruitment	Racheal Sandra Muhalya and Co.
12:20-12:30 pm	Improving emergency response through AI assisted cloud based database linking clients to providers	Angeline Rebecca George and Co.
12:30-12:50 pm	**Award Ceremony**	**Wilfred Chege, Innovation Coordinator & Sponsors**
12:50-13:10 pm	Vote of thanks and closing prayer	Dr. Vincent Nyandoro
13:10-13:30 pm	Networking & Photo Session	All Participants
13:30 pm	Lunch break and end of program	All Participants

BOOK OF ABSTRACTS

FACTORS INFLUENCING ADHERENCE TO ORAL ANTICANCER THERAPY IN BREAST CANCER TREATMENT AT KENYATTA NATIONAL HOSPITAL

Cleophas Omwega Mayieka
Kabarak University School of Pharmacy
comwega@kabarak.ac.ke

ABSTRACT
Breast cancer is still a big public health issue in Kenya. It represents 23.3 % of new cancer cases among women. Endocrine and target therapy are important anticancer oral therapies for controlling disease. Failure to adhere to therapy results in the recurrence of disease, drug resistance and increased cost of health costs. Adherence to oral anticancer therapy is important. However, there is little information on adherence behavior among Kenyan breast cancer patients. The purpose of this study is to evaluate the factors that affect adherence to oral anticancer therapy in breast cancer patients at Kenyatta National Hospital (KNH). This study will use cross-sectional survey design, coded questionnaires and validated Morisky Medication Adherence Scale to determine the level of adherence. The factors to be investigated include patient attributes like socio demographics, level of education, and therapy related factors like side effects, the treatment schedule. In addition, it will investigate healthcare system characteristics like access to medications, and availability of adherence tools. SPSS and logistic regression models will be used to analyze the factors that will determine adherence. The findings of this study will provide insights into adherence barriers and facilitate the development of targeted interventions to improve adherence rates among breast cancer patients. This research is expected to contribute to oncology care strategies, informing policy and practice to enhance treatment outcomes in Kenya.

TREATMENT OUTCOMES AND PREDICTORS OF RELATIVE DOSE INTENSITY AMONG PATIENTS UNDERGOING CHEMOTHERAPY FOR COLORECTAL CANCER AT NAKURU COUNTY REFERRAL HOSPITAL-ONCOLOGY CENTER.

Richard Muchiri Kibe
Kabarak University School of Pharmacy
rkibe@kabarak.ac.ke

ABSTRACT
Background: Colorectal cancer (CRC) is a growing public health and economic challenge in Kenya, with rising incidence and mortality. Chemotherapy, particularly regimens based on 5-Fluorouracil, remains a key treatment modality and the effectiveness of chemotherapy is usually influenced by the Relative Dose Intensity (RDI), which is the proportion of the intended dose delivered within the planned period of treatment. Achieving optimal Relative Dose Intensity (RDI) enhances treatment

response and improved survival, yet its predictors and outcomes in low-resource settings remain poorly understood and underexplored.

Objective: This study aims to evaluate treatment outcomes and identify predictors of RDI among CRC patients receiving chemotherapy at Nakuru County Referral Hospital between January 2020 and December 2024.

Methods: A retrospective cohort design will be employed, reviewing patients records to extract data on demographics, clinical characteristics, chemotherapy regimens, treatment delays, toxicity, and treatment outcomes. Quantitative data analysis will be conducted using SPSS v26 with logistic regression to assess RDI association. Ethical clearances will be sought from Kabarak University Research Ethics Committee (KUREC) as well as the National Commission for Science, Technology and Innovation (NACOSTI) and the Nakuru County Health Directorate.

Expected outcomes: Finding from this study will inform clinical decision-making, optimize chemotherapy delivery, and contribute to oncology policy development in resource-constrained settings by identifying key barriers to achieving optimal RDI.

MOLECULAR CHARACTERISTICS AND SURVIVAL OUTCOMES OF PATIENTS WITH METASTATIC COLORECTAL CANCER AT KENYATTA UNIVERSITY TEACHING REFERRAL AND RESEARCH HOSPITAL

Emmy Kinya[1], Titus Suge[1], Winnie Mwangi[2], Kelvin Manyega[1]

[1]Kabarak University, Nakuru, Kenya

[2]Kenyatta University Teaching, Referral and Research Hospital, Nairobi, Kenya
emmykinoti@kabarak.ac.ke

ABSTRACT

Background: Colorectal cancer (CRC) remains a major public health concern as the second leading cause of cancer-specific mortality on a global scale. Approximately 50% of those diagnosed with CRC are expected to progress into metastasis, in addition to those who present with de novo metastasis. Metastatic colorectal cancer (mCRC) is thought to be the greatest contributor to CRC-specific deaths. Additionally, mCRC has had dismal positive outcomes with less than 12% of the patients surviving 5 years after diagnosis. The complexities of treating CRC are largely attributed to the heterogeneity of the disease, but recent discoveries of actionable molecular targets have dramatically improved survival outcomes in mCRC. Limited data in Africa have made it difficult to trace the survival outcomes of mCRC patients in this setting. It has been documented that access to molecular tests and targeted therapies is a challenge that may contribute to plummeting survival outcomes in African mCRC patients. The Kenyan scene is no different, with a majority of patients diagnosed in the metastatic or advanced disease stage, making it urgent to characterize mCRC molecularly.

Specific Objectives: This study aims to identify the number of mCRC patients eligible for guideline-recommended molecular diagnostics at KUTRRH; describe the clinical and molecular characteristics

of patients with mCRC; describe conventional, targeted, and immunotherapy treatment offered to patients with mCRC; describe the toxicities experienced by mCRC patients on different treatment modalities; and evaluate physician-reported response to treatment and survival outcomes of patients with mCRC.

Methods: This study will adopt a single-arm retrospective design, targeting mCRC patients. Patient records will provide raw data, collected by an abstraction tool. Treatment outcomes will be assessed as dependent variables, while molecular subtypes shall be independent. Continuous variables will utilize measures of central tendency, while categorical variables will use percentages. Survival analysis will be measured by the Kaplan-Meier graphs.

PREDICTORS OF POOR PAIN MANAGEMENT IN PROSTATE CANCER PATIENTS WITH BONE METASTASIS: A STUDY AT KENYATTA NATIONAL HOSPITAL

Peter N. Namaru
Kabarak University
pnamaru@kabarak.ac.ke

ABSTRACT

Background: Prostate cancer presents a significant global health burden, disproportionately impacting LMICs like Kenya, where most patients present with advanced disease and debilitating bone metastases, leading to severe, often undertreated pain, with a low percentage receiving guideline-recommended analgesia. This inadequacy stems from a complex interplay of systemic barriers, including restrictive opioid policies, clinician hesitancy, and fragmented palliative care, alongside patient-level socioeconomic factors such as prohibitive costs and cultural stigma. Existing research often lacks comprehensive, context-specific investigations into these multifactorial determinants within resource-limited settings.

Objectives: This study aims to precisely identify the clinical, socioeconomic, and systemic determinants of inadequate pain management among prostate cancer patients with bone metastases at Kenyatta National Hospital (KNH).

Methods: Utilizing a cross-sectional design, the research will recruit adult male patients from KNH's oncology and palliative care clinics via systematic random sampling. Data will be collected through retrospective chart and pharmacy log reviews, structured patient questionnaires, clinician surveys, and hospital protocol audits. The anticipated outcomes include empirical evidence delineating specific predictors of inadequate pain management, which will inform actionable policy reforms, context-appropriate clinical protocol development, and targeted capacity-building initiatives, ultimately enhancing equitable palliative care access in Kenya and aligning local practices with global standards in oncology within LMICs.

FACTORS INFLUENCING THE QUALITY OF LIFE AMONG METASTATIC PROSTATE CANCER PATIENTS ON ABIRATERONE AT KENYATTA UNIVERSITY TEACHING RESEARCH AND REFERAL HOSPITAL

Jackson Lubayo Onguko
Kabarak University School of pharmacy
jonguko@kabarak.ac.ke

ABSTRACT

Background: Prostate cancer is a major cause of cancer morbidity and mortality among men globally and is the leading cause of cancer-related deaths in Kenyan men. In Kenya majority of prostate cancer cases are diagnosed in the advanced setting, leading to a poorer health-related quality of life (HRQoL) and a high disease burden. Abiraterone inhibits cytochrome 17A1, crucial in androgen production in the testes, adrenal glands, and tumor cells, reducing levels of testosterone, a key driver of tumor growth. Abiraterone offers improved survival benefits even in metastatic castrate resistant prostate cancer, but its adverse effects impact HRQoL. Abiraterone is extensively used in clinical practice, but there continues to be limited data on its impact on HRQoL in Kenyan patients.

Objective: This study looks to assess the factors that influence HRQoL among metastatic prostate cancer patients taking abiraterone at Kenyatta University Teaching, Research and Referral Hospital (KUTRRH).

Methodology: This will be a cross-sectional study carried out at KUTRRH, a major tertiary referral hospital located along the northern bypass in Nairobi, serving a large, diverse clientele. Adult patients diagnosed with metastatic prostate cancer receiving Abiraterone will form the study population. Data will be collected using a structured questionnaire and the validated tool (FACT-P) to assess the HRQoL. Patient medical records will also be reviewed to obtain clinical information. Information on adverse effects and supportive care will be obtained through patient interviews. Quantitative data will be analysed using inferential and descriptive statistics to query associations between HRQoL and clinical, sociodemographic, and treatment-related factors.

MANAGEMENT AND SURVIVAL OUTCOMES AMONG PROSTATE CANCER PATIENTS AT NAKURU COUNTY REFERRAL AND TEACHING HOSPITAL

Neha Bilakhia
Kabarak University School of Pharmacy
bashok@kabarak.ac.ke

ABSTRACT

Background: The management approaches affect survival outcomes in cancer patients. The type of management regimens, especially medicines, determines overall survival and also disease-free survival as a major goal of chemotherapy.

Objectives: To evaluate the management and survival outcomes among prostate cancer patients at Nakuru County Referral and Teaching Hospital.

Methodology: This study will adopt a retrospective cross-sectional design. It will be carried out at Nakuru County Referral and Teaching Hospital, targeting prostate cancer patients who were treated from 2020 to 2024. Simple random sampling will be used to select one hundred and ninety-one participants. Data will be collected using an abstraction form and analyzed using SPSS. Both descriptive and inferential data analyses will be conducted, and the level of significance will be 0.05. The Ethics Committee at Kabarak University will provide ethical clearance for the study. Permission will be obtained from NACOSTI and the management of the hospital

Expected output: The type of treatment regimens, survival outcome, and associated variables.

DETERMINANTS OF SUBOPTIMAL PAIN CONTROL: AN EVALUATION OF CANCER PAIN MANAGEMENT PRACTICES AT THE PALLIATIVE CARE CENTER IN MOI TEACHING AND REFERRAL HOSPITAL

Eric Karani[1], Professor Chite Asirwa[2], Chester Kolek[1]

[1]Kabarak University, [2]International Cancer Institute

karani@kabarak.ac.ke

ABSTRACT

Background: Cancer pain remains a significant burden globally, with developing countries like Kenya facing unique challenges in its management. Despite efforts to alleviate cancer pain through the establishment of specialized palliative care initiatives, a notable proportion of adult cancer patients still report suboptimal pain control.

Objective: This study aims to assess the determinants of suboptimal pain control among adult cancer patients receiving palliative care at Moi Teaching and Referral Hospital.

Methodology: A quantitative cross-sectional study design will be employed, targeting adult cancer patients aged 18 years and above who are receiving palliative care services at MTRH. A sample size of 106 participants will be selected through a systematic random sampling method. Data collection will involve a structured questionnaire and data abstraction form to gather demographic, clinical, and treatment-related information. Pain intensity will be assessed using the Numeric Rating Scale (NRS), with scores above 4 indicating suboptimal pain control. Data will be analyzed using SPSS version 26, employing both descriptive and inferential statistics including chi-square, t-tests, and multivariate logistic regression to identify significant determinants.

Expected Output: study is expected to shed light on the underlying causes of suboptimal pain control, guiding targeted interventions to enhance the quality of palliative care and improve pain management outcomes among cancer patients in similar settings.

KNOWLEDGE, ATTITUDES AND PRACTICES ON EMERGENCY CONTRACEPTIVE USE AMONG FEMALE STUDENTS AT KABARAK UNIVERSITY

Wincate Njagi, Millicent Jerotich, Cherotich Faith, Kelvin Manyega
Kabarak University School of Pharmacy
nwawira@kabarak.ac.ke

ABSTRACT

Background: Emergency contraception is reported to be widely used among young women. Despite high awareness levels, misconceptions, cultural and religious influences, and limited professional guidance may lead to inappropriate use. This study sought to assess the knowledge, attitudes, and practices of emergency contraceptive pills (ECPs) among female undergraduate students at Kabarak University, a Christian based institution in Kenya.

Methods: An institution-based cross-sectional study was conducted among 207 female undergraduate students. Convenience sampling was employed, and data were collected using a structured, self-administered Google Form questionnaire covering demographics, knowledge, attitudes, and practices. Ethical approval was obtained from ISERC and a research license from NACOSTI. Data were analyzed using Excel and summarized in descriptive statistics.

Results: Most respondents (96.2%) were aware of ECPs, with social media cited as the main source of information (50.5%). While awareness was high, correct knowledge remained limited; for instance, 81% knew the correct timeframe of use, yet misconceptions such as ECPs preventing STIs persisted among 3.8% of respondents. Attitudes were mixed: only 40% strongly agreed that ECPs are effective, and 47.2% admitted embarrassment in accessing them. In practice, 43.3% reported never using ECPs and another 43.3% reported rare use, with only 10% sometimes using them. The major reason for use was unprotected sex (61%), followed by contraceptive failure (22.9%). Reported side effects included irregular menstrual bleeding (61.6%), nausea and vomiting (24.7%), and acne (5.5%). Barriers included inadequate counselling (45.7%), cultural stigma (39.5%), and limited provider engagement, with 40% reporting that healthcare professionals rarely discussed ECPs.

Conclusion: Despite high awareness, actual utilization of ECPs among Kabarak University students remains low, influenced by stigma, misconceptions, and inadequate professional guidance. The tendency to use ECPs primarily after unprotected sex indicates misuse and poor integration into broader reproductive health strategies.

Recommendations: There is an urgent need for youth-friendly, culturally sensitive reproductive health interventions including accurate health education that integrates religious principles within universities. Enhanced training for healthcare professionals to deliver confidential and non-judgmental counselling is also recommended. These measures will correct misconceptions, reduce stigma, and reduce inappropriate use of ECPs.

BIBLIOMETRIC ANALYSIS CURRENT RESEARCH TRENDS AND RESEARCH NETWORKS IN NANO DELIVERY SYSTEMS IN AFRICA

Randiga Harnes
Stellenbosch University
randigahtimothy@gmail.com

ABSTRACT

Background: Cancer remains one of the leading causes of mortality in the world, with LMICs particularly inflicted with a higher proportion. Conventional treatment options have low specificity, systemic toxicity and increasing resistance, problems that can be significantly addressed by nano delivery systems. These novel drug delivery strategies also offer advancements to diagnosis and

Objectives: (1) To identify and analyse publication trends, prolific authors, institutions, and countries contributing to research on nano delivery systems for cancer treatment. (2) To map the evolution of research themes and emerging technologies in nano delivery systems through keyword co-occurrence, citation analysis, and thematic clustering. (3) To evaluate the impact and visibility of influential articles and journals, and to uncover gaps and future directions in nano delivery-based cancer therapeutics.

Methods: This is a bibliometric analysis to map the research landscape nano delivery systems for use in cancer therapy. The primary database will be Scopus, with PubMed used as a supplementary database. Structured query strings will be used, containing key words and limiting the duration to the past five years (2020-2025). Data will be extracted as title, authors, year, journal, institutional affiliations, keywords and abstract, citation count, and funding acknowledgments. VOS Viewer will be used to view authorship and collaboration networks while descriptive statistics will be used to show publication trends, top journals and authors.

Expected results: Through this work, it is expected that there will be a low but growing volume of publications over the past five years. Leading institutions in the region will be spotlighted, as will the contribution of authors in the field of nano delivery systems. The funding landscape into research will also be assessed.

Discussion: Sub-Sahara African institutions continue to grow and collaborate in research, a move that will be important for the treatment of the growing disease using novel drug delivery systems. Bibliometric analyses provide a look into research gaps and opportunities, allowing identification of areas that need more funding, collaboration and themes still underexplored. Implementation of research and research projects at the policy level to unlock the potential nanomedicine holds to advance cancer care across the continent.

UTILITY OF ANTIMICROBIAL SUSCEPTIBILITY DATA OF BACTERIAL PATHOGENS AT NAKURU LEVEL 5 HOSPITAL FOR THE DEVELOPMENT OF AN ANTIBIOGRAM

Jeremiah Nagwala, Carla C Maritim, Clinton Okeo, Kolek Chester
Kabarak University, Nakuru, Kenya
jmagwala@kabarak.ac.ke

ABSTRACT

Background: Antimicrobial resistance (AMR) is a significant global health threat, contributing to the ineffectiveness of standard antibiotic treatments. Health facilities require effective surveillance, through antimicrobial susceptibility testing and the development of local antibiograms to guide empirical prescribing based on existing resistant pattern thereby combating AMR. Such an antibiogram is not available in many tertiary facilities.

Objective: The objective was to study susceptibility patterns of bacterial pathogens isolated from patients in a tertiary Hospital over a 12-month period leading to an antibiogram to guide practice.

Methodology: A retrospective longitudinal cross-sectional study was conducted from facility susceptibility data collected in 2024. The data on clinical specimens (blood, urine, pus, tissue), isolated organisms and susceptibility to selected antibiotics was abstracted from laboratory records. Data was entered and analysed using the WHO, WHONET software to generate the resistance trends and an antibiogram. Analysis was primary descriptive where frequencies and percentages were reported.

Results: There were 257 isolates from patients across various hospital units. The specimens were primarily from blood (37.4%), pus (30.4%), and urine (28.4%), with a majority of patients originating from inpatient wards (80.2%). Most of the isolates were Gram-negative bacteria (63.4%), with *Escherichia coli* (37.7%) being the most prevalent. Gram-positive bacteria accounted for 36.6%, with *Enterococcus sp.* (18.7%) and *Staphylococcus aureus* (15.6%) being the most frequently identified. The antibiogram revealed **Resistance to first-line antibiotics was severe:** *E. coli* exhibited 98% resistance to ampicillin, 74% to trimethoprim-sulfamethoxazole, 67% to ciprofloxacin, and 75-86% to third-generation cephalosporins (ceftriaxone and cefotaxime) in bloodstream infections while meropenem and nitrofurantoin remained effective (88% susceptibility each). *S. aureus* displayed significant resistance to erythromycin (51%) and clindamycin (16%) . Enterococcus sps demonstrated 100% high-level gentamicin resistance, 60% ampicillin resistance, 85% ciprofloxacin resistance, and emerging 19% linezolid non-susceptibility. **Multidrug resistance (MDR) was rampant,** with 63% of *E. coli* and 86% of *Klebsiella pneumoniae* isolates classified as MDR; notably, 54% of *E. coli* were extensively drug-resistant (XDR), *S. aureus* (20% MDR, 10% XDR), and *Acinetobacter spp.* (45% MDR). High-priority resistance markers included carbapenem resistance in Enterobacteraes (11 isolates) and linezolid resistance in *Enterococcus sp.* (5 isolates).

Conclusion. This data confirms a high burden of AMR, rendering most empiric first-line therapies ineffective and necessitating the use of last-resort agents. Infection prevention and control (IPC) measures, robust surveillance systems, and antimicrobial stewardship should be enhanced to mitigate the spread of antimicrobial-resistant pathogens in hospital settings. The developed antibiogram will also guide healthcare providers in prescribing the most effective antibiotics.

FROM VERTICAL TO INTEGRATED CARE: ASSESSING BARRIERS AND CO-DESIGNING COST-EFFECTIVE INTERVENTIONS FOR ART DISPENSING IN OUTPATIENT SERVICES. A CASE OF KIRINYAGA COUNTY, KENYA

Amos Kandagor[1] & Francis Wachiuri[2]

[1]Dhibiti Project | LVCTHealth Central region, CDC-Kenya.
[2]Ministry of Health, County Government of Kirinyaga
kandamosk@gmail.com

ABSTRACT

Background: The rapid expansion of HIV programs in Kenya, largely supported by donor funding, has strengthened care for people living with HIV through improved infrastructure, staffing, and resources. However, the establishment of separate ART pharmacies created inequities, sustainability concerns, and limited integration with broader primary healthcare services. To address this gap, Kirinyaga County initiated efforts to integrate ART dispensing into outpatient pharmacies.

Objective: To assess facility needs and barriers to ART dispensing in outpatient pharmacies and co-design cost-effective interventions for integrated service delivery.

Method: During commodity security meetings, sub-county pharmacists (SCPs) highlighted challenges including overburdened OPD staff, service delays, and lack of standardized workflows. In October 2023, a facility assessment was conducted in 37 health facilities, complemented by focus group discussions with staff. Two models the Chronic Care Model and Integrated Primary Care Model (IPCM) were considered, with human-centered design guiding intervention development.

Results and Discussion: Out of 37 facilities, 34 (92%) achieved full ART–OPD integration under IPCM, 2 (5%) demonstrated partial integration, and only 1 (3%) remained under the chronic care model with no integration. The strong performance of IPCM facilities was linked to structural and operational changes that unified pharmacy services. Relocating OPD and ART pharmacies, adopting an electronic medical record system (Web ADT), and implementing harmonized SOPs streamlined workflows and improved reporting. These changes reduced duplication and strengthened continuity of care.

Patient-centered strategies also contributed significantly. One-stop dispensing points, harmonized appointment systems, and in-pharmacy ART dispensing normalized treatment collection and reduced stigma. Multi-Month Dispensing (MMD) minimized patient visits, while staggered scheduling reduced congestion. Task-shifting to non-pharmacist cadres helped expand capacity without compromising quality.

Operational improvements included unified duty rosters, staff sensitization on ART guidelines, and enhanced communication, fostering shared accountability. Spatial adjustments such as optimized seating, one-way patient flow, and better storage helped overcome infrastructure constraints, reinforcing service efficiency.

Conclusion and Recommendation

Integration of ART into OPD pharmacies was most effective under IPCM, where system-level and facility-level changes worked together to streamline operations and improve patient experience. Key enablers included consolidated pharmacy operations, electronic records, harmonized workflows, one-stop dispensing, MMD, and synchronized appointments. Workforce strategies such as task-shifting and staff training, combined with innovative space use, ensured sustainability.

HOW CUTTING-EDGE TECHNOLOGY AND DIGITAL SOLUTIONS ARE TRANSFORMING CANCER CARE IN KENYA

Calvin Odhiambo
Clinical health network
calvin.agongo@crean-health.com

ABSTRACT

Background: Cancer is a growing health crisis in Kenya. The late diagnosis and limited treatment options leading to poor outcomes. The new medical technologies, health informatics, and digital tools are shaping the oncology sector. From AI to telemedicine, these innovations are making cancer care faster, cheaper, and more accessible.

Objectives: This study explores how Kenya is adopting the cutting-edge technology such as AI, mobile health solutions to improve cancer detection, treatment, and patient care. And to examine recent advances in medical technology and health informatics within Kenya's oncology care system and evaluate their implications for pharmacy practice, policy, and patient outcomes.

Methods: A comprehensive review of national cancer reports, government publications, peer-reviewed articles, and institutional data from 2018 to 2025 was conducted. Focus areas included radiotherapy infrastructure, digital screening tools, electronic health record systems, cancer registries, artificial intelligence (AI) applications, and tele-oncology platforms. The analysis focused on the implementation of technological interventions and informatics system in oncology care.

Results: The findings show significant strides that have been made in incorporating digital medical informatics and technology. Like in Kinodo Kwetu Hospital an AI-powered system for cervical cancer detection. The AI proved 95% accurate in detecting abnormal cells. Several counties in Kenya uses tele-oncology platforms to connect rural patient to specialist. Adoption of electronic medical records such as KenyaEMR has improved visibility of cancer burden by sex, age, and county linkage to national registry. Several digital platforms have been adopted such as Electronic Data Capture (EDC) which have transformed how cancer data is collected, stored, and analyzed. This makes cancer care and research more efficient, and accurate.

Discussion: Digital health and advanced technology are no longer distant solution-they are making real, practical improvements in cancer care in Kenya. However, challenges such as internet access, digital literacy, and sustainable funding remain. With ongoing government policy, investment, and collaboration between healthcare and tech sectors. If done right, this innovation could save thousands of lives by catching cancer early and improving treatment access. The future of oncology in Kenya is digital.

CORTICOTHERAPY AND COVID-19 HOSPITALIZED PATIENT MORTALITY - IMPACT OF STUDY DESIGN, TEMPORALITY AND PUBLICATION STATUS ON STUDY RESULTS: A META-REGRESSION

Akunga Nahashon G.[1]
School of Pharmacy, Kabarak University, Nakuru, Kenya
nakunga@kabarak.ac.ke

ABSTRACT

Background: COVID-19, a viral infection of the respiratory system causes inflammation that can compromise lung function. Corticosteroids have been used to treat this inflammatory response though the efficacy is still debatable. Objective: To assess whether study design, temporality, and publication status influenced the reported efficacy of corticosteroids in reducing mortality among hospitalized COVID-19 patients.

Methods: Studies were retrieved from PubMed, Google Scholar and MEDRXIV. Eligible studies were those conducted between 2019 and 2024, had a clear endpoint (mortality), had a treatment group (corticosteroid group) and a control (no corticosteroids). The pooled risk difference in mortality between corticosteroid treated and corticosteroid-untreated was computed taking into account study design, publication status (i.e., peer-reviewed vs. preprint) and the timing (temporality) of when the studies were conducted.

Results: Nineteen studies involving 21,583 participants were analyzed. The overall pooled risk difference in mortality between corticosteroid-treated and untreated patients was 0.01 (95% CI: -0.03, 0.05). Nine randomized controlled trials (RCTs) with 9,537 patients showed a pooled risk difference of -0.05 (95% CI: -0.10, 0.01), while 11 cohort studies with 12,046 patients had a pooled risk difference of 0.05 (95% CI: -0.01, 0.11). The difference in effect between RCTs and cohort studies was statistically significant ($p = 0.02$). Thirteen published studies (11,362 participants) had a pooled risk difference of -0.02 (95% CI: -0.08, 0.03), compared to six unpublished studies (10,221 participants) with a pooled risk difference of 0.05 (95% CI: -0.01, 0.12). The difference between published and unpublished studies was not statistically significant ($p = 0.08$). Eight studies conducted during or before 2020 (10,438 participants) had a pooled risk difference of 0.00 (95% CI: -0.06, 0.07), while 11 studies conducted after 2020 (11,145 participants) had a pooled risk difference of 0.01 (95% CI: -0.05, 0.06). There was no significant difference between studies conducted during or before 2020 and those conducted after ($p = 0.99$). A regression model based on the year of publication was significant based on model coefficients as predictors of effect size ($p = 0.016$). The model also demonstrated that the year of publication and study design were significant predicators of effect size ($p=0.016$ and $p=0.027$ respectively) but publication status was not a significant predictor of effect size ($p=0.460$).

Conclusion: Corticosteroids do not significantly reduce the risk of mortality among hospitalized COVID-19 patients overall. However, a significant difference was observed between randomized controlled trials (RCTs) and cohort studies, with RCTs suggesting a possible benefit of corticosteroids compared to cohort studies. These findings underscore the influence of study design on treatment outcomes and highlight the need for cautious interpretation of non-randomized evidence.

THE KABARAK UNIVERSITY ONCOLOGY PHARMACY PRECEPTORSHIP TRAINING WORKSHOP 2025 – DEVELOPING PARTNERSHIPS AND DEDICATED TRAINING FOR ROBUST EXPERIENTIAL TRAINING

Kelvin Manyega[1], Thrizza Kiplagat[1], Wairimu Karaihira[1], Fredrick C. Asirwa, Alexandre Chan[3], Titus Suge[1]

[1]Kabarak University School of Pharmacy

[2]International Cancer Institute, Eldoret

[3]University of California Irvine, Faculty of Pharmaceutical Sciences

kelvinmanyega@kabarak.ac.ke

ABSTRACT

Background: Kenya is experiencing an unprecedented rise in cancer cases. The demand for oncology pharmacists, important members of the oncology team whose main responsibility is to guarantee the safety and efficacy of treatments, is on the rise. While there has been an expansion of academic programs in oncology pharmacy the experiential component of training is often inadequate due to resource constraints and inadequate preceptorship training. Kabarak University School of Pharmacy conducted a training workshop to discuss the implementation of clinical rotations for oncology pharmacy residents in level 6 hospitals and to offer expert instruction on oncology pharmacy preceptorship techniques.

Methods: Participants from diverse backgrounds including oncology pharmacists, oncologists, academic faculty and administrators were invited. Discussions focused on identifying activities that could be completed by oncology pharmacy residents as part of their clinical rotations at level 6 hospitals under the broad competency areas of [1] Patient care, [2] Advancing patient care and pharmacy practice, [3] Leadership and management, [4] Teaching education and dissemination of knowledge and [5] Investigational drugs. Expert instruction on preceptorship techniques was offered through interactive lectures. Pre- and post-test surveys were used to measure participants' knowledge on selected preceptorship techniques. A paired student's t-test was used to measure the difference in participant knowledge scores before and after receiving expert instruction on preceptorship techniques.

Results: Between April 10th and 11th 2025 fourteen participants took part in the training workshop with representation from Kabarak University, International Cancer Institute, Kenyatta National Hospital, Kenyatta University Teaching, Referral and Research Hospital, University of Nairobi, Kisii University and Nakuru Regional Cancer Centre. A comprehensive set of clinical tasks and proposed assessment strategies developed by participants was published as part of the clinical rotation manual for oncology pharmacy resident training for the Kabarak University MPharm Oncology Pharmacy Program. Expert instruction on preceptorship covered the following topics [1] Attributes of high quality preceptorship for oncology pharmacy [2] Aligning goals, activities and assessment for experiential learning, [3] Preceptor roles and sharing feedback with residents and [4] Inspiring residents to learn and case based learning. There was an increase in mean knowledge scores from 8.7 (standard deviation 1.2) in the pre-test to 9.3 (standard deviation 0.5) in the post-test. The difference in means approached statistical significance on a one-tailed student's t-test (p=0.0512).

Conclusion: A consultative approach that involves both practitioners and educators in addition to dedicated preceptor training are core components in the development of robust experiential training programs for oncology pharmacy.

CLINICAL CHARACTERISTICS, MANAGEMENT, AND SURVIVAL OUTCOMES OF HODGKIN LYMPHOMA PATIENTS AT KENYATTA NATIONAL HOSPITAL

Kiprop Dorcas, Chite Asirwa, Wairimu Karaihira
Kabarak University School of Pharmacy
kipropdorcas@kabarak.ac.ke

ABSTRACT

Background: Hodgkin lymphoma a rare form of cancer, highly responsive to treatment with high rates of survival. HL is a cancer of the lymphatic system, histologically characterized by presence of Reed-Sternberg cells. However, in Kenya, there's limited data on clinical characteristics, treatment modalities used and survival of HL patients. There is need to understand survival trends among HL patients in order to optimize therapies.

Objective: This study aims to describe the clinical characteristics, management, and survival outcomes of patients diagnosed with Hodgkin lymphoma at Kenyatta National Hospital.

Methodology: A retrospective cross-sectional study will be employed, utilizing patient charts or medical records. Estimated sample size of 50 patients will be determined using Cochran's formula for estimating population sample size. Simple random sampling using lottery method will be utilized to select 50 patients. Data collected will include patient's demographic characteristics, histological subtype, stage of the disease, treatment modalities used, and response to treatment and survival outcomes. Descriptive statistics will used for demographic and clinical characteristics. Categorical variables such as treatment regimens used and response rates will be summarized using frequencies and percentages. To determine response rates across different treatment groups, Chi-square test will be employed. Kaplan Meier analysis will be used for survival outcomes and PFS. Permission to conduct this study will be obtained from KNH-UON ethics and research committee.

Expected Outcome: The study is expected to provide information on the clinical characteristics, management and survival outcomes of Hodgkin lymphoma in Kenyan set up, and thus aid in improvement of evidence-based treatment.

PREVALENCE AND MANAGEMENT OF BLOODSTREAM INFECTIONS AMONG ADULT LEUKEMIA PATIENTS RECEIVING CHEMOTHERAPY AT KENYATTA NATIONAL HOSPITAL

Allan Oywaya Odera
Kabarak University School of Pharmacy
allanodera@kabarak.ac.ke

Background: Bloodstream infections (BSIs) remain a leading cause of morbidity and mortality in leukemia patients receiving chemotherapy due to profound immunosuppression. Despite their clinical significance, data on the burden, antibiotic utilization patterns, and adherence to evidence-based management of BSIs among adult leukemia patients in Kenya are scarce.

Objective: This study seeks to determine the prevalence of BSIs in adult leukemia patients receiving chemotherapy at Kenyatta National Hospital (KNH), evaluate antibiotic prescribing patterns, and assess compliance with international and national evidence-based guidelines.

Methods: A retrospective cross-sectional review will be conducted among adult leukemia patients who received chemotherapy at KNH between 2018–2023. Simple random sampling of eligible medical records will be used. Data to be extracted include patient demographics, microbiological profiles, antibiotic utilization, and treatment outcomes. Analysis will involve descriptive statistics for prevalence and antibiotic use, and inferential statistics to assess associations between infection, treatment patterns, and clinical outcomes.

Expected Results: The study is anticipated to document a high prevalence of multidrug-resistant BSIs, predominantly due to Gram-negative organisms. Antibiotic utilization is expected to show frequent empirical broad-spectrum use with variable adherence to guideline-recommended practices.

Conclusion: Findings from this study will provide critical evidence to strengthen antimicrobial stewardship, improve infection control practices, and inform clinical guideline adaptation in oncology care. This work has potential to guide policy interventions aimed at reducing infection-related morbidity and mortality among leukemia patients in resource-limited settings.

OUTCOMES OF GCSF USE PATTERNS FOR PROPHYLAXIS OF CHEMOTHERAPY-INDUCED NEUTROPENIA IN SOLID TUMORS AND LYMPHOMAS: A NARRATIVE REVIEW

Beryl G. Achei, Richard Kagia, David Muyodi
School of Pharmacy, Kabarak University
achei@kabarak.ac.ke

ABSTRACT

Background: Neutropenia has been reported to occur in 30-60% of patients receiving chemotherapy. Chemotherapy-induced neutropenia (CIN) and associated FN increase length of hospitalization, cost of healthcare and mortality. Practice guidelines recommend that patients at high risk of developing FN should receive granulocyte colony-stimulating factors (GCSF) within 1-3 days after chemotherapy to prevent neutropenia. However, in practice GCSF use patterns differ from guideline recommendations.

Objective: To describe guidelines recommendations for prophylactic GCSF use, to review empiric data on how neutropenia outcomes are influenced by prophylactic GCSF use, particularly choice of biologic (reference product vs biosimilar), timing of initial dosing, duration of use and dose of GCSF.

Methods: A narrative review of literature was carried out. A search on PubMed and Google Scholar using search terms 'neutropenia', 'chemotherapy-induced neutropenia', 'granulocyte colony-stimulating factors' and 'prophylaxis'. Literature from both global and local settings was considered.

Results: NCCN, ESMO, ASCO guidelines converge on recommendations of prophylactic GCSF use. High risk (>20%) and intermediate risk (10-20%) with ≥1 patient risk factor should receive prophylactic GCSF from the first cycle. A single dose of pegfilgrastim 6mg or daily filgrastim 5mcg/kg/day until recovery of post-nadir absolute neutrophil count should be administered 24-72 hours after chemotherapy. In recent years there has been a decline in use of the filgrastim reference product with an increase in the uptake of filgrastim biosimilars and pegfilgrastim. Filgrastim biosimilar Sandoz was shown to be effective in preventing FN. The optimal duration for short-acting GCSF is not clearly defined. One clinical trial reported 5-day duration of GCSF to be sufficient. Both filgrastim biosimilar (Grastofil®) and the reference biologic (Neupogen®) were used in the RCT. In a case control study, administration of GCSF for ≥5 days reduced the risk of hospitalization as compared to <5 days. Most patients received a dose 300mcg dose of filgrastim.

Conclusion: There is limited data on patterns of use of prophylactic GCSF for solid tumors and lymphomas in Kenya. There is also no study that focuses on how prescribing patterns influence neutropenic outcomes in adult cancer patients. More research is needed to describe outcomes GCSF use in neutropenia and its complications.

ASSESSMENT OF SURVIVAL OUTCOMES AND ADVERSE DRUG REACTIONS AMONG PATIENTS WITH CHRONIC MYELOID LEUKEMIA AT KENYATTA NATIONAL HOSPITAL

Mohamed Yunis
Kabarak University School of Pharmacy
yunishassan@kabarak.ac.ke

ABSTRACT

Background: The introduction of tyrosine kinase inhibitors has notably improved chronic myeloid leukemia (CML) outcomes, transforming it into a manageable chronic condition with markedly increased survival rates. In resource-limited settings, delayed diagnosis, limited access to advanced therapies, and adverse drug reactions hinder optimal treatment outcomes. Nonetheless, there is a paucity of data about survival outcomes and adverse drug reactions associated with chronic myeloid leukemia treatment.

Objective: The main purpose of this study will be to assess survival outcomes and adverse drug reactions among patients with chronic myeloid leukemia at Kenyatta National Hospital (KNH).

Methods. The study will involve a one-arm retrospective cohort study design, among CML patients who had been treated at KNH from 1st January 2017 to 31st December 2021. All eligible patients meeting the inclusion criteria during the study period will be included in the study. Data collection will be employed by retrospective review of medical records of the patients from the time of diagnosis until the last follow-up visit or death in the facility. The data abstraction tool consists of biodata of the patient, the phase of CML, clinical characteristics, the treatment regimen used and responses to treatment, adverse drug reactions, length of survival after diagnosis, and mortality rate. Data entry and analysis will be conducted using SPSS statistical software. Descriptive analysis will be used for the

categorical variables. The Kaplan-Meier analysis will also be used to assess survival outcomes, while bivariate and multivariate Cox regression models will be used to identify the predictors of survival among patients with CML.

Key words: Chronic myeloid leukemia, Tyrosine kinase inhibitors, Adverse drug reactions, Survival outcomes

DETERMINANTS AND MANAGEMENT PATTERNS OF HEMATOLOGIC TOXICITIES AMONG ADVANCED OVARIAN CANCER PATIENTS RECEIVING CARBOPLATIN/ PACLITAXEL AT MOI TEACHING AND REFERRAL HOSPITAL, KENYA

Benard Kioko, Titus Suge, Richard Kagia
School of Pharmacy, Kabarak University, Kenya
bkioko@kabarak.ac.ke

ABSTRACT

Background: Hematologic toxicities such as anemia, neutropenia, and thrombocytopenia are common and clinically significant adverse effects of carboplatin/paclitaxel chemotherapy in advanced ovarian cancer (AOC). These complications contribute to treatment delays, dose reductions, and poorer survival outcomes. Their incidence varies widely and may be influenced by sociodemographic, disease-related, and treatment-related factors, particularly in resource-limited settings like Kenya where access to supportive care is inconsistent.

Objectives: To determine the prevalence and severity of hematologic toxicities, identify sociodemographic and clinical determinants, and evaluate management strategies among AOC patients receiving carboplatin/paclitaxel chemotherapy at Moi Teaching and Referral Hospital (MTRH).

Methods: A retrospective descriptive cross-sectional study will review patient records at MTRH between 2015–2024. Data will be abstracted using a standardized tool and analyzed with SPSS v25. Descriptive statistics will assess prevalence and severity, while multivariable logistic regression will identify associated factors. Management approaches such as transfusions, G-CSF, dose modifications, and delays will be evaluated.

Expected outcomes: Preliminary expectations are that hematologic toxicities occur in a substantial proportion of patients, with neutropenia being most prevalent. Sociodemographic (age, marital status, socioeconomic status), clinical (baseline hemoglobin, ECOG performance, comorbidities), and treatment-related factors (dose intensity, cycles completed) are anticipated to significantly influence toxicity patterns. Management is expected to be constrained by limited access to supportive therapies, contributing to delays and reduced chemotherapy completion rates.

Discussion: Findings will provide evidence on real-world determinants and management of chemotherapy-induced hematologic toxicities in a low-resource setting. The results can inform risk stratification frameworks, guide allocation of supportive interventions, and improve context-specific guidelines. Ultimately, this study aims to enhance patient outcomes and contribute to improved oncology care policies in Kenya.

RISK FACTORS AND MANAGEMENT OF VENOUS THROMBOEMBOLIC EVENTS AMONG PATIENTS WITH GASTROINTESTINAL MALIGNANCIES AT KENYATTA NATIONAL HOSPITAL

Joy Waithaka[1], David G. Nyamu[2], Dr Chester Kolek[1]

[1]Kabarak University, [2]University of Nairobi

nwaithaka@kabarak.ac.ke

ABSTRACT

Background: Venous thromboembolism is a common and fatal complication among patients with gastrointestinal malignancies. While global Western countries have described the management and identified risk factors for venous thromboembolism, there remains a significant lack of context-specific data from sub-Saharan Africa, especially Kenya.

Objectives: To evaluate the risk factors and management of venous thromboembolic events among patients with gastrointestinal malignancies at Kenyatta National Hospital.

Methodology: This will be a retrospective case-control study conducted at Kenyatta National Hospital from January 2020 to December 2024, among patients diagnosed with gastrointestinal malignancies. Cases will include patients with documented venous thromboembolic events, while controls will include matched patients with gastrointestinal malignancies who do not have a history of venous thromboembolic events. A minimum sample size of 220 patients (110 cases and 110 controls) will be targeted. A stratified random sampling method will be used to select eligible records from hospital registries. Data will be collected using a pre-designed data abstraction tool. Data will be entered into Microsoft Excel 2025 and analyzed using Stata version 17. Descriptive statistics, including bivariate analyses and multivariable analyses, will be applied to identify independent risk factors for venous thromboembolic events, with significance set at $p \leq 0.05$.

Expected Application of Results: The findings from this study will provide data on VTE risk assessment and stratification. This data will guide early identification of high-risk patients. This study aims to provide evidence to inform clinical decisions in thromboprophylaxis and the management of venous thromboembolic events in patients with gastrointestinal cancers. Ultimately, the results will contribute to improved patient outcomes and the addition to local clinical guidelines in oncology care in Kenya.

ENHANCING TECHNICAL CAPACITY THROUGH INTEGRATED THEORY AND PRACTICE

Sarah Vugigi and Titus Suge

School of Pharmacy, Kabarak University, Kenya

svugigi@kabarak.ac.ke

ABSTRACT

Kenya remains heavily depended on imported health products and technologies to meet its domestic healthcare needs. In response, the government has established the Kenya National Pharmaceutical Policy to strengthen local manufacturing of essential medicines.

Factors contributing to dominance of foreign products include: limited innovation capacity, insufficient collaboration with academic and research institutions, and inadequate personnel possessing specialized skills essential to the manufacturing industry. The limited technical capacity is in part attributed to a shortage of pharmacists with the required practical industrial experience for their expected roles. This poses a risk to manufacturers and has contributed to the continued reliance on expatriates for essential technical expertise. Moreover, the existing 25 licensed pharmaceutical manufacturers in Kenya are insufficient to provide the requisite experiential training for pharmacy students across all universities in the country. Consequently, there is need to intentionally integrate theoretical concepts taught in academic institutions with the required industrial practical skills that will ensure graduate pharmacy professionals are adequately skilled in pharmaceutical manufacturing operations.

This concept paper proposes a competency-based teaching model that aims to enhance technical capacity in the pharmaceutical sector by equipping students with the necessary practical-based skills. The model proposes inclusion of manufacturing simulations, industrial partnerships and structured practical modules into the curriculum to provide hands-on-training for pharmacy students. In addition, it offers short-term professional development programs for pharmacy practitioners across all sectors. This teaching model is based on four pillars: formulation unit, mini-industry, analysis laboratory, and continuous professional development.

The model involves setting up modular mini-industry and product development units on campus, supported by well-trained faculty and partnerships with key players in the pharmaceutical sector. Notably, Kabarak University is at the forefront in response to market demands and the unpreparedness of new graduates for the workplace. In 2024, it launched a Master of Pharmacy program in Oncology. Additionally, the University plans to launch a Master of Pharmacy program in Pharmaceutical Manufacturing in January 2026, with a strong emphasis on practical skills and experiential training.

The envisaged competency-based teaching model is thus expected to contribute towards bridging the gap between academia and practice, enhance technical capacity, foster innovation and strengthen local self-sufficiency in pharmaceutical manufacturing.

Keywords: *Technical Capacity, Pharmaceutical Manufacturing, Pharmacy, Practical Skills, Teaching Model*

AN OVERVIEW OF MARKET-APPROVED NOVEL DELIVERY SYSTEMS FOR ONCOLOGY THERAPEUTICS

Vincent O. Nyandoro
School of Pharmacy, Kabarak University
Email: vnyandoro@kabarak.ac.ke

ABSTRACT

Novel delivery systems for oncology therapeutics offer significant advantages over conventional treatments. These smart delivery systems enable enhanced efficacy, reduced toxicity, and precise targeting. The clinical pipeline for these agents has expanded considerably since the 1980s, resulting in a substantial portfolio of market-approved nano-formulations. These platforms primarily serve as targeted delivery vehicles to enhance the therapeutic index of potent chemotherapeutics. This talk provides a timely synopsis of novel cancer therapies that have achieved regulatory approval. By framing the current landscape, this talk will ultimately inspire researchers and the pharmaceutical industry R&D to continue innovation in delivery of oncology therapeutics.

DUAL PATHWAY-TARGETING VANCOMYCIN-LOADED LIPID-DENDRIMER HYBRID NANOCARRIER THERAPY FOR MRSA-INDUCED SEPSIS

Vincent O. Nyandoro[1,2], Calvin A. Omolo[1], Eman A. Ismail[1], Abdelrahman Tageldin[1], Mohammed A. Gafar[1], Thirumala Govender[1]

[1]Discipline of Pharmaceutical Sciences, College of Health Sciences, University of KwaZulu-Natal, Durban, South Africa.

[2]School of Pharmacy, Kabarak University, Kabarak, Kenya.

vnyandoro@kabarak.ac.ke

Purpose: WHO identifies sepsis as a major global health threat, accounting for ~ 20% of global deaths. The pathophysiology of sepsis presents potential therapeutic targets, including the ADAM10 and NLRP3 inflammasome pathways. This study aimed to develop a dual pathway-targeting Lipid-Dendrimer Hybrid Nanocarrier (LDHN) loaded with Vancomycin (LDHN-VCM) to mitigate inflammation (via ADAM10 and NLRP3 inflammasome modulation), reduce oxidative stress (via ROS scavenging) and kill MRSA via vancomycin in sepsis.

Method: The LDHN-VCM was prepared by solvent evaporation/ ultrasonication method and characterized in terms of morphology using TEM, particle size (PS), polydispersity index (PDI), and zeta potential (ZP) using zetasizer, encapsulation efficiency (EE%) using centrifugation-ultrafiltration, physical stability at 4°C and room temperature, in vitro drug release using dialysis membrane diffusion, in vitro antibacterial activity (MIC, biofilm, TKA, flow cytometry), biocompatibility using MTT assay, in vitro antioxidant activities (DPPH and ROS scavenging), in vitro anti-inflammatory using cytokine assay, and in vivo studies using MRSA mice model.

Results: The LDHN-VCM were stable, spherical with a PS, PDI and ZP of 162.4 ± 1.537 nm, 0.176 ± 0.008 and +10.05 ± 1.02 mV respectively and 67.03% EE. The release of VCM from LDHN was sustained for 72 h compared to bare VCM released in 24 h. The LDHN-VCM had > 85 % cell viability in HEK293 and HEPG2 cells and <1 % hemolytic activity confirming their biocompatibility. In vitro antibacterial studies against S. aureus and MRSA revealed 4-fold and 2-fold enhanced antibacterial activity, respectively, compared to bare VCM. Biofilm eradication, time kill kinetics, fluorescence-activated cell sorting cell viability and MRSA membrane rapture assays confirmed the superior anti-MRSA activity of LDHN-VCM. ROS scavenging assay showed a decrease in ROS levels suggesting a protective effect LDHN-VCM against oxidative stress in LPS-induced RAW 264.7 cells. In vivo studies using sepsis mice model showed superior antibacterial and antinflammatory activity.

Conclusion: LDHN-VCM was successfully formulated from AS and PEI biomaterials. LDHN-VCM demonstrated optimal physicochemical characteristics and excellent biocompatibility, sustained in vitro release profile of the encapsulated VCM, superior anti-MRSA activity and substantial reduction in MRSA load in blood, significant free radical and ROS scavenging activity, and suppression of pro-inflammatory cytokines compared to untreated and bare VCM.

HEALTHCARE FINANCING AND POLICY FOR ONCOLOGY: A RIGHTS-BASED ASSESSMENT OF KENYA'S SOCIAL HEALTH AUTHORITY

Chemwetich Janet
cchemwetich@kabarak.ac.ke

ABSTRACT

Cancer represents one of the fastest-growing health burdens in Kenya, yet oncology care remains profoundly shaped by weaknesses in healthcare financing and policy. Despite constitutional guarantees affirming the right to the highest attainable standard of health, the prohibitive costs of chemotherapy, radiotherapy, and emerging precision therapies continue to push households into catastrophic expenditure. These costs erode treatment adherence, undermine clinical outcomes, and restrict oncologists from exercising their professional mandate to deliver comprehensive care.

This paper situates oncology care within Kenya's wider health financing trajectory, from the cost-sharing experiments of the 1980s, to the unimplemented National Social Health Insurance Fund proposal of 2004, and to the establishment of the Social Health Authority (SHA) under the Social Health Insurance Act of 2023. Persistent challenges in risk pooling benefit package design, and reimbursement mechanisms remain unresolved, and oncology care exposes these gaps most acutely, with limited coverage of essential medicines, slow reimbursements to facilities, and inequitable access to advanced therapies.

By applying the World Health Organization's framework of revenue collection, risk pooling, and strategic purchasing, this paper evaluates how Kenya's current financing and policy design affects oncology care delivery. It makes three principal arguments: first, that oncology financing should be expanded to guarantee comprehensive coverage of essential cancer medicines and services; second, that predictable reimbursement to cancer facilities must be institutionalised to ensure continuity of care; and third, that legal safeguards are necessary to protect patients from impoverishment due to medical debt. The paper concludes that sustainable oncology financing is indispensable not only for advancing universal health coverage but also for fulfilling Kenya's constitutional obligations to equity, dignity, and the right to health.

Keywords: Oncology care, healthcare financing, Social Health Authority, catastrophic expenditure, universal health coverage

OPTIMIZING INVESTIGATIONAL PRODUCT MANAGEMENT IN ONCOLOGY TRIALS: BEST PRACTICES IN STORAGE, ACCOUNTABILITY, AND PERSONNEL QUALIFICATION

Daniel Mahiuha
Clinical Research Health Network
dahiuha@gmail.com

ABSTRACT

Background: Managing investigational products (IPs) in oncology trials is increasingly complex due to intricate dosing regimens, multiple study arms, and stringent regulatory requirements. Effective IP management is critical for ensuring patient safety, maintaining protocol compliance, and preserving trial integrity, especially given the low success rate of new anticancer agents, with only 3.4% achieving regulatory approval after entering clinical testing (Wong et al., 2019).

Objectives: This article outlines best practices and operational strategies for investigational product management in clinical trials, with a focus on storage, accountability, and personnel qualification at research sites.

Methods: A narrative review was conducted to synthesize current literature and regulatory guidance on IP handling, complemented by the author's practical experience as a study pharmacist. Real-world examples highlight logistical and compliance challenges and illustrate pharmacist-led strategies to optimize IP workflows. The review emphasizes interdisciplinary coordination, adherence to Good Clinical Practice (GCP), and alignment with institutional standard operating procedures (SOPs).

Expected Outcomes/Implications: The practices described aim to strengthen IP workflows, improve adherence to study protocols, and minimize the risk of medication errors. By integrating pharmacist-driven oversight and robust accountability systems, trial sites can enhance operational efficiency while safeguarding participant safety. These approaches are applicable across oncology and other therapeutic areas conducting investigational research.

Discussion: Despite its central role in clinical trial operations, IP management often receives insufficient attention, even in oncology's high-risk environment. This article advocates for a proactive, systems-based model led by qualified pharmacists to ensure IPs are stored, dispensed, and documented with precision. Structured staff training, strict accountability processes, and standardized documentation can significantly reduce protocol deviations and medication-related risks. Embedding these best practices into clinical workflows not only supports compliance but also contributes to higher-quality research outcomes.

IDENTIFICATION OF NOVEL DRUG ANALOGUES OF PHYTOCHEMICALS FOR BREAST CANCER TREATMENT: A COMPUTATIONAL APPROACH

Waithaka Morris Mukono, Wamboi Grace, Masha Samuel Ruwa
Kabarak University School of Pharmacy
mruwa@kabarak.ac.ke

ABSTRACT

Background: Breast cancer is a leading cause of cancer-related mortality worldwide, with HER2-positive and ER-positive subtypes presenting significant treatment challenges. Current drugs such as Lapatinib and Tamoxifen are limited by toxicity, resistance, and drug–drug interactions. **Objective:** This study aimed to identify phytochemical-derived drug candidates for HER2-positive and ER-positive breast cancer using *in silico* drug discovery methods. **Methodology:** Virtual screening and molecular docking were performed using SwissSimilarity and related software, with Lapatinib and Tamoxifen as reference drugs. Pharmacokinetic profiles were assessed using SwissADME, while toxicity was predicted with Protox and supporting platforms.

Results: For HER2-positive breast cancer, Mangiferin analogues showed the most vigorous activity, with ZINC000002065942 recording a docking score of –9.8 kcal/mol, slightly stronger than Lapatinib (–9.7). It also demonstrated high gastrointestinal absorption, no blood–brain barrier permeation, and compliance with Lipinski's rules. However, nephrotoxicity and respiratory toxicity were predicted in many Mangiferin analogues. Other scaffolds, including Hesperetin, Luteolin, Naringenin, and Curcumin, were eliminated due to weak binding or organ-specific toxicity. For ER-positive breast cancer, the Genistein analogue ZINC000006484607 was identified as the best candidate with a docking score of –8.7, outperforming both Genistein and Tamoxifen. It showed good pharmacokinetics and no BBB permeation, but was predicted to inhibit multiple CYP enzymes, suggesting potential drug–drug interactions.

Conclusion: The study identified ZINC000002065942 (Mangiferin analogue) and ZINC000006484607 (Genistein analogue) as promising candidates for HER2-positive and ER-positive breast cancers. Further experimental validation and structural optimization are required to address predicted toxicities and metabolic liabilities.

Keywords: Breast cancer, HER2-positive, ER-positive, phytochemicals, *in silico* drug discovery, molecular docking, pharmacokinetics, toxicity prediction.

IN-SILICO DESIGN AND IN-VITRO VALIDATION OF DUAL PARP AND PI3K INHIBITORS TO OVERCOME RESISTANCE IN BRCA-MUTATED TRIPLE-NEGATIVE BREAST CANCER

Bernard Kioko, Caroline Chepkirui

School of Pharmacy and School of Science, Engineering & Technology Kabarak University

bkioko@kabarak.ac.ke

ABSTRACT

Background: Triple-negative breast cancer (TNBC) accounts for 15–20% of breast cancers and is particularly aggressive due to lack of ER, PR, and HER2 expression. BRCA-mutated TNBC is sensitive to poly (ADP-ribose) polymerase (PARP) inhibitors; however, resistance frequently develops via homologous recombination repair restoration, reduced PARP1 trapping, and PI3K/AKT/mTOR pathway activation. There is an urgent need for novel therapies, especially in resource-limited settings such as Kenya, where TNBC disproportionately affects younger women.

Objectives: To identify and validate novel dual PARP and PI3K inhibitors with improved efficacy in overcoming PARP inhibitor resistance in BRCA-mutated TNBC.

Methods: This study integrates computational drug discovery and in-vitro testing. Ligand-based and structure-based virtual screening will identify potential dual inhibitors. Lead compounds will undergo molecular docking against PARP1 and PI3K, followed by ADMET predictions to evaluate pharmacokinetics and toxicity. Promising candidates will then be tested in vitro using BRCA-mutated TNBC cell lines (MDA-MB-436) via MTT cytotoxicity and apoptosis assays.

Expected Outcomes: We anticipate identifying lead dual inhibitors with high binding affinity, favourable pharmacokinetics, and reduced toxicity. In vitro validation is expected to confirm enhanced cytotoxicity compared with PARP inhibitors alone. These findings will provide new insights into overcoming drug resistance and improving targeted therapies in TNBC.

Discussion: By combining computational and experimental approaches, this study aims to contribute to the development of affordable and precision-focused cancer therapies. The work aligns with Kenya's Vision 2030, the African Union Agenda 2063, and SDGs by advancing oncology research and reducing disparities in cancer care.

IDENTIFICATION OF NOVEL COMPOUNDS FOR TRIPLE-NEGATIVE BREAST CANCER THROUGH COMPUTATIONAL ANALYSIS.

Gati Lettycia Marwa, Ngari Mercy Wairimu, Otieno Ratchel Cornelia
Kabarak University School of Pharmacy
lettyciagati2@gmail.com

ABSTRACT

With an annual incidence of 6000 cases and 2500 cancer-related deaths, breast cancer is the most frequent cancer diagnosed in Kenya. In Kenya, there are 34 cases of breast cancer for every 100,000 people. According to the immunohistochemical expression of the estrogen receptor (ER), progesterone receptor (PR), and human epithelial growth factor receptor (HER-2) amplification, there are three main tumor subtypes of breast cancer: hormone receptor-positive, HER-2 enriched, and triple-negative breast cancer (TNBC) (Elena, 2020).15–25% of all breast cancers have TNBC. It is common among young premenopausal women under 40 who are of lower socioeconomic status and of African-American and Hispanic heritage, according to population-based studies.

Because TNBC has multiple molecular subtypes, treatment can be difficult. Chemotherapy is the most popular of the many potential treatment choices, which also include immunotherapy, radiation, chemotherapy, and surgery. Early TNBC is typically treated with neoadjuvant chemotherapy and surgery. The preferred treatment at present, according to the KEYNOTE-522 study, is pembrolizumab in combination with anthracycline, taxane, and carboplatin.

This study aims to identify potential drugs for the treatment of TNBC using a drug from each class of drugs currently available for its treatment as a comparator. This study will utilize in-silico drug discovery methods to perform target-based and ligand-based virtual screening for the main purpose of novel compounds for triple-negative breast cancer.

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