EXECUTIVE SUMMARY

There is need for patient-centered, high-quality, and value-based care in the management of cancers in general. This includes the whole continuum from prevention, timely access to screening, diagnosis, treatment and palliative care services; and improving rehabilitation and support activities.

Practicing Oncologists are invariably asking questions around value-based care in oncology. For the first time, KESHO held a virtual forum looking critically at the value of cancer care in Kenya and Africa. The 2020 Kenya International Cancer Conference looked at Value as a measure of a patients' expectations of care and how this can be translated into cost effectiveness, and how these two factors can be combined in a low-resource setting.

The conference had an impressive line-up of presenters from across the globe sharing their experiences on how HCPs can continue to deliver quality care as well as the considerations for providing the quality of care in the Covid environment. The virtual event incorporated several breakout sessions including site-specific discussions around delivering care as well as the related challenges, actual management of cancer patients, policy and advocacy, palliative care, nursing care in oncology, haematological conditions.

The event also highlighted some of the challenges around delivering care and how to restructure and build systems that deliver effective care. Also, part of the Agenda was a collaborative session with AORTIC where presenters shared anecdotal experiences around research, education, training and building regional networks.

There is an increasing consciousness around how we as a continental community can generate our own evidence and look at what our best practice is, and a critical component to this is setting up our own clinical trials in Africa. Some of these issues were discussed by the conference keynote speakers who gave their experiences on clinical trials in Africa and offered practical tips that HCPs can use to build up our continental collaborations and gather robust clinical data for improved patient outcomes.

The conference also included a session looking at media and the oncologist which touched on effective communication with patients, effective communication with media and how to effectively package key messages for maximum impact.

The 2020 Kenya International Cancer (Virtual) Conference attracted over 400 attendees from various countries around the world including Kenya, Nigeria, Ghana, Rwanda, Ethiopia, Egypt, UK, USA, China, SA, Netherlands, Sudan, India, Tanzania, Libya, Zimbabwe, Germany, Argentina, Switzerland and many others. The 2020 KICC programme featured talks from leading specialists as well as primary care professionals from across Africa and the world.
CONFERENCE SESSIONS:

WELCOME REMARKS – (Conference Chair)
Dr Andrew Odhiambo, Consultant Medical Oncologist and Lecturer, University of Nairobi

Dr Odhiambo kicked off by welcoming all the attendees to KESHO’s first virtual conference and briefly described the objectives of the event, i.e.

1. To promote value-based care in oncology practice.
2. To promote multidisciplinary treatment or African cancer patients and showcase current developments in cancer research in SSA.
3. To advocate for early integration of palliative care in oncology
4. To provide fora to discuss new quality care delivery during a pandemic

He requested all delegates to actively participate in the sessions, confirming that the 2020 programme will comprise two plenary sessions with multiple breakout sessions running simultaneously. The platform also offers networking opportunities for delegates to meet, greet and chat with fellow delegates; also on offer is very vibrant virtual exhibition where delegates can interact with service providers and view promotional offers.

Dr Odhiambo went on to thank all the main sponsors for making the conference a reality and thanked the organizing committee for all the hard work that went into planning and actualizing the event. He stated that the presentations will be available on the platform for one calendar month after the date of the conference, and once again encouraged maximum participation. He noted that registration is free to attend.

Finally, Dr Odhiambo acknowledged the conference partners – the Kenya Hospices and Palliative Care Association (KEHPCA), The Oncology Nursing Chapter (ONC) and the African Organisation for Research and Training in Cancer (AORTIC) as well as all the speakers and presenters from both the international and local communities.
We treat patients with cancer to help them live longer and live better. In the last KICC conference we talked about value in care in terms of assessing clinical benefit of new therapies using the ESMO scale and ASCO clinical benefit framework, and Choosing wisely US, Canada, India, Africa.

What do we mean by high value care? High-value care means providing the highest quality care at the lowest cost.

**What is the relationship between value and quality?**

![Value equation](value_equation.png)

*Value can be improved by either increasing quality or decreasing cost*

Quality Chasm: enormous gaps between what is achievable in human health and where global health stands today. We know that there have been significant improvements in health outcomes in high income countries and low to medium income countries. At the same time billions of people will have access to care of such low quality that it will not help them and indeed often will harm them.

According to WHO Health systems financing the path to universal coverage. Geneva, Switzerland: 2010, 20% to 40% of all health spending is currently wasted through inefficiency.

**Definition of Quality** - the degree to which health services for individuals and populations will increase the likelihood of desired health outcomes and are consistent with current professional knowledge.
What is Competent Care?
Competent care is evidence-based care which includes systematic patient assessment (giving proper history and physical), assessing for toxicity, accurate diagnosis, provision of appropriate, value-based treatment and proper patient counselling.

Common quality problems include:
- **Overuse** is the failure to provide a health care service when it would have produced a favorable outcome for a patient. Example: Not using neoadjuvant therapy for rectal, breast and bladder or underuse of supportive care measures.
- **Underuse** occurs when a health care service is provided when its potential for harm exceeds the possible benefit. Example: Giving chemotherapy in the last month of life, overusing chemotherapy in hormone receptor positive breast cancer or overuse of supportive care measures.
- **Misuse** occurs when an appropriate service has been selected but a preventable complication occurs, and the patient does not receive the full potential benefit of the service. Example: Avoidable complications of surgery or medication use. Not adjusting for renal or hepatic dysfunction.

Underuse, Overuse, Misuse According to an African Oncologist

**Underuse in Clinical Cancer Care:**
- Hormonal therapy for luminal A breast cancer
- Olanzapine for N&V
- Calcium supplements for ADT, AI, and Zoledronic acid
- Neoadjuvant chemo for rectal cancer
- Complete neoadjuvant therapy for LABC cancer especially TNBC
- IMODIUM and 5HT3 in RT to and pelvis
- Mg So4 and K check in Platinum chemotherapy to replace
- Palliative care intervention in advanced cancer
- Neoadjuvant therapies for muscle-invasive bladder

**Overuse In Clinical Cancer Care:**
- Combination chemotherapy in stable metastatic breast cancer
- Combination chemotherapy for metastatic sarcoma
- Chemotherapy for melanoma, hepatocellular and renal cancer
- NK I in low risk emetogenic
- Repeat imaging in a known, metastatic cancer with poor prognosis
- Ca 125 post treatment surveillance in ovarian cancer patients
- Adjuvant ADT in low-to-low intermediate risk prostate cancer
- High dose steroids for brain mets and nausea and vomiting
- Carboplatin in GU malignancies
- Bevacicabum for breast cancer
- EMA co for low risk GTN
- Adjuvant chemotherapy for nasopharyngeal and some sarcomas
- Surgery in unresectable disease leaving behind positive margins

Misuse:
- Worsening neuropathy in patients with grade 2 baseline neuropathy
- Anti hER2 neu in patients with LVEF < 50
- Capecitabine in patient with MI
- CONTINOUS use of drug despite hypersensitivity history
- Adriamycin in combination with radiotherapy
- Palliative chemotherapy in end of life
- Palliative chemotherapy with PS 3
- Radiotherapy in completed resected nsclc
- Surgery in unresectable disease leaving behind positive margins

Harm of Overuse
I. Individual harm to patients and their family, including direct harm; direct downstream impact; and opportunity costs.
II. Harms to the health system and its organizations, including time, financial cost, personnel resources, overburdened emergency departments.
III. Deplete finite resources that could be redistributed to address other societal needs, which ultimately impacts population health outcome.

A new element of quality that has been emerging recently and is somewhat difficult to measure is lack of confidence in the system. This however can have many consequences if left unchecked, and can be identified by:
- Patients not seeking care
- Patients bypassing care: over-reliance on private sector, financial toxicity and medical tourism
- Weakness of primary care system: huge impact on prevention and early presentation
**Equity**

Equity is important in quality. The WHO definition of Equity is *absence of avoidable, unfair, remediable differences among groups of people, whether those groups are defined socially, economically, demographically, geographically or by other means of stratification*. Equity is achieved by selectively improving the health of those who are economically/socially disadvantaged, not by a worsening of the health of those in advantaged groups.

Who is vulnerable to poor-quality care?

![Diagram showing settings of care, conditions, and demographics]

We always talk about bad outcomes in sub-Saharan Africa, but let’s take a look at a high-income country and see what the lack of equity and lack of confidence in the system does:

In October 2019, the Global Health Security Index was announced in an effort to identify which countries were best prepared for pandemics and health crises. They assessed aspects such as prevention, detection and reporting, rapid response, health systems, compliance with international norms and risk environment. Unsurprisingly, the USA emerged at the top however when the Covid 19 pandemic hit the globe a few months later, the USA response was comparably poor up against other countries like Germany, South Korea etc. Part of the reason for this was a lack of equity.

In a large cohort in Louisiana, 70.6% of those who died were black, whereas blacks comprise only 31% of the population. Black race was not associated with higher in-hospital mortality than white race, after adjustment for differences in sociodemographic and clinical characteristics on admission.

Upon further analysis as to why the USA scored high on the index but performed poorly during the onset of the pandemic, the possible reasons were:

- lowest possible score on public confidence in the government
- Access: the US was ranked 175th globally due to its absence of laws mandating universal health care coverage and large numbers of underinsured and uninsured individuals.

Cancer care Ontario
Effectiveness:
**Definition** - providing services based on scientific knowledge to all who could benefit and refraining from providing services to those not likely to benefit (according to underuse and misuse respectively).

**Why is it important?** The cancer system in Ontario aims to provide effective cancer care based on best evidence. Effective cancer care means that patients receive evidence-based care that facilitates the best possible outcome for their health.

In Ontario, 94% of colon cancer resection reports show that 12 or more lymph nodes have been examined. This represents 3,394 reports. This exceeds the target of 90% and is in keeping with Cancer Care Ontario’s best practice quality guidelines.

**Tyranny of Metrics**
- The proliferation of indicators burdens health-care workers and systems.
- In sub-Saharan Africa, an estimated one-third of health-care providers’ time is spent on recording and reporting.
- Health facility assessments cost a minimum of $100 000 per national survey and typically many times that amount but are rarely used for national planning.
- Fragmentation of these and other data sources prevents the coherent assessment of health system performance, to say nothing of actions in response to the data.

**Problems with Overmeasurement in HIC**
- Increased the burden of measurement
- Fixation on the measure rather than the intent
- Reallocation of efforts towards meeting measurement targets away from other essential tasks
- Gaming (manipulation of the quality assessment systems)

Still, data is important. The survival gap between England and other European countries in mid 1990s led to strategic reform which resulted in improvement in the gap. However recently there has been a rising delivery of cancer care by private sector in the UK, and the collection of routine cancer data from private providers should now be mandated i.e., same reporting requirements.

**How do we know quality when we see it? Questions to ask…**

What is quality patient care? Can quality be measured? Who should be accountable for quality, individual clinicians or the healthcare system, the health plan or all of these? Is patient satisfaction relevant? How does it relate to efficiency?
Universal actions for improving quality of care illustration

**Measuring Quality**
- Opportunity 1: Measure effective coverage
- Opportunity 2: Fewer, better metrics
- Opportunity 3: Invest for country-led quality measurement

Care cascades break performance along the continuum of care to allow analysis of health system function. Cascades illustrate health system failures in functions such as diagnosis, retention, and evidence-based care, while linking system performance to patient outcomes.

### Navigate - Breast Cancer Pathway Map

<table>
<thead>
<tr>
<th>Prevention</th>
<th>Screening</th>
<th>Diagnosis</th>
<th>Treatment</th>
<th>Post-Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risk Assessment &amp; Prevention Guidance</td>
<td>Screening Risk Assessment</td>
<td>Assessment of Symptomatic Individuals</td>
<td>Ductal Carcinoma In Situ &amp; Invasive Breast Cancer</td>
<td>Survivorship</td>
</tr>
<tr>
<td>Average Risk Screening</td>
<td>Diagnostic Procedures</td>
<td></td>
<td>Distant Metastases</td>
<td>End of Life Care</td>
</tr>
<tr>
<td>High Risk Screening</td>
<td></td>
<td></td>
<td>Local and/or Regional Recurrence</td>
<td></td>
</tr>
</tbody>
</table>

**Recommendation**

Staging tests using conventional atomic (chest X-ray, liver ultrasound, chest-abdomen-pelvis computed tomography (CT) scan) and/or metabolic imaging modalities (positron emission tomography (PET)/CT, PET/magnetic resonance (MR), bone scintigraphy) should not be ordered routinely for women newly diagnosed with clinical stage I or stage II breast cancer and with no symptoms of distant metastasis, regardless of biomarker status.
Final Thoughts

What Can You Do?

Dr Bishal Gyawali (KEYNOTE SPEAKER 2)
Assistant Professor, Department of Public Health Sciences
Scientist, Division of Cancer Care and Epidemiology
Queen’s University, Kingston, Canada
TOPIC: Cancer Groundshot: The Concept of Prioritization in Oncology

Cancer Moonshot Recommendations Highlight Precision Medicine, Data Sharing, Genetic Screening

Sep 07, 2016 | Tuna Ray

NEW YORK (GenomeWeb) – A National Cancer Institute advisory board today discussed a number of recommendations for speeding the prevention, diagnosis, and treatment of cancer within a large-scale White House project.

Earlier this year, Vice President Joe Biden championed the Cancer Moonshot, a national effort to move the disease toward a cure in the next five years. Within this program, a group of researchers, oncologists, and patients

With all the different programmes that are constantly being undertaken in an effort to cure cancer, how many lives will actually be saved? The truth is, perhaps not as many as intended. For example, based on the JAMA Oncology paper in 2018, the percentage of patients (in HIC) that would benefit from precision medicine approach is only 5% and the percentage who would benefit from immunotherapy approach is just a little over 12%. The bigger issue that should be addressed is in fact access to basic, curative, cancer treatments like surgery

A Lancet Oncology Commission paper stated that surgery is essential for global cancer care in all resource settings. Of the 15.2 million new cases of cancer in 2015, 80% of cases will need surgery, some several times. By 2030, we estimate that annually 45 million surgical procedures will be needed worldwide yet less than 25% of patients with cancer worldwide actually get safe, affordable or timely surgery.

The same is true of radiotherapy we see huge disparities can access to radiotherapy machines particularly in LMICs.
People are not able to even afford trastuzumab. For the patients and oncologists of Nepal, the finding that palbociclib is effective in breast cancer is similar to the discovery of black holes - quite exciting from a scientific point of view, pointless from a practical point of view. Under such circumstances, practice of evidence-based medicine seems a far-fetched dream.

A recent article from India that talked about use of artificial intelligence for oncology and breast cancer treatment and discussed whether this can replace oncologists in different parts of the country, to me sounds like priorities have been misplaced.

Cancer groundshot therefore simply means the setting of proper priorities, being pragmatic and a common-sense approach to cancer control.

Another interesting paper published in the *Annals of Family Medicine* talked about the break-even point when medical advances are less important than improving the fidelity with which they are delivered. It is more important to be able to apply modalities that are proven to work than to come up with new approaches; it is more important to ensure that all patients in the world have access to surgery, radiotherapy and other life-saving treatments than to come up with new modalities to improve outcomes.

Cancer patients need better care not just more technology. LMIC’s shouldn’t make the mistake of inappropriately trying to copy paste approaches taken by HICs. Clinical research and clinical trials should be the priority is LMICs. The illustration below shows that research and trials are still predominantly being carried out in HICs.
The same applies to cancer control guidelines - guidelines from HICs are still being copied by LMICs and some of the barriers described are:

- Facilities are in adequate for guideline implementation
- Amount of information in the guidelines is too complex and overwhelming
- Physicians feel that guidelines are not applicable to their own settings
- Physicians do not feel that they have enough authority to change patient-care procedures
- Physicians are uncertain whether to believe the recommendations in the guidelines
- Physicians do not feel capable of evaluating the quality of the guidelines
- Insufficient time on the job to implement new ideas
- Physicians are isolated from knowledgeable colleagues with whom to discuss research
- Guidelines have methodologic inadequacies

Hospital staff will not cooperate with implementation

A retrospective study into the frequency and level of evidence used in recommendations by the National Comprehensive Cancer Network guidelines, beyond approvals of the US Food and Drug Administration:

Findings - The NCCN frequently recommends beyond the FDA-approved indications even for newer, branded drugs. The strength of the evidence cited by the NCCN supporting such recommendations this week. Our findings raise concerns that the NCCN justifies the coverage costly, toxic cancer drugs based on the week evidence.
How can we do more clinical trials in LMICs? And how can we find a common points of interest for both LMIC and HIC so that we can walk together?

Collaborating globally, but acting locally
As oncologists or policy makers working in LMICs some foundations of action should be observed:

- Locally tailored guidelines based on local priorities, accessibility and affordability
- Value-based care and policy approach
- Limit low-value care
- Increase access to high-value care

All the above can be built only on the solid foundation of critical appraisal skills.

Avoiding Wisely

Examples of low-value practices in oncology that contribute to financial toxicity are:

I. Using ramucirumab in the second line treatment of metastatic colorectal cancer
   Using anti-EGFR antibodies in the first line treatment of right sided metastatic colorectal cancer
II. Using cetuximab for concurrent use with radio therapy in locally advanced head and neck squamous cell carcinoma
III. Using single agent ramucirumab for second line gastric cancer
IV. Using G-CSF for the treatment of febrile neutropenia in non-high-risk patients
V. Using chemotherapy towards the end-of-life Testing CA-125 tests and CT scans for surveillance in ovarian cancer
VI. Using sunitinib for the adjuvant treatment of renal cell carcinoma
VII. Ignoring cheaper drugs in supportive care
We need a Center for Sense in Oncology!
In recent times, evidence-based medicine has been distorted. There is too much hype (e.g., animal studies, single arm, observational, even RCTs, new versus old, technomania) and hunch-based medicine coupled with limited patient and physician education. Likewise, there is too much focus on statistical significance rather than clinical meaning, using less than ideal controls, industry sponsored C-E study, subgroup analyses, non-inferior trials and spins and biases. Instead, we should start to readdress financial toxicity, sensible spending, drug repurposing, primordial and primary prevention.

PLENARY 1 - VALUE BASED CARE IN ONCOLOGY
Chairs: Dr Sitna Mwanzi and Dr Peter Oyiro

1. Dr Miriam Mutebi,
   Breast Surgical Oncologist and Assistant Professor
   Aga Khan University Hospital
   TOPIC: Introduction to Value Based Care in Oncology

Value-based care can be a very nebulous concept and HCPS are invariably trying to find the balance between measuring the expectation of care for our patients and the cost effectiveness of treatment. Dr Mutebi offered some practical insights (using breast cancer as a paradigm), giving considerations around:
- the concept of value-based care in the Kenyan setting
- levels of care and referral pathways that exist
- different strategies that can be employed, and
- next steps

Cancers are on the increase Nationally and data over the last 10 years shows 30-40% increase in the number of patients diagnosed, however our incidence and mortality ratio are still high despite ongoing efforts. Majority of our patients are still diagnosed with more advanced cancers, and we have younger populations of patients at the time of diagnosis.

There are a constellation of factors contributing to patients having to pay out-of-pocket for treatment, and though this has been mitigated somewhat by the NHIF, there is still a considerable amount that is covered by patients in order to complete their treatment journeys. Another factor is attributed to poor health systems and referral pathways where sometimes patients are engaging with the health-system but unfortunately, failing to have a diagnosis at earlier stages. In addition to this, there are the cultural barriers and perceptions that exist around cancer, and stigma and myths around treatment, as well as use of alternative medicines and therapies.

There has been a concerted effort to expand cancer services. Development of national cancer policies by the Ministry of health and the National Cancer Control Program who have been critical in bringing clinicians together to look at and develop screening and treatment guidelines, as well as diagnostic guidelines and expansion of these. We’ve seen an increase in the number of private and public cancer centres and there have been significant developments in medical and clinical oncology and palliative care dissemination. We have seen more training programs to increase awareness in the workforce and attempts to decentralized radio-therapy services with a number of counties now investing in radio-therapy services with more specialized diagnostics procedures and sophisticated scanning. Additionally, there has been increased public-private partnerships.
The spectrum of surgical services has also expanded ranging from the basic services like mastectomy for breast cancers to more specialized procedures like sentinel lymph node biopsy and complex reconstructive facilities for patients.

There are 6 levels of care and services in Kenya:

- Level 1 - Community Health Services
- Level 2 - Primary Care Services
- Level 3 - Primary Care Services but with additional support
- Level 4 - First Level Hospitals (County Referral Hospitals)
- Level 5 - Secondary Referral Level (specialized curative services)
- Level 6 - Tertiary Level Hospitals (highly specialized)

These form a by-directional referral pathway where primary healthcare services refer patients to the county and then to the national referral facilities, and backwards.

**What is the role of value in care?**
Undoubtedly, cancer care, diagnosis and treatment are extremely complex matters with varying considerations being made from patient to patient, and there are ever-arising concerns around cost-effectiveness. The question here is, how do we ensure value of care is upheld despite the patient’s ability to pay for his/her treatment and what are the ethics of practice surrounding this?

**Role of the Clinician**
The role of the clinician is to ensure that:
- correct, resource-appropriate treatment options are provided to the patient
- standards of practice are upheld
- there is shared decision-making

**Role of Policy**
- governance
- ensuring minimal standards, guidance and protocols
- implementation, monitoring and evaluation
- equity and access and how this ties in with UHC.

**Strategies: Need to Develop Africa-Specific Frameworks**
HCPs can assess benefits of new therapies using existing reference materials for example ESMO Scale and ASCO Clinical Benefit Framework, as well as looking at what are the best-buys we can have from a health systems perspective and what are harmful practices that can be avoided.

The aim with any treatment is to ensure that patients have longevity and have a better quality of life. The endpoints of measurable clinical and biological findings that are used for the development and assessment of treatment options can include patient-centered and tumor-centered clinical endpoints, with a more recent uptake of patient-reported outcomes.

**Consolidating Care in Kenya**
The National Cancer Institute of Kenya has a critical role in governance, accreditation of cancer centres, monitoring and evaluation of implementation strategies and addressing access and affordability of care concerns.
Critical Links
Breast cancer care (like any other type of cancer care) is a multi-disciplinary endeavour and there is a critical link around diagnostics in both family medicine and primary care clinicians and health workers, and strengthening referral pathways in order for patients to access care.

Sadly, the Covid pandemic has brought about a worsening of disparities and delays in treatment and diagnosis, and all these have an implication on the subsequent value of care received by patients.

Going forward some of the proposed interventions should be around development of clear policies that ensure protection patients, private and public hospital-lead initiatives along with developing national centres for testing.

In summary, a Multidisciplinary approach to ensuring value for our patients is key and there are opportunities to expand care especially around the primary care setting. In terms of adding value, patient-care education initiatives are extremely important the pandemic has unearthed an opportunity for us to reconsider and rethink care delivery strategies to incorporate value.

2. **Prof Fredrick Chite,**
   **Consultant Physician, Chief Medical Oncologist and Hematologist at the International Cancer Institute (ICI)**
   **TOPIC:** Measuring Clinical Outcomes in Oncology

**Presentation Outline:**
- Definition of terms
- Clinical Outcomes in Oncology
- Measuring of Clinical Outcomes in Oncology Barriers to measurement of clinical outcomes in oncology
- Recommendations

Traditionally we have measured clinical outcomes in oncology vis-à-vis looking at unintended consequences of treatment or intended consequences. This means for unintended consequences we end up measuring morbidity and mortality in oncology which gives a rough idea if the treatments or interventions used are better compared to other data sets. There are also intended consequence measures which include survival, recurrence rates, progression-free survival etc. However, when measuring outcomes there are various aspects that should be considered owing to the complexities in oncology and disease-specific measurements.

These processes can also be looked at in terms of non-uniform and non-structured vs structured measurements, as well as use of multiple data sets which will offer some level of measurement of outcomes.

The need for additional staff bearing in mind the current work overload on HCPs is also an important factor to consider. Also worth mentioning is that many of these measurements are not mandated by regulatory bodies.

**Types of Oncology Outcomes**
- Oncology Specific Outcomes
- Functional Outcomes
- Patient-Related Outcomes
- Quality of Life Outcomes
• Adverse Events - toxicity, complications e.g., Post-Op, Post-RT, Post-Systemic Therapies

**Major Clinical Outcome Measures in Oncology**

• Measures of Survival from an intervention standpoint.
• Clinical evaluation scales that measure outcomes for example RESIST criteria ECOG SCALES/PS and Adverse Events grades 3+ toxicities, and Treatment Response Evaluation at the end of therapy.
• Direct Measures of Disease-recurrence, progression PFS, tumour mass etc.
• Patient-reported data - standardized measures of QoL, Disease-related SxS, ADL.
• Treatment delivery-derived measures - cycles on time, optimal doses, optimal durations, dose reductions regimens etc.
• Health-care encounters-derived measures - ER visits, LTFU, last encounter by HCP etc.

**Patient-Centred Outcomes**

This is becoming more and more useful and more engrained into the patient set-up platform that is now being practiced. Looking traditionally, patient satisfaction, decision regret, patient preference and health-related quality of life from a patient’s perspective was not really included as a measure of outcomes for clinical performance, albeit very important. Interpersonal aspects, technical quality, accessibility/availability, patient convenience, financial concerns, communication, efficacy, respect, time spent, and concern noted at a health care encounter are all important components to be included in the matrix of measuring clinical outcomes in oncology.

**Barriers and Opportunities**

I. Developing Measures - Generic Vs cancer-condition specific: How can we develop these measures? There is an opportunity to craft measures that are very relevant to the area in which a healthcare professional is practicing and where a patient is, and it is also important to incorporate standards within these measures.

II. Developing the tools - do we use existing tools Vs designing tools, particularly in low-resource settings.

III. Data collection and synchronization of data and ensuring that data is synchronized across various clinical platforms.

IV. How do we collect patient reported outcomes? If patients are given the role of collecting this data on their own there must be a standardized method used to report outcomes.

V. Ensuring guidelines are universally adopted.

VI. Availability of analytic skills and technology.

VII. Cost.

VIII. Patient advocacy and health literacy.

**Recommendations**

• Adapt and adopt a set of outcome and quality standard measures in existence and standardize this for the population, served with input from stakeholders which include patient groups, professional associations, organizations e.g., ICI, KESHO, AORTIC.

• Provide highest quality of cancer care to prolong life in a meaningful manner as judged by an informed patient.

• Begin with a limited prioritized outcome measure tool and expand as appropriate.

3. Dr Alfred Karagu
   Chief Executive Officer
   National Cancer Institute of Kenya, Ministry of Health
   TOPIC: Role of Leadership in Driving Quality Agenda
**Why Does It Matter?**

In Kenya, we are seeing an increase in burden of cancer. We are seeing a growing number of reported cases and an equally growing number of deaths as compared to high income countries.

The WHO Framework around cancer care navigation shows a whole picture from prevention, to diagnosis and screening, to treatment, to follow up/survivorship care, to end of life care. It is important to consider that quality of care is important at all these stages.

![The WHO Health Systems Framework](image)

How best can we approach the issue of “quality”? One way of doing this is by looking at the WHO Health Systems Framework because for cancer care to be well-delivered, the health system must be functioning optimally with special considerations paid to the human workforce, financing, governance etc.

One of the main foundations when discussing quality is our legal framework. The Kenya Constitution has elements of quality infused into it - the Bill of Rights Article 43 talks about the Right to Health and about the Right to the highest attainable standards of healthcare. Similarly, the Cancer Prevention and Control Act of 2012 has described some key aspects that have a bearing on quality of care:

- Promote public awareness about the causes, consequences, means of prevention and control of cancer.
- Extend to every person with cancer full protection of his human rights and civil liberties.
- Promote utmost safety and universal precautions in practices and procedures that relate to the treatment of cancer.
- Positively address and seek to eradicate conditions that cause and aggravate the spread of cancer.
- Promote access to quality and affordable diagnostic treatment services for persons with cancer.
- Ensure sustainable capacity for the prevention and control of cancer.
Policy Framework
The NCI has in place very strong policy frameworks all of which provide a solid foundation to help in the improvement of quality of care, e.g., the Kenya Cancer Policy, National Cancer Control Strategy, Kenya National Cancer Treatment Protocols, National Cancer Screening Guidelines, National Guidelines for Establishment of Cancer Management Centres in Kenya.

Quality At Different Levels
Quality transcends various levels i.e.:
I. National Level - policy formulation, setting standards and mentorship/capacity building.
II. County Health Management - Setting quality improvement targets, resource allocation and monitoring and evaluation.
III. Health Facility Level - institutionalize quality care MDT’s, SOP’s, quality assurance systems and resource allocation.

Attaining the Quality Agenda
In terms of Human Resources, it is imperative to deploy the right numbers of workers with the appropriate skill sets and equally, supporting continuous professional development for staff. Another important factor is the availability and affordability of appropriate medicines and technology to drive the quality agenda. One must also consider financing and resource-allocation in quality improvement. And finally, leadership at all levels must create demand for information around quality. As we look at numbers of patients-in and revenue generated, we must extend that evaluation to include accurate measures of quality of care.

Opportunities that can help enhance Leadership
- Growing political goodwill to support cancer care and advocating for greater focus on quality.
- Interest from different stakeholders and investigating opportunities for partnerships and collaborations.
- Leverage on existing local capacity - academia, research institutions.
- Use of technology to bridge existing gaps - telemedicine, transcending geographic boundaries.

Challenges
As we consider opportunities and strengths, we must equally evaluate the challenges experienced in quality care delivery, such as,
- Health system inadequacies that compromise delivery of quality care.
- Increasing demand for cancer care services. Limited health expenditure in cancer control - much less invested in quality improvement.
- Inadequate cancer research capacity - limited data on what works in the local context.
- Poorly coordinated advocacy efforts for political and social action.
- Socio-cultural dimensions: patient related factors on quality care.

We cannot escape our ethical and legal obligations to providing quality care and at the base of all of it, is the importance of having the right kind of leadership that will support the entire system to enable provision of quality care.
4. Prof. Margaret Fitch  
Lecturer, Consultant Researcher  
Faculty of Nursing, University of Toronto  
TOPIC: Cancer research: A tool to guide quality care

Presentation Outline:  
This presentation will discuss:  
I. Research characteristics and benefits  
II. Engaging in research activity  
III. Future requirements

What are some of the characteristics of research?  
Research is careful consideration of study regarding a particular concern or problem using scientific methods. It can also be described as a systematic inquiry to describe, explain, predict and control the observed phenomenon. Research involves inductive and deductive methods. It is a detailed study of a subject, especially in order to discover new information or understand the subject better. The focus should be on solving problems and pursuing step-by-step logical, organized and rigorous methods to identify problems, gather data, analyse the data and draw conclusions.

How can research help us?  
Research can help us describe or examine a phenomenon through identifying patient problems, needs and experiences and identifying gaps in care and unmet patient needs. Research can also help us understand what influences a phenomenon, for instance factors such as age, education, social support, personality and culture. Research can also help us test interventions to see what works and measure the effectiveness of symptom management or of an education program.

How can research drive practice?  
(CASE STUDIES)

A. Post-Op lesions  
Overview:  
Patients developed open skin lesions following cardiac surgery. A plan was developed to observe patient’s pre-op and post-op (72 hours) and record skin findings systematically.

Findings:  
- 10% of 410 patients develop skin lesions common site for lesion was the right buttock  
- High-risk patients were male who are slim built who had been in the hospital more than three days prior to surgery, and had been on longer pump time (on bypass).

Solution:  
Develop a protocol for using “egg crate” mattresses. Repeated observations reduced reduced skin lesions to 1%.

B. Patient Education  
Overview:  
A nurse observed that many patients were coming back into hospital with uncontrolled diabetes. A hospital-wide chart review and interviews with diabetic patients was contacted.

Findings:  
Patients were admitted to many different units and not received teaching about diabetes.
A large proportion had barriers to learning, poor eyesight, hard of hearing, no reading ability and poor English

Solution:
Designed a picture book about diabetes and managing it at home.
Designed a process for patients in all parts of the hospital to receive teaching.

C. Fatigue
Overview:
Upon review of literature about cancer patient needs it was found that fatigue was very common, however patient health records and charts when reviewed revealed very little record of fatigue.

Findings:
- After interviewing patients more than 75% had fatigue and were frustrated and worried about it.
- Interviews with nurses revealed that they were not aware of fatigue as an issue and had no time to assess it within the short clinic visits.

Solution:
Design a brief tool to measure fatigue with patients, by use of images, colour and two questions to help patients identify and measure their fatigue.

D. Cancer patient perspectives on quality care
Overview:
Post-discharge patient satisfaction surveys why are used to capture information from patients at the end of the treatment. Patients were asked to think back to their hospitalization and identify what was important to them.

Findings:
Responses were:
I. to be treated with dignity and respect
II. clear compassionate communication with healthcare providers
III. access to relevant, timely information
IV. their needs taken into account in planning care

Conclusions:
- Communication, consistency and ongoing interactions with staff were essential for a positive experience, but needed improvement.
- Agencies/hospitals need processes that provide timely feedback from patients regarding care delivery.

How can we use research in practice?
Own Practice - Using research for our own care for individual patients, or as a team, or at institutional level. Research can also be used to know what to look for during assessment, to identify what might put a person at risk and finally to inform which interventions to offer.
Teams/Units/institutions - Research can help identify gaps in care and use systematic approaches to gather feedback. Research findings can be used to design procedures, approaches and policies to improve care.

How can one be involved in Research?
- Read research-based articles in your area of practice.
- Learn how to critic research and identify what is relevant to your practice.
- Be curious about what is working and what is not working in your practice setting.
• Consult the literature when you are developing a procedure or policy or new patient education program.
• Engage in quality improvement initiatives (PDSA cycles).

**What needs to happen to foster research-based practice?**

**Conduct** - more research needs to be done about relevant topics.

**Foster** - clinical environments need to foster curiosity and lifelong learning.

**Support** - leadership needs to support engagement in research-oriented activity. **Engage** - nurses need to engage in professional development related to research and advanced education.

5. **Prof. Nicholas Othieno-Abinya**
   **Professor of Medicine and Medical Oncologist**
   **University of Nairobi**
   **TOPIC: Therapeutic Landscape of Immune Check-Point Inhibitors in Oncology**

New cancer drug developments can be complex, expensive and with low success-rate. One can screen or develop thousands of molecules and only a few will end up on the bench for the patient's consumption. The first treatment for cancer systemically was chemotherapy which was developed mainly in the 1940s to 1960s followed by targeted therapies for cancer treatment, mainly hormone treatment for breast cancer developed in the 1960s and 1970s. Thereafter immunotherapies were tried (mainly cytokines) and clinical trials were conducted in the USA (particularly for melanoma by Prof Rosenberg).

Towards the end of the century in the year 1990 to 2000, small molecule inhibitors were developed, mainly Imatinib for chronic myeloid leukaemia and other cancers.

More recently immunotherapies have become popular in the treatment of cancer. Immune checkpoint inhibitors are modulators of antitumor T-cell immune response, and the key players are:

• T Cells
• Antigen presenting cells
• Tumour cells

Their interaction activates either inhibitory or immune signalling pathways. Immune checkpoints that induce negative signals to T cells are:

I. Cytotoxic T lymphocyte 4 (CTLA-4), CD 152
II. Programmed cell death protein (PD-1) - CD 279
III. Lymphocyte-activating gene 3 (LAG-3)
IV. T cell immunoglobulin and mucin domain 3 (TIM-3)
V. V-domain immunoglobulin suppressor of T-cell activation (VISTA)

Inhibitory immune checkpoints play a vital role in maintaining immune self-tolerance. Negative co-stimulatory signals help to prevent T cells from showing autoimmune reactions. Co-stimulatory immune checkpoints enhance T cell expansion and survival. Upon activation the PD-1 receptor can be upregulated on T cells and can interact with two ligands - PDL-1 and PDL-2. Once bound to its ligand, PD-1 confers a negative signal to effector T cells, thereby inhibiting their cytotoxic functions.

CTLA-4 and PDL-1 are usually highly expressed in intratumoral T cells. Their stimulation leads to inhibition of anti-tumour T cells hence tumour progression.

**Immune Checkpoint - Targeted Therapies**
**Scientific Rationale:**
- Dampen the CTLA-4/B7 and PD-1/PDL-1/2 interactions
- Unleash the effector signals on T cells either at the priming or effector phases.

As opposed to tumour-targeted therapies, immune checkpoint treatments break the cancer immune-tolerance and restore T cell recognition against tumour cells.

**Differences in Action**
Chemotherapies and tumour-targeted therapies aim to directly destroy cancer cells. Immune checkpoint - direct therapies enhance the lymphocyte activation and allow a cytotoxic antitumor immune response.

The first immune checkpoint-targeted therapies developed in the clinic were humanized of fully human monoclonal antibodies with antagonistic properties against immune checkpoints such as CTLA-4, PD-1 and PDL-1. The tumour response induced by ICIs is more durable than observed with chemotherapy and tumour-targeted therapies. ICIs have demonstrated clinical activity against more than 30 cancer types in early phase trials.

Immune checkpoint inhibitors have a reasonably safe clinical profile but can however trigger autoimmune and inflammatory toxicities referred to as immune-related adverse events. The effects will usually have prolonged half-life therefore administration is not as frequent.

<table>
<thead>
<tr>
<th>Target</th>
<th>Name</th>
<th>Isotype</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anti-CTLA-4</td>
<td>Iplimumab</td>
<td>1gG1</td>
</tr>
<tr>
<td></td>
<td>Tremelimubab</td>
<td>1gG2</td>
</tr>
<tr>
<td>Anti-PD1</td>
<td>Nivolumab</td>
<td>1gG4</td>
</tr>
<tr>
<td></td>
<td>Pembrolizumab</td>
<td>1gG4</td>
</tr>
<tr>
<td></td>
<td>PDR001</td>
<td>1gG4</td>
</tr>
<tr>
<td>Anti-PDL-1</td>
<td>Atezolizumab</td>
<td>FcMut 1gG1</td>
</tr>
<tr>
<td></td>
<td>Durvolumab</td>
<td>FcMut 1gG1</td>
</tr>
<tr>
<td></td>
<td>Avelumab</td>
<td>1gG1</td>
</tr>
</tbody>
</table>

**Predictive and/or Prognostic Biomarkers of (potential) Clinical Relevance:**
- PDL-1 staining (for some tumours)
- Inflammatory tumours and CD8+ T cells
- Mutational load
- Mismatch repair status
- Blood biomarkers - poor prognosis in high neutrophil/lymphocyte ratio
- Microbiota
- Clinical applications (from 2011)
- Melanoma
- NSCLC
- RCC
- Urothelial cancers
- H/N cancers
- Squamous cell cancers
- HL
- Merkel cell carcinoma
- HCC
- Gastric Cancer
- A range of MSI-high cancers
- Oesophageal cancer
- Triple negative breast cancer (pembro)

Anti CTLA-4
Ipilimumab started in 2011 for melanoma, first as a single agent then in combination with nivolumab in 2015. The approval was based on the Check Mate 067 trial:

<table>
<thead>
<tr>
<th>Agent</th>
<th>ORR Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ipilimumab</td>
<td>21%</td>
</tr>
<tr>
<td>Ipilimumab + Nivolumab</td>
<td>72.1%</td>
</tr>
</tbody>
</table>

Overall survival with ipilimumab alone was 19.9 months and has not yet been reached with combination in 2017.

Previously untreated or advanced metastatic renal cell carcinoma III Check Mate 214 trial showed:

<table>
<thead>
<tr>
<th>Arm</th>
<th>PFS</th>
<th>OS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ipilimumab single agent</td>
<td>8.4 months</td>
<td></td>
</tr>
<tr>
<td>Ipilimumab + Nivolumab</td>
<td>11.6 months</td>
<td>26 months</td>
</tr>
</tbody>
</table>

Anti PD-1:

<table>
<thead>
<tr>
<th>Condition approval</th>
<th>Agent</th>
<th>Trial supporting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Melanoma metastatic</td>
<td>Nivolumab</td>
<td>Check Mate 066</td>
</tr>
<tr>
<td>Melanoma metastatic</td>
<td>Nivolumab</td>
<td>Check Mate 037</td>
</tr>
<tr>
<td>Melanoma Adjuvant</td>
<td>Nivolumab</td>
<td>Check Mate 238</td>
</tr>
<tr>
<td>SQCCa Lung</td>
<td>Nivolumab</td>
<td>Check Mate 017</td>
</tr>
<tr>
<td>Non Sq NSCLC</td>
<td>Nivolumab</td>
<td>Check Mate 057</td>
</tr>
<tr>
<td>RCC</td>
<td>Nivolumab</td>
<td>Check Mate 025</td>
</tr>
<tr>
<td>H/N SqC Ca</td>
<td>Nivolumab</td>
<td>Check Mate 141</td>
</tr>
</tbody>
</table>

Anti-PDL-1: Durvalumab/Atezolizumab

<table>
<thead>
<tr>
<th>Condition</th>
<th>Agent</th>
<th>Approving Trial</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advanced bladder</td>
<td>Durvalumab</td>
<td>Phase III DANUBE</td>
</tr>
<tr>
<td>Advanced bladder</td>
<td>Durvalumab</td>
<td>Phase II IMvigor</td>
</tr>
<tr>
<td>Metastatic NSCLC</td>
<td>Durvalumab</td>
<td>Phase II OAK</td>
</tr>
</tbody>
</table>

- OS benefit of 12.6 months vs 8.9 months for second-line treatment.
- Avelumab in metastatic urothelial carcinoma second line.
- Avelumab in metastatic Merkel cell carcinoma second line.

Conclusion
ICIs have revolutionized systemic cancer therapy. Tumours with high TMB, which have hitherto been difficult to treat have benefited immensely. Some responses have been of long
enough duration to justify referring them as cures. PD-1 inhibitors so far have taken the lion’s share of clinical application.

6. Dr Gustavo Milone
Physician in the Faculty of Medicine
Universidad Nacional de La Plata

TOPIC: Biosimilars Option and Adoption in Oncology

Working Definitions for Biologics
- Biologic: worldwide, a simple and practical definition of a biologic is a product the active ingredient of which is made in a living system.
- Biosimilar: A biological product that is approved based on a showing that it is highly similar to an already approved biological product and has no clinically meaningful differences in terms of safety and effectiveness from the reference product.
- Interchangeable Biologic: FDA designation that switching patients between such products can be made by a pharmacist or physician.

Biosimilar Uptake in the EU and the US (as of 1/2020)

<table>
<thead>
<tr>
<th>Biosimilar Category</th>
<th>US Penetration</th>
<th>EU/US Trend</th>
</tr>
</thead>
<tbody>
<tr>
<td>Filgrastim</td>
<td>72%</td>
<td>Flat/Flat</td>
</tr>
<tr>
<td>Epoetin</td>
<td>29%</td>
<td>Flat/Rising</td>
</tr>
<tr>
<td>Infliximab</td>
<td>14%</td>
<td>Rising/Flat</td>
</tr>
<tr>
<td>Etanercept</td>
<td>NA</td>
<td>Rising/NA</td>
</tr>
<tr>
<td>Rituximab</td>
<td>5%</td>
<td>Rising/Rising</td>
</tr>
<tr>
<td>Trastuzumab</td>
<td>17%</td>
<td>Rising/Rising</td>
</tr>
<tr>
<td>Bevacizumab</td>
<td>25%</td>
<td>NA/Rising</td>
</tr>
<tr>
<td>Adalimumab</td>
<td>NA</td>
<td>Rising/NA</td>
</tr>
<tr>
<td>Pegfilgrastim</td>
<td>29%</td>
<td>Rising/Rising</td>
</tr>
</tbody>
</table>

Biosimilars; Is it really an option?

Over the past decades, originators have demonstrated efficacy and safety, but during the last few years the increasing cost of new drugs has brought about big changes in the social security system and has generated differences in drugs access. Biosimilars appear to be the solution to have similar biologic molecules with same efficacy and safety at lower costs. Sales of biosimilars over the next five years could total $80 billion, depending on volume uptake and pricing discounts.

Since the passage of the Biosimilars Act (BPCIAct), $17 billion of biosimilar spending has been associated with savings of $37 billion in US. The next five years are expected to result in an almost five-fold increase in savings relative to the past five years, as newly approved biosimilars launch and existing biosimilars see continued uptake and price reductions with the same efficacy and safety for the patients. There have been 33 approvals across 13
molecules to date, though biosimilars for two molecules have not yet launched, and 108 additional biosimilars are in development across 22 other molecules in US market.

Recent biosimilar launches, bevacizumab, trastuzumab, and rituximab are set to reach nearly 60% share of volume for their respective molecules by the end of their second year on the market, showing significantly higher and faster uptake than prior biosimilars. This reflects efforts by providers to capture available savings, although their adoption has been highly heterogeneous, while patients have benefitted from biosimilars in the form of lower out-of-pocket costs.

The introduction of biosimilars in some cases has generated 2–4% incremental demand for the molecule. Large pharma companies, often with existing innovative biologic portfolios, have dominated the marketing of biosimilars to date, while smaller companies are developing biosimilars but are more likely to license products to a larger company for marketing. The most important part of biosimilars is to be a well-known company with a strong and scientific background and ethical behaviour.

**Biosimilars in Oncology the Argentine Experience**

- Rituximab biosimilar was launched in November 2014 by a local company, up to date there are more than 15,000 patients treated with the same efficacy and toxicity compared to the originator.
- We conducted a retrospective analysis with more than 400 patients between our local Rituximab biosimilar and the originator and no differences were found in terms of efficacy and toxicity with the same grading of adverse events and 4.0% of infusion reactions.
- Interchangeability was found in 4.3% of the patients with no differences in toxicity.
- Bevacizumab biosimilar was launched in December 2015 by the same local company, up to date more than 25,000 patients with different solid tumours were treated with the same profile of efficacy and toxicity than the originator.
- Both local bevacizumab and rituximab biosimilar has 60% of the share market.

**Conclusion**

In conclusion, during the last years more and more biosimilars have been developed and launched in the market in different countries. These increase the opportunities for patients' treatments with the same therapeutic results. The social security system all over the world benefits from these molecules in terms of decreased cost and includes more patients with the same benefits.

The increasing costs of the new biologic molecules is an eye-opener about patients' opportunities in terms of treatments in low-income countries. We as physicians must have a role in the use of these biosimilars in our patient populations.

FDA and EMA agencies have guidelines for the development and approval of biosimilars. These guidelines must be used in other countries. Scientific knowledge and ethical behavior are the most important steps in this process. Biosimilar sustainability improves patient access and physician prescription choice for safe and high-quality biologic medicines, in a framework that considers the ongoing needs of all stakeholders (patients, healthcare professionals/providers, payers and manufacturers). It also provides a means to manage existing healthcare budgets while protecting a healthy level of competition and supply.
GHP Oncology Partnership
Pfizer is collaborating with the American Cancer Society (ACS) and the Clinton Health Access Initiative (CHAI) on a program designed to expand access to an affordable portfolio of essential oncology treatments in Sub-Saharan Africa.

Oncology Partnership’s - 3 Pillars
ACCESS - Ensure affordable access to essential medicines, technology and infrastructure.
AVAILABILITY - Improve procurement planning and forecasting by leveraging innovative technology.
QUALITY - Ensure access to high quality, essential medicines and a secure supply chain.

Activities to Achieve the Pillars
- Forecasting & consolidate demand around quality products
- Competitive pricing to drive uptake
- Expedited regulatory pathways
- Link buyers and sellers; share tenders
- Standardized Treatment Guidelines
- Stock Management
- MR/HEOR data
- Provide high quality products at competitive price
- Dedicated scientific and commercial resources and expertise
- Manage distribution process

Eligible Countries
The product currently flows from Pfizer’s warehouses to local distributors and wholesalers to supply patients when ordered by hospitals and clinics in the following countries:
- Nigeria
- Rwanda
- Zambia
- Zimbabwe
- Ethiopia
- Uganda
- Kenya
- Tanzania
- Malawi

Cancer Access Program (CAP): objectives & benefits
Objectives:
- Consolidate the market around a small number of high-quality manufacturers
- Create more accurate forecasting and more predictable demand
- Navigate potential barriers to entry, including regulatory requirements and waivers
- Support international tendering and reduce middlemen mark-ups

Benefits:
- Shift this rapidly growing market to affordable, high-quality products
- Strengthen direct linkages between manufactures and government buyers to reduce middlemen
- Create more accurate forecasting and more predictable demand
- Raise awareness amongst global community of access challenges and partner efforts
- Reach substantially more patients with quality chemotherapies

Cancer Access Program (CAP): Challenges
- Strict regulatory requirements and inability to achieve waivers in some countries
- Small volumes
- Small time windows for bidding on tenders
- Delays in country tendering and ordering
- Lack of awareness of CAP by local distributors and high mark-ups
- Delays in confirming prices and delivery dates
- Challenges to engage with government in some countries

Prof. Folakemi Odedina (KEYNOTE SPEAKER 3)
Professor in the Colleges of Pharmacy and Medicine
University of Florida.
TOPIC: Clinical Trials in Africa: Challenges and The Future

Overview
- Background: Clinical Trials Definition
- Clinical Trials in Africa: The Good, The Bad and The Ugly
- Clinical Trials: Emerging & Operational Issues

BACKGROUND – CLINICAL TRIALS (NIH)
Defined as a research study in which one or more human subjects are prospectively assigned to one or more interventions (which may include placebo or other control) to evaluate the effects of those interventions on health-related biomedical or behavioural outcomes.”

Types of Clinical Trials

Mechanistic: designed to understand a biological or behavioural process, the pathophysiology of a disease, or the mechanism of action of an intervention.
Exploratory: performed early in Phase I, prior to dose escalation and safety and tolerability trials.
Feasibility: the product is used in a small number of human patients who are carefully monitored. Interventional: participants are assigned to receive one or more interventions (or a placebo or no intervention) so that researchers can evaluate the effects of the interventions on biomedical or health-related outcomes.
Behavioural: focused on evaluating changes to participants' behaviour.

Oncology Clinical Trials
Defined as any research study that prospectively assigns human participants to one or more health-related interventions [anywhere in the cancer care continuum] to evaluate the effects on health outcomes.

CLINICAL TRIALS IN AFRICA: THE GOOD, THE BAD AND THE UGLY

The Good
- There is a large pool of patients/participants for recruitment - Faster patient recruitment and short timelines
- Low operational cost
- Reduced regulatory barriers
- Unique opportunities for brand exposure of therapies
The Bad
1. Lengthy approval process to start a clinical trial
2. Recruitment issues, especially for participants in rural areas
3. Patient adherence issues
4. Challenges with follow-up (especially with geographic challenges)
5. Challenges with ethical review and approval
   • Standard of care issues
   • Limited access to health care
   • Limited access to skilled clinical trials workforce
   • Availability of treatment/therapies
   • Cultural challenges
   • Conflict of interests - Clinical trials key personnel
   • Political instability - Including at academic settings

The Ugly
Although it is the “Gold standard” to develop therapeutic interventions, clinical trials is not required to introduce new therapies to most African countries.

What does this mean for Africa?
Without sufficient representation of Africans in clinical trials, optimal prevention, diagnosis and treatment decisions cannot be made for them.

CLINICAL TRIALS: EMERGING & OPERATIONAL ISSUES

Landscape of Oncology Clinical Trials in Africa

[Map of Africa showing clinical trial locations]
- Featuring 109 open oncology trials from several registries
- Egypt had the most oncology clinic trials and the highest number of sponsor institutions. Most of the trials were on breast cancer.
- Top sponsor of oncology clinical trials was academic institutions.

**SWOT ANALYSIS OF ONCOLOGY CLINICAL TRIALS IN AFRICA: A TOWN HALL REPORT FROM THE GLOBAL CONGRESS ON ONCOLOGY CLINICAL TRIALS IN BLACKS**

SWOT factors identified included improved political commitment, multidisciplinary and interdisciplinary collaborations, funding and infrastructure.

<table>
<thead>
<tr>
<th>Strengths</th>
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<tbody>
<tr>
<td>Community engagement and patient advocacy</td>
</tr>
<tr>
<td>Global focus on engagement of black populations</td>
</tr>
<tr>
<td>Improvement in multidisciplinary and transdisciplinary collaborations among biomedical scientists in Africa</td>
</tr>
<tr>
<td>Government-based initiatives for biomedical research</td>
</tr>
<tr>
<td>Opportunities</td>
</tr>
<tr>
<td>Genomic variety in African populations</td>
</tr>
<tr>
<td>Ability to study common cancer types in a large population</td>
</tr>
<tr>
<td>Institutional collaboration</td>
</tr>
<tr>
<td>Change to supportive attitude for clinical research among government officials</td>
</tr>
<tr>
<td>Community and public engagement</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Weaknesses</th>
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</thead>
<tbody>
<tr>
<td>Poor research funding</td>
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<tr>
<td>Inadequate national policymaking</td>
</tr>
<tr>
<td>Institutional capacity constraints</td>
</tr>
<tr>
<td>Personnel and human resource limitations</td>
</tr>
<tr>
<td>Patient recruitment issues</td>
</tr>
<tr>
<td>Regulatory concerns</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Threats</th>
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</thead>
<tbody>
<tr>
<td>International exploitation or helicopter science</td>
</tr>
<tr>
<td>Lack of understanding of culture, leading to poor study design and interpretation of data</td>
</tr>
<tr>
<td>No initiative to include African investigators in all steps of clinical trial development and implementation</td>
</tr>
<tr>
<td>Exploitation of weak ethical regulations</td>
</tr>
</tbody>
</table>

**ENGAGING PATIENTS IN CLINICAL TRIALS; PATIENT- CENTRED APPROACHES**

- Clinical Trials cannot take place without patients or participants.
Engaging patients is a critical operational issue for clinical trials in Africa. The involvement of patients “bring unique lived expertise and value” and essential to ensure their representation as research advocates.

**Innovative Use of mHealth and Clinical Technology for Oncology**
There lies a great opportunity for mHealth and Clinical Technology to transform oncology clinical trials in Africa. However, caution must be taken to ensure appropriate use and there is need to evaluate the application context, impact and cost-effectiveness.

**Partnerships and Collaborations; The Right Alliances**
Partnerships and collaborations among stakeholders can help attract clinical trials to Africa and must involve regulatory agencies, clinicians, researchers, sites, patients, and sponsors. Development of certification and continuous training for clinical trials workforce is a necessary factor, and a single regulatory jurisdiction for Africa as solution for standardization and uniformity was also proposed.

**Historical Perspectives on Ethical and Regulatory Aspects of Human Participants Research: Implications of Oncology Clinical Trials in Africa**
- Highlights importance of ethical principles of **autonomy, beneficence, and justice** to prevent medical abuses on human participants.
- Regulations were put in place to protect the rights and welfare of human participants and are governed by research ethics boards.
- Sub-Saharan Africa has a diverse and complex regulatory environment – Presents challenges that hinder oversights and protections and lead to improprieties that disproportionately affect vulnerable populations.
- Need to continue to develop clinical trial best practices across Africa.

**Operational Strategies for Clinical Trials in Africa**

<table>
<thead>
<tr>
<th>Category</th>
<th>Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Funding</td>
<td>Increase funding for clinical trials</td>
</tr>
<tr>
<td>Regulation</td>
<td>Improve transparent clinical trial regulatory infrastructure and ensure consistent enforcement</td>
</tr>
<tr>
<td>Capacity building</td>
<td>Encourage international pharmaceutical companies to host clinical trials (investigational and postmarket) in Africa, with the goal of ensuring cancer drugs are safe and efficacious in African ethnicities</td>
</tr>
<tr>
<td></td>
<td>Build clinical trial capacity</td>
</tr>
<tr>
<td></td>
<td>Curate a database of African sites capable of conducting clinical trials that meet international standards</td>
</tr>
<tr>
<td>Africa-centric approach</td>
<td>Encourage clinical trials on local innovations, including traditional medicines, and for Africa-specific health issues</td>
</tr>
<tr>
<td></td>
<td>Create an Africa-wide clinical trial network to support collaboration and create a continent-wide strategy</td>
</tr>
<tr>
<td></td>
<td>Leverage technology to improve clinical trial efficiency and effectiveness</td>
</tr>
<tr>
<td>Patient engagement</td>
<td>Improve patient education, awareness, and engagement</td>
</tr>
<tr>
<td></td>
<td>Promote patient recruitment and retention models</td>
</tr>
</tbody>
</table>

**Get Involved: AORTIC Clinical Trials SIG**
- Promote research culture amongst African health professionals
- Educate researchers on the essence of adhering to good practice
- Improve the quality of research from the continent
- Create a consortium of researchers working within Africa to enforce collaboration and expand activities and infrastructure
• Inculcate research as a basis for evidence-based approach to the cancer burden in Africa
• Serve as a guide to conduct clinical trials in Africa

CONCLUSION

The global COVID19 pandemic exposed the vulnerability of most African countries on preparedness for clinical trials. It revealed the threats of “guinea pig” syndrome from scientists outside Africa with French doctors proposing to test COVID19 vaccine in Africa although there is lower incidence in African countries compared to France.

African investigators need to take the lead on clinical trials in Africa while collaborating with other stakeholders within and outside Africa.

Prof. Delva Shamley (KEYNOTE SPEAKER 4)
Director Clinical Research Centre Faculty of Health Sciences
University of Cape Town South Africa

TOPIC: Clinical Trials in Africa: Achieving Parity of Esteem; A Quality Management Ecosystem

Overview of the current situation:

• Poor government commitment to health systems
• Poor infrastructure and capacity
• Poor consideration of local cultural practices when brought to Africa
• Low confidence from sponsors (Grant organizations and Industry)

The consequences of these factors are:

• Limited access to drugs of potential impact
• Limited knowledge of response to drugs due to local gene variations
• Gap in infrastructure and capacity: Cannot meet GCP, limits investigator led trials
• Sponsors do not see valid data emerging from poor research/clinical environments

A Solution: African Clinical Trials Consortium

To provide a Quality Management Ecosystem for CTUs in Africa.

The Ecosystem will include:
• Comprehensive QMS
• Capacity Training
• Accreditation of CTUs to GCP standards
• CTU Database for stakeholders
• Partnering and networking opportunities

How can the ACTC QMES Increase Confidence?

The aim is to improve the attractiveness of Africa, as a destination for Global Clinical Trials and increase the number of trials conducted. In the long term, we aspire to lift the number of clinical trials conducted in Africa to 2 CTU per country.
OBJECTIVES:

1. **Strategic presentation to Stakeholders**

Who are the stakeholders? These will include patient advocacy groups, pharmaceutical & medical device companies, NGOs/Government institutions (like MRC, Welcome Trust, NIHR, Gates Foundation, EDCTP, AREF, European Research Council), World Bank. Upon presentation, stakeholders will jointly lead advocacy to the African Union (AU) to include the project in the agenda of any up-coming AU meeting of African Heads of State – ultimately achieving government policy change in African countries.

2. **Obtain Stakeholder Support & Funding**

Forms of Support:
- Funding to support ACTC coordination center responsible for coordinating, managing, and achieving the objectives of the QMS.
- Funding to support development of CTUs
- Networking and advocacy support

3. **QMES: Developing CTU Capacity and Infrastructure**

- To partner with organisations interested in the project to provide personnel training to core competencies (AREF, AAHRPP, ACRES, TransCelerate).
- To develop and harmonize the QMS in every CTU. The ACTC to provide common:
  - Financial management system
  - Budgeting template and costing
  - SOPs
  - CTU software management system
  - Job descriptions
  - Operational templates e.g., source documents, pharmacy and Lab QA etc

**ACTC Model: Acknowledging GCP Readiness**

Once the CTU is well established, it needs to be accredited as GCP-ready in order to attract sponsors into Africa and give them confidence that data will adhere to a QMS. After opening, the CTU should then submit an online form to the ACTC who will review the online application and verify any open questions with CTU. The ACTC will then perform an on-site visit for inspection using specific criteria cover (expertise, continuity and stability of infrastructure).

Once approved, the CTU will continue to run in accordance with the QMS but will be subject to an annual audit to be carried out by the ACTC. In addition, external experts will be assigned to carry out checks.

4. **Creating Awareness**

- A marketing strategy will be drawn up
- Networking with stakeholders
- The Bush Telegraph – word of mouth

**ACTC Model: Additional Advantages**

- Growth in confidence
Multi-site trials reaching more sites in Africa through the network
Database on trials in Africa and shared registries

ACTC Progress

- ACTC Summit achieved consensus on need and model for platform
- Strategy document and Business plan in development
- 1 CTU in development phase

PLENARY 2 - CANCER CARE IN THE COVID ERA: LESSONS LEARNT & POST- COVID
Chairs: Prof Alice Musibi and Mr Fred Asige

Dr. Mary Nyangasi
Head of National Cancer Control Program, Ministry of Health, Kenya

TOPIC: The Effects of COVID-19 in a Devolved System of Cancer Care

In 2018 Kenya had 47,887 new cancer cases and 32,987 new deaths. Most of the cancer patients go for treatment late when the outcomes are poor and treatment cost is high. While 60% of all cancer patients in Kenya require radiotherapy, we still have a challenge in terms of access to treatment leading to only 23% who can get this care.

In line with the National Cancer Control strategy, which envisioned decentralization of cancer care the Ministry of Health has established ten functional county chemotherapy centres and three already being upgraded to radiotherapy centres.

When COVID—19 was declared in Kenya, it posed new challenges to cancer service delivery across the continuum of care because the infection has been shown to spread very fast and with worse outcomes in people with pre-existing conditions such as cancer.

In response to the pandemic, the Ministry of Health issued two policy guidance documents at various phases of the pandemic.
- All chemotherapy and cancer centres in the country to remain open and continue to provide services to optimize care of cancer patients amidst COVID-19
- When we were at the peak around mid-August, another guidance policy was issued for considerations in various areas in light of COVID-19 situations. Those in high burden areas were asked to start scaling down and those in low COVID-19 burden areas, the clinics would remain open.

Methodology

I. As part of the response to the pandemic, we conducted four webinars targeting primary healthcare workers on early detection, symptom recognition, management and palliative care.

II. We also distributed personal protective equipment to the regional cancer centres and national referral hospitals to ensure that there was continued service delivery for cancer patients.
Chemotherapy drugs were also distributed and redistributed to the regional cancer centres.

Observations

In March/April, there was a marked fall in the number of patients seen at the chemotherapy centres, especially the regions under lockdown. However, there was a gradual recovery on the number of patients seen at the centres from July coinciding with the issuance of the guidance we provided.

If we look at the results and findings in terms of the number of women who were screened for cervical cancer nationally, we note a significant fall from about 31000 to 11000 in March 2020. This coincides with the declaration of COVID-19 pandemic.

There is a gradual improvement in May with a sharp rise in July.

Conclusion

While covid-19 pandemic was a deterrent to provision of cancer care in our setting it presented an opportunity to leverage o the new regional cancer centres for continued access to care. Between March and August 2020, these regional cancer centres cumulatively attended to 7997 patients who would have otherwise missed their treatments.

Dr. Jamilla A. Rajab  
Senior Lecturer, University of Nairobi  
Consultant Haematologist at Kenyatta National Hospital  
TOPIC: Lessons Learnt and Post COVID-19 Childhood Cancer Management

Background in how Kenyatta National Hospital practices care of Children.

The Kenyatta National Hospital has a paediatric oncology unit of 00 beds but at any one time we have up to 130 patients. 90% of the care is provided by doctors in training. These are registrars that belong to the University of Nairobi, and they provide full time care to the patients and guided by 9 consultants.
The nursing staff is not dedicated as they double up care in other paediatric units in the wards at Kenyatta National Hospital. It is important to note that these nurses have no oncology training.

Our COVID Era Experiences

General
There was a gradual but slow implementation of interventions and guidelines in response to the pandemic by the hospital administration.

One noted that there was incomplete inclusiveness of all stakeholders in decision making and implementation of the interventions, therefore proving difficult to come up with effective strategies for patient care to optimize the care that was given.

There were budget shifts to perceived priority areas with resultant stock outs of essential drugs and chemotherapeutic agents, anti-emetics, consumables, and PPEs. There was lack of patient IEC materials that would give patients information in whatever role they were supposed to play in boosting the hospital’s interventions and guidelines.

Diagnosis
- There was delay in diagnosis because of stock outs in consumables like bone marrow needles.
- Prolonged turnaround time of outsourced high-level tests for diagnosis led to delayed patient diagnosis.
- Withdrawal of services by doctors in training. This was initiated by the fact that the University of Nairobi closed and unclear conditions in which the doctors we going to work in terms of provisions of PPEs and medical insurance.

Supportive Care
- Supportive care was interrupted by the withdrawal of doctors in training and by interruptions in supply of essential antimicrobials despite the hospital having a procurement plan of 3 months and the global supply was affected.
- Acute shortage of blood components at the beginning of the pandemic. This was mitigated by increased mobilisation of replacement donors by the hospital administration.

Definitive Treatment
Fellow consultant’s report increased in relapse rates especially of acute leukaemia and progressive diseases though we need to do a proper survey to generate supportive data.

Palliative Care Nursing Team
The nursing team reported setbacks in offering palliative care to patients due to restrained physical and emotional contact.

LESSONS LEARNT

I. Timely planning and development of guidelines with progressive reviews and effective comprehensive communication to all stakeholders is important to prioritize and strategize optimized care to our patients.

II. There is need for the hospital to deploy dedicated nursing and first on call doctors to the paediatric oncology unit that are core to the unit.
III. There is also need to set up comprehensive childhood cancer data base to optimize care in considerations of resources and logistics available to:
   a. enable tracing and follow up
   b. categorize patients in clusters on basis of e.g., accessibility to centres to modify/optimize care.
   c. Enable mobilization of social support for patients with highly curable aggressive malignancies to ensure timely care
IV. Come up with strategies to improve blood and blood products.
V. Enhance private/public partnerships.
VI. Increase the number of comprehensive paediatric childhood cancer care across the country to enable easy access to care during the pandemic

Dr Abdulkarim Abdallah
General Surgeon, Aga Khan University Hospital

TOPIC: Optimizing Cancer Care during a Pandemic

Presentation Outline
- The Challenge
- The Problem
- Strategies to optimize care

The Challenge

The pandemic has exposed the underbelly of medical systems the world over.

- **Resource Scarcity**: One of the greatest challenges posed is ensuring provision of oncological services specifically surgical in ensuring operative theatre capacity for existing patients and those newly diagnosed.
- **Exposure risk to caregivers and patients**: Risk of healthcare workforce due to viral exposure, respiratory illness and logistical issues.
- **Lack of centralization of dedicated oncology care**: The current construct of our healthcare system in which cancer management is integrated in existing hospitals systems means there is scarcity of cancer hubs in the region.
- Human and economic suffering consequent to pandemic

The Problem

The problems that these challenges pose are:

- Long term consequences of inadequate cancer care. This inadequacy is brought about by the need to reprioritize scarce medical services demanded by the crisis.
- Service reprioritization imposed to deal with the crisis. This means physicians are redirected to frontline workers to deal with the crisis which has had an effect on their effectiveness in their primary areas of practice and has increased vulnerability to COVID – 19.
- Burden on the effectiveness and sustainability of our healthcare system

Strategies to Optimize Care

One must acknowledge that there are obvious socio-economic consequences of ignoring cancer care.

- Cancer care must continue during the ongoing pandemic and must be undertaken within a framework that allows the continuum of care in cancer management.
• Conceptual frameworks for balancing cancer risk versus infection risk. We must provide care within a safe environment which limits infection exposure to both the patients and the caregivers.
• Design and implement clinically relevant and patient safety driven algorithms to guide decision-making for appropriate surgical care.

Screening
• HCPs must embrace telemedicine (outpatient teleconsultations) Institutions should embrace telemedicine in follow-up of patients and in risk assessment. While there are dedicated telemedicine portals and software simpler and more available platforms such as WhatsApp and Zoom can and should be used.
• Reschedule most cancer screening procedures (e.g., screening mammogram and colonoscopy) unless a clinically relevant cancer is suspected.
• Conserve health system resources.
• Reduce patient contact with healthcare facilities.

The American College of Surgeons has laid down surgical protocols for surgical care of patients during the pandemic that aims at reducing exposure to healthcare workers and other healthcare givers in the operating room. Procedures can be classified into emergent, urgent and elective.

• Stratify elective procedures - “Essential”, which implies that there is an increased risk of adverse outcomes by delaying surgical care for an undetermined period of time. “Non-essential” or “discretionary” - this alludes to purely elective procedures that are not time-sensitive for medical reasons.
• Consider strategies to safely delay surgery - Neoadjuvant therapy e.g., rectal cancer may undergo chemo radiotherapy plus upfront chemotherapy (total neoadjuvant therapy) rather than chemo radiotherapy alone as a means of delaying surgery.
• Centralize surgical management in independent sector hospital facilities, ‘cancer hubs’ free from treatment of COVID-19 patients.
• Maintain theatre availability. This is to ensure continuum of care is maintained.
• Ease of application of guidelines. Ensuring there is a multidisciplinary approach to care for example through establishment of tumour boards. Multidisciplinary tumour units should ensure that practices are aligned with safety driven guidelines and algorithms.

Summary
Resources are scarce and stretched and facilities must be optimally and safely used for the sake of the healthcare giver and the population at risk, the cancer patient without compromising their care.

Dr. Alex Muturi
GI Surgeon – Kenyatta University Teaching Research and Referral Hospital (KUTRRH)
TOPIC: Surgical Care for Cancer Patients in a Pandemic

Presentation Outline:
5. Introduction
6. Oncological surgeries done during the COVID pandemic
7. Cancer Treatment Strategies
9. Measures instituted to continue with Cancer care
10. Lessons Learnt

Introduction
The KUTRRH is a comprehensive cancer care centre in Nairobi. On 11th March, WHO declared COVID 19 a pandemic. On 12th March, Kenya reported its first COVID case and KUTRRH was designated as a COVID treatment and isolation facility by the MoH. Initially, the hospital received most of suspected or confirmed COVID 19 patients on treatment for cancer both locally and those coming from abroad. Thereafter, all patients with COVID were taken to the facility. This put a massive strain on the KUTRRH staff and infrastructure until on 10th June when MoH launched home based care guidelines which offered a great relieve to the facility.

**Oncological Surgeries Done During the COVID Pandemic**
- Total number of cases – 191
- Emergency cases – 30
- Colectomies for obstructed, bleeding or perforated ca colon -11
- Mastectomies for ulcerated, infected or severe bleeding of ca breast -6
- Gastrectomies for gastric outlet obstruction - 2
- VP shunt and EVD for brain tumours -11
- Planned Cases – 161
- Colectomies -13
- Rectal Cancer Resections after CRT (LAR, AR, APR) -6
- Mastectomies – 27
- Gastrectomies – 6
- Craniotomies for brain tumour resections – 19
- Spinal tumour resections -2
- Soft tissue tumour excision -5
- Feeding access for oesophageal and head & neck tumours (open gastrostomies and PEGs) – 84

**Need To Modify Cancer Treatment Strategies**
Cancer treatment strategies had to be modified from what is clinically prescribed. This led to:
- Delayed surgery.
- Prolonged waiting periods

**Challenges Encountered in Cancer Surgery**
- Cancer care is not elective and needs to be continuous yet must balance with risk of exposure to patients.
- Hard to balance national, institutional and departmental concerns and actions.
- Strain to staff and infrastructural resources.
- Initially prohibiting all non-essential and even oncological surgeries.
- Delays in seeking care (out of fear of exposure, loss of patients’ follow-up)
- Financial difficulties from COVID devastations patients unable to afford care especially if NHIF not active.
- Most county hospitals stopped their elective list unable to afford care.
- Delays in giving care (occasional by NHIF/financial challenges).
- Need to test COVID test long TATs, reagents stock out.
- Patients turning COVID positive postponement of planned surgeries to isolate.

**Measures Instituted to Continue with Cancer Care**
1. Using a two-stream model adopted from NHS, using colour coding to guide staff and patients as to location of COVID isolation wards and ICU. Red indicated COVID care facilities, while green showed regular wards, oncology, renal etc.
2. The oncology wing was closed off from the rest of the hospital. Staff in COVID areas could not be allowed in.


4. Limiting visiting hours and number of relatives allowed.

5. Testing of all oncology referrals and all patients scheduled for surgery.

6. Dedicated isolation wards for cancer patients admitted with unknown COVID status cases of in-hospital exposure, due to space challenges.

7. Regular and on demand testing of all staff in oncology unit and in theatre.

8. Adequate PPEs for staff in theatre and oncology unit – even with COVID negative patients, have surgical gowns, face shields and N95 masks.

9. COVID theatre for emergencies whose COVID status is unknown and are high risks and for positive cases, full PPEs used (hazmat suits, masks, googles, the full set)

Lessons Learnt
The huge role of ICT in infection prevention and effective time management.
Need for flexibility in following clinical practice guidelines.
Need for continuous investment in staff-continuous knowledge and skills acquisition and psychosocial wellbeing.
Effective utilization of time well spent with a patient (consultation and ward reviews) –for quality care for patient safety and for managing workload.

Dr. Catherine Nyongesa - Watta
Clinical and Radiation Oncologist at Texas Cancer Centre Nairobi
Kenyatta National Hospital
Topic: Radiotherapy in the COVID 19 Era at KNH CTC

Introduction
KNH CTC is the biggest cancer centre in Kenya. We see approximately 3,000 new cases annually out of which 70% get radiotherapy. Common cancers are cervix 737, breast 410, oesophagus 324, prostate 171 and NPC 85 among other cancers.

The ward where these patients are admitted is referred to as GFD. Mortality in GFD ward is high among patients with breast, cervix and NPC cancers.

When COVID was officially reported in Kenya in March 2020, the government instituted partial lockdown and curfews. We, being a large national cancer treatment centre and situated at one of the hotspots of the pandemic in the country faced challenges in providing service.

Radiotherapy is a life-saving treatment; thus, the centre was to ensure safety of the patients, patient care givers and radiotherapy personnel at all times during the COVID-19 era.

Methodology
In response to the pandemic, the radiotherapy working hours were extended so as not to interrupt the service. Appointment of patients on treatment was staggered throughout the day to avoid the congestion at the machine area.

Hypo fractionation schedules which are of proven beneficial in many clinical scenarios were applied where appropriate.

Palliative RT treatment for symptomatic relief were delivered in a single fraction where indicated.
In patients with proven COVID-19 infection radiotherapy treatment was deferred until resolution.

The general public safety measures like avoidance of crowding, social distancing, wearing of face masks and following hand hygiene were effected. The hospital set up tents to act as extra waiting areas to ensure social distancing.

**Results/Findings**
- Disruption of non-essential services like transport affected both staff and patients. There was reduced health-care workforce, due to illness (self or family member), fear of occupational exposure.
- This reduction curtailed the number of radiotherapy treatments delivered and even the number of new patients coming to hospital.

**Conclusion**
- A total of 12 radiotherapy patients diagnosed with COVID-19 in the first 6 months of the outbreak; 2 patients were lost.
- Diagnosis: Breast, Cervix, Choriocarcinoma, NPC, Trachea, Oesophagus, Scalp and Vulva cancers
- There were a higher number of female patients with COVID 19 than males Male 23%, female 77%. The rise in higher female infections was suspected to be due to cross infections in the hospital since the patients were sharing rooms.

**Radiotherapy patients infected with COVID 19**
- Reviewed 9 admitted patients
- Age 40-50 years = 5
- 51-60 years = 3
- 60 years and above = 1
- Comorbidities – HIV, DM, HTN, PE
- Common cancers included breast and gynaecologic. Most patients recovered from COVID 19 at 66% Mortality 16.6%, the remaining were still recovering.
Recommendations

All the general public safety measures like avoidance of crowded places, wearing of surgical masks, following hand hygiene are equally applicable to cancer patients. Patients should also be discouraged to come to radiotherapy area with more than one family member, unless necessary (restricted to a wheelchair or a paediatric patient, etc.)

Dr Angela Waweru
Consultant Clinical Oncologist, Aga Khan University Hospital, Nairobi

TOPIC: Adopting New Radiotherapy Techniques in the COVID -19 Era

Presentation Outline

- Introduction
- Hypofractionation
- Hypofractionation in Cervical Cancer – Clinical Series
- Hypofractionation in Cervical Cancer – Prospective Trials.
- Summary

Introduction

The COVID -19 challenge can be summarized briefly as balancing the need for timely and uninterrupted radiotherapy and protection of patients and staff. Various strategies to reduce the viral spread in RT departments have been advocated with the potential of affecting routine delivery of radiotherapy. However, some of the strategies are not practicable to LMICs.

In addition, reallocation of funding to the frontline of pandemic control could impact radiotherapy services.

<table>
<thead>
<tr>
<th>Domain</th>
<th>Problem</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient groups</td>
<td>Cancer patients may include vulnerable individuals due to use of chemotherapy or frailty due to advocated disease. These patients may be co-located with relatively fir patients receiving adjuvant therapies.</td>
</tr>
<tr>
<td>Staffing</td>
<td>Delivery of radiotherapy requires very specific skill sets which are not genetic within an acute hospital. Treatment units are therefore very vulnerable to changes in staff levels due to sickness. Radiation therapies in particular have very regular close contact with a large number of patients and are at high risk of exposure</td>
</tr>
<tr>
<td>Environment</td>
<td>Although most radiation oncology units have physical separation from other hospital departments there may be a mixing of a number of patient groups in a waiting area. Some services may share waiting areas between patients on active treatment and those on follow up. Treatment bunkers may contain a large amount of equipment which in cases of potential contamination may be time consuming and difficult to clean.</td>
</tr>
<tr>
<td>Equipment</td>
<td>Treatment relies on highly specialist equipment which usually treat high volumes of patients in sequence. Downtime on a machine may be experienced due to fumigation after COVID 19 patients have been treated.</td>
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</table>
### Treatments

| Treatments | Treatment courses are delivered in fractions and efficacy is influenced by interruptions and gaps. Extended treatments over many weeks are more vulnerable to interruption due to patient sickness or workforce shortage. Chemoradiotherapy treatments also increase likelihood of serious infection. Some treatments given for palliation or as adjuvant therapy may have altered risk benefit in the context of pandemic infections. |

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### Hypofractionation

This is the strategy that was practicable in our setting. This is not a new technique. It’s well established in breast cancer, prostate cancer and emerging data on Colorectal cancer.

Breast cancer Start clinical trial, fast-forward clinical trial and prostate cancer chiPP clinical trial.

Attractive proposition pre and post COVID-19 in LMIC settings where the range of RT need currently covered is 0-4% in Latin America and Africa compared to 59.79%in upper middle countries - Europe and Central Asia.

### Hypofractionation in Cervical Cancer – Clinical Series

**IIIB Cervical Cancer**

We looked at cervical cancer and hypofractionation locally. 80% of our patients are in this subset and cervical cancer is one of the most common malignancies treated in radiotherapy departments.

Here are 3 clinical series rounding up about 200 patients in Brazil, South Africa and India. P2 trial in Brazil, 34 patients treated with 40Gy/16# (given as BID 2.5GY/# on day 1, 3, 15, 17, 45, 47, 59, 61) with concurrent Cisp 5FU plus LDR brachy 36Gy on D29. All patients concluded treatment with no grade 3 or 4 acute toxicity. 4 and 1 patients developed late grade 3 or 4 gastrointestinal and urinary toxicity, respectively. Complete response rate was 85% and the 5-year overall survival rate was 59%

From South Africa, 104 patients treated with 40Gy in 16 daily fractions (AP/PA fields) plus brachytherapy with 9 Gy * 2 fractions. No concurrent chemotherapy was given, and outcomes were reported retrospectively. Complete response was registered in 70% of the patients and disease free-survival (DFS) at 20 months was 59%. No late GU toxicities were seen, while 4 late GI toxicity were registered.

Tata Memorial, 62 patients treated with 39 Gy in 13 daily fractions (mostly AP/PA fields) followed by intracavitary brachytherapy. The 5 –year DFS rate was 59% and 5 patients had late G3 rectal toxicity.

### Hypofractionation in Cervical Cancer – Prospective Trials.

Randomized prospective trials are what would help in giving a lot of people confidence in this. Here are two currently ongoing trials:

Currently, an ongoing Mexican phase II trials is randomizing patients with locally advanced cervical cancer between EBRT with 45 Gy/25 fractions or 37.5Gy/15 fractions. EBRT is being delivered with a 4-field box and weekly concurrent cisplatin followed by brachytherapy boost to a point A with 29Gy in 4 fractions in both arms.

HEROICC trial – multicentric phase 2 trial in Canada that randomizes cervical cancer patients between two experimental hypofractionated radiotherapy regimens.
Summary
COVID – 19 is a challenge across all health sectors however it as posed unique challenges to the radiotherapy.

In both the curative and palliative setting of cancer management, radiotherapy plays an integral role.

Technological advances have allowed for a higher degree of treatment precision and facilitated hypofractionated (and accelerated) radiotherapy in several disease sites. In addition to mitigating radiation therapy shortages faced in LMICs hypofractionation may even be more relevant in the COVID -19 pandemic - reducing interaction between staff and patients.

Challenge to the audience to be at the forefront of prospective clinical trials because of the acute shortages in radiotherapy experienced in LMICs. It is not only relevant in the COVID 19 era but also beyond that.

BREAK - OUT SESSIONS

TRACK 1

BREAST CANCER
Chairs: Prof. Asim Jamal and Dr. JP Bor

1. Dr Joan-Paula Bor Malenya

Program Manager, Prevention Early Detection & Cancer Screening, National Cancer Control Program (NCCP), Ministry of Health

Topic: Breast health awareness campaign and screening - a pilot in Nyeri county, Kenya

Breast cancer has the highest cancer incidence in Kenya with 5985 new cases in 2018. It's the third leading cause of all cancer deaths with 2553 deaths. Late diagnosis remains a major challenge, where 50% of patients are diagnosed in tumour stages III and IV. This can be attributed to low levels of awareness and low uptake of screening services. In the pilot study, the average age at presentation is 48 years. A national survey conducted in 2014/2015 in the county revealed that 25% of the women in the study aged 15-49 years had breast examination while a further 14 % had clinical breast examination.

Goals and Objectives:
1. To raise awareness among women
2. To improve and sustain demands for breast cancer screening in Kenya.

A pilot study conducted by the National Cancer Control Program in collaboration with other partners in Nyeri county. Nyeri county was selected for pilot study as a universal health coverage (UHC) with a focus on non-communicable diseases (NCD). It has a population of 752695 with a female population of 384845. Nyeri county referral hospital is the only public hospital with a digital mammography equipment in the county.

The study targeted to collect information from women in all the age categories, while those aged 40 years and above were targeted for mammograms. The campaign period was between 9th October 2019 and 15th November 2019 and was organized by NCCP and partnership with GE healthcare and Nyeri county government and other partners. The slogan was “educate yourself early about breast cancer”. The key message was that mammograms can save your life, seek health services from your nearest hospital.
Methodology
The study adopted a pre/post design for outcome evaluation - assessed specific indicators before, during and after the campaign period. Baseline data was collected in April 2019 from hospital records.

The key questions addresses were:
Was there an increase in overall equipment utilization?
What was the patient throughput?
What was the rate of breast cancer diagnosis?
Were there changes in breast cancer detection stages?
Were there changes in rates of referrals?

The health care workers and community health volunteers in Nyeri county were sensitized prior to the campaign. The impact of the pilot campaign was measured through observation of changes and trends in actual utilization and public knowledge of mammography. Exit interviews using a semi-structured questionnaire were administered to clients who had undergone mammography during and after the campaign period. Data was analysed using SPSS version 25 and Microsoft excel 2016.

Results/findings
Campaign performance and awareness
• 217 ultrasounds, 525 mammograms and 1813 clinical breast examinations (CBE).
• High recall rate at 80% with 79% (420/528) reporting that the campaign had changed their behaviour on breast health.
• Source of campaign information- 75% from CHVs, 68% from church announcements and WhatsApp groups.

Early detection, screening knowledge and behaviour
• Breast self-examination (BSE)-77% (407/528) had high awareness but only 13 % practised monthly BSE.
• CBE- 58% had previously undertaken CBE. This was different from the 14 % previously reported.
• Mammography: Low awareness (71%) and low uptake (87%). Low knowledge on age to start having screening mammograms.

Mammography equipment utilization
• 614% increase in number of clients for mammography
• Screening mammograms increased significantly
• Increase in equipment utilization from 11% to 83%.

Patient throughput
36 % (190/528) of participants had less than 3 hours of hospital stay; where 9% had 2-3 hours of hospital stay, due to the special arrangements made for the campaign.

Collection of mammograms reports
The waiting period to collect the mammogram report during the campaign was one week. However, there were 33% of uncollected reports 4 months after the campaign.

Breast cancer diagnosis
49 clients had suspicious lesions for breast cancer, according to mammogram and ultrasound reports. Out of these, 22 clients had undergone biopsies and linked to definitive care, while 5 clients were awaiting diagnosis, with dates booked for fine needle aspirates (FNA) or biopsies.
Another 5 clients were not able to have a biopsy done due to the costs involved, while 17 had not yet gone for the biopsy and could not be reached. In general, 25 clients had a provisional diagnosis for fibroadenoma.

**Conclusion**

**Designing of campaigns and campaign materials.**

Emphasis is put on the need to use locally relevant images, simple text, and to involve target audience to tailor the campaigns for highest impact on recall. There is no “one size fits all”, hence the campaigns should be tailored to the individual counties and should engage the local stakeholders.

**Planning for the campaigns**

The health facility administration should be involved in addressing key campaign requirements and the supplies.

The following should be established prior to the campaigns:

1. Key elements such as triage, appointment systems, linkage to treatment and staffing arrangements.
2. Training of community health volunteers and health workers.
3. Engagement of the local opinion leaders and influencers to help promote the campaigns.

**Implementation of the campaigns**

The study observed that an implementation/ oversight committee is key for efficient campaign coordination. Proper arrangements should be put in place for results collection. Clients diagnosed with the disease should be linked to treatment, and there should be a clear navigation pathway to ensure patients access timely treatment.

**Sustainability post-campaigns**

There is a need to develop local sustainability mechanisms e.g., through CHVs, maintaining a clients contacts database for annual reminders.

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2. **Prof. Nicholas Othieno-Abinya**

   Professor of Medicine, Head of section of Haematology/Oncology, Department of Clinical Medicine and Therapeutics

   **University of Nairobi and Kenyatta National Hospital**

   **Topic:** Final results of breast cancer care (BRECC) Registry at the Kenyatta National Hospital, Nairobi Kenya.

**Background**

Prof Abinya reported that breast cancer is the most common cancer among women in Kenya. He further noted that Kenyatta national hospital is the largest public institution offering comprehensive cancer care in Kenya.

**Study objective**

To determine the magnitude of breast cancer and current clinical acer pattern in Kenya using Breast Cancer Care (BRECC) Registry.

**Methods**

- **Design:** This was a prospective, descriptive study involving patients with breast cancer.
- **Methods:** Patients with tissue diagnosis of breast cancer and able to provide written, informed consent, with no prior interventional therapy were enrolled between 08/08/2011 and 02/07/2014.
Treatments: Surgery, radiotherapy and systemic therapy were applied in line with Kenyan guidelines, adopted from ESMO, ASCO and NCCN. Primary endpoints were overall survival (OS) and progression-free survival (PFS) at a median follow-up of 5 years.

Results
The current study recruited 400 patients, with a median age of 48.5 years, where the age groups 40-50 and 50-60 years were the most common. Considering case distribution by age, most of the patients were aged 40-49 years.

Presenting complaints: 79.4 % of the patients presented with a breast lump. 28.2 % of the patients had the tumour on the left outer quadrant and this was the commonest site for tumour location. The reason why this is the most common site remains unknown.

Risk factors: They included smoking (2%), history of alcohol use (5.5%), family history of breast cancer (4.5%) in the first-degree relatives.

Tissue biopsy/ surgical excision: A small percentage of patients had corneal biopsy; surgical resection was the most common method of biopsy used for diagnosis.

Pathology: 82.8% of the patients had ductal carcinoma otherwise not stated, while lobular carcinoma formed about 2.6% of the cases.

Primary tumour/lymph node staging: Considering the tumour size, T2 tumours were the most common in this cohort at 37.4%. Pathology grading reported grades 2 and 3 as the most common, with grade I having a small percentage.

Hormonal receptor/HER2: When considering hormone receptors, oestrogen receptors were positive in 58.1%, progesterone receptors in 54.4%, and HER2 in 24.2% of the cases.

Stage and outcome: Tumour stage I was diagnosed in 26 of 353 patients (7.4%), stage II in 119 (33.7%), stage III in 105 (29.7%), and stage IV in 74 (21%). At 60 months follow-up, 100 patients (25%) had died. Those <50 years had a significantly poorer overall survival than those greater than or equal to 50 (p=0.018).

Relapse free survival by age (RFS). the younger patients had an earlier relapse than older patients.

Conclusion
Core needle biopsy was not popular. About ⅔ of the patients were in stages II and III. This may reflect breast cancer awareness in Nairobi and its environs, both among health care workers and the public. In this study, younger age was associated with shorter survival.

3. Dr Catherine Mutinda
National Secretary of the Kenya Paediatric Association.
Topic: Genetic testing for screening familial breast cancer: a comparative study of services offered in Kenya and the United Kingdom

Presentation outline:
- Background
- Definition/pathology
- Epidemiology
- Study rationale and methods
- Study results
Breast cancer (BC) is characterized by independent proliferation of breast ductal, lobular and connective tissue cells and is classified as sporadic or familial. Universally, impactful risk modulation strategies target women with hereditary predisposition of developing BC.

Although the incidence rate for BC is higher in the UK than in Kenya, the latter has a higher mortality rate and a higher mortality to incidence ratio relative to the former (data from Globocan, 2018).

Study rationale
An assessment of services offered to women who have hereditary predisposition to BC could explain the differences in disease burden.

Study objective: To compare genetic services for BC in Kenya and the UK.

Methods
1. Literature search
2. Questionnaire guided key informant interview

Results
Kenya and the UK have a national practice guideline. According to the guideline, the risk assessment in Kenya is supposed to be undertaken using the TC model. However, the current practice in Kenya involves the use of the family history. Like in Kenya, family history is used for risk assessment in the UK, in addition to the Manchester scoring system that enables identification of women at risk of familial predisposition to breast cancer. The UK guideline recommends the use of BOADICEA risk prediction model. Risk modulation strategies including surveillance, risk reducing surgery and chemoprevention are specific to women with hereditary predisposition to BC. Unlike in Kenya, everybody aged 50 years in the UK is supposed to undertake population-based screening. Additionally, individuals aged 21 years, with a family history of BC undergo regular screening for breast cancer. Individuals in the UK with a family history of BRCA1 and BRCA2 are offered risk reducing surgery (mastectomy) earlier in life.

Chemoprevention in Kenya using tamoxifen is usually guided by tumour oestrogen receptor positive results. In the UK, tamoxifen use is guided by the germline mutations in the BRCA2, in addition to the oestrogen receptor positive results. The UK guidelines are very clear on what genes to test and what to look for in those genes. For example, in the UK whole gene search for the BRCA1 and BRCA2 and p53 should be undertaken according to the guidelines. In Kenya, there are no guidelines on what aspects of these genes should be tested. Unlike in Kenya, the storage of the test results in the UK is very clear, where results of variants whose significance is not known are stored. In the UK, external quality assurances of laboratories undertaking BRCA1, BRCA2 or p53 mutations analysis are stringent. In Kenya, it is not clear how well the laboratory quality assurance is undertaken.

Discussion and study conclusion
• In conclusion, Kenya and the UK have recognized the need to take care of women with familial predisposition to BC. Theory both have knowledge on BC and BC risk factors. However, the cost implication is not factored in the public health system in Kenya. In the UK, such costs are paid by the National health services, with clear unified service guidelines.
Oversight of laboratory and data storage is well coordinated in the UK, unlike in the Kenyan system.

Human resources for health including genetic counsellors are available in the UK but totally lacking in Kenya.

**Study Limitations**
- Inclusion of low evidence data
- Literature review selection bias
- Omission of male BC

**Study recommendation**
To improve service delivery, Kenya should:
- Have well powered study to document genetic BC screening services in Kenya
- Subject genetic services to strict quality control
- Encourage collaborations between Kenyan oncologists and the rest of oncologists in the world for best practice exchange.

5. Dr. Abeid M. Athman Omar, Resident Clinical Oncologist
Alexandria Clinical Oncology and Nuclear Medicine department of Alexandria University, Egypt.


Dr. Athman thanked the organizing committee for accepting his abstract and giving him an opportunity to make a presentation.

Breast cancer (BC) is the most prevalent malignancy of the reproductive age. There is an increase of breast cancer incidence in young women less than 40 years, in low- and middle-income countries like Kenya, because the population life span is very short. Therefore, more women are going to be diagnosed with breast cancer at an age less than 40 years compared to America and Europe, where the lifespan is very long.

However, due to improvement in diagnosis and treatment, more survivors, especially the young, are increasing in number. Currently, there is an increasing trend of delay in childbearing. As the patients are treated with chemotherapy and hormonal therapy, they live longer thus increasing the number of survivors. However, there will be more treatment side effects. Fertility is becoming a great concern to these young patients.

Breast cancer treatment involves surgery, chemotherapy, radiation hormonal treatment and target directed therapy. This has a direct impact on survivorship.

Young breast cancer patients’ survivorship issues including psychosocial genetics, economic, employment and reproductive issues

Surgery is the main stage of treatment in the early stage of breast cancer.

Research done by Rosenberg observed that more young women undergo mastectomy than breast conservative surgeries. It showed that approximately 50% of the young women undergo bilateral mastectomy, where only 20% of the patients were BRCA positive. This has a direct impact on the quality of life. It leads to anxiety, the women having poor body image and decreasing their sexuality.
Rudy and colleagues showed that 50% of the women are concerned about their fertility before starting treatment, where only 20% affected their decision not to use chemotherapy, and not using endocrine therapy. Some women decide to use a shorter duration like five years or even less, and some of the women they decline to undergo a modified radical mastectomy even though this was the best choice of care for them.

Only 10% of women took fertility preservation strategies. This could be due to availability or lack of knowledge and some other concerns. A study by Nina showed that failure to address infertility has led to non-adherence to endocrine therapy, and thus poor outcomes in breast cancer.

Chemotherapy is associated with premature menopausal ovarian failure. The follicles (ovarian reserve) decrease with age. Chemotherapy further depletes follicles rapidly compared to the women who are not taking chemotherapy, leading to further ovarian failure. Chemotherapy ovarian failure depends on the regimen, and the age of the patient. Patients who are older or about 40 years old, undergo more premature menopause compared to the younger patients who are less than 35 years old.

**Fertility preservation methods**

Patients who are concerned about having children in future, can consider cryopreservation ovarian tissue, embryo/oocyte preservation or GnRH agonists.

**Do young women desire to have children after breast cancer diagnosis?**

There’s a surge of delayed childbearing age, and more women being diagnosed with breast cancer before completing their families, the answer to the question above is YES.

Pagani and colleagues did a survey to see how many women desire to have children after BC diagnosis. They found that around 47% of the women desire to have children, after breast cancer treatment.

**Who are these women?**

Most of them are very young, with no children, while some have one or two children, and wish to complete their family. Fertility was therefore a serious concern.

**Is pregnancy considered safe after breast cancer diagnosis?**

Much of the available data from retrospective studies show that pregnancy after breast cancer is considered safe even in the hormonal or the BRCA positive patients without worsening the maternal prognosis.

A paper published in the Journal of Clinical Oncology by Labatina et al, considering more than 1000 BRC positive patients observed that patients who became pregnant never had a worse outcome.

A meta-analysis done by Asim et al showed that even among the hormonal positive patients, pregnancy did not affect or worsen their survival compared to the women who never became pregnant.

**What is the best timing for these women to become pregnant?**

Until now it’s not known the optimal timing for pregnancy in hormonal positive patients. However, according to the same meta-analysis, and the paper written by Asim, women who became pregnant less than two years compared to those who became pregnant after five years, had the same survival. Therefore, until now, the optimal timing remains unknown, but may be at least after two years because the first two years are the most dangerous period of recurrence.
Thus, the hormonal positive patients can become pregnant after two years. Most patients who became pregnant in less than two years after breast cancer diagnosis underwent abortion, but the results have shown that this does not improve the survival. Most of those women ended up having poor survival compared to the patient who completed their pregnancy. Some women became pregnant while still taking tamoxifen.

Breast cancer has the least probability of successful pregnancy, compared to other malignancies like thyroid melanoma because of the longer period of the hormonal therapy, the chemotherapy induced ovarian failure.

The aim of the current research was to find out:
1. The rate of the young patient who expressed a desire to become pregnant after the breast cancer diagnosis
2. The impact of pregnancy on survivors of breast cancer diagnosis, by considering disease free survival and overall survival.

Methodology
It was a retrospective study conducted between 2008 and 2017. The patients were followed up until December 2019.

Inclusion criteria.
Patients aged less than or equal to 40 years of age with documented interest to become pregnant during the treatment.

Result
900 young breast cancer patients were recruited. However, around 48 patients only wished to become pregnant out of study participants. Despite 21 patients having the desire, they never became pregnant. The majority of them (27 patients) were successful pregnant, out of the successful patient who became pregnant 10 aborted, 17 completed the pregnancy. Majority of the patients were less than 35 years old, and the mean age of diagnosis was 32 years. This is the clinical pathological characteristic.

Considering parity, 50% of the patients had no children or had one child, showing that parity and the age of the patient contributes to the desire and wish of having children in future after breast cancer treatment.

Treatment
Most are treated by modified radical mastectomy compared to breast conservation therapy and most of them use antacycline base and fewer were given tamoxifen-based regiment.

Among these patients, the fertility preservation was mainly using the generic agonists, but it was only around six patients. Chemotherapy induced ovarian failure occurred in two patients. At the end of the treatment, disease free survival was the same compared to that of the patient who desired to be pregnant, but never became pregnant to those who became pregnant.

Who are these patients who successfully became pregnant?
27 patients successfully became pregnant, 10 aborted while 17 delivered. The median time to pregnancy was 31 years. Some patients became pregnant three months after diagnosis, others had to wait until 78 months for them to be completed.

Clinical Pathological Characteristics
Comparing the characteristics of the patient who aborted and the patient who delivered. Considering age, 94% of the patients who delivered were less than 35 years old. That means younger patients have the desire of becoming pregnant compared to the older patients.

Family history was not important in the group which delivered but it was significant in the group which aborted. 46% of the group which delivered had a positive family history.

Most of the patients who delivered either had no children or had one to two children.

Most patients were diagnosed at stage II and III in both groups. The hormonal positive patients were around 60% on average. Most patients who delivered were triple negative. Majority of the patients underwent a modified radical mastectomy.

The disease-free survival for the patients who delivered was better (87%), compared to 62% of the patients who aborted. There was no difference in survival among the patients who desire but were never successful in becoming pregnant compared to those who became pregnant (76.2 versus 72.8%).

Comparing patients who aborted and those who completed a pregnancy, those who completed their pregnancy had a survival outcome of 91%. Overall survival of the patients who aborted was 50%. Therefore, abortion does not improve the survival, probably due to the Milieu of the hormones in pregnancy.

Conclusion
- Approximately 5% of the patients had the desire of becoming pregnant after breast cancer diagnosis.
- The mean age at diagnosis was 32.3 years.
- Most of the patients who desired to be pregnant were younger (less than 35 years of age).
- Age and parity were the main driving force for the desire to have children.
- The median time to pregnancy was 31 months.

This study reports that pregnancy is not detrimental to women with a history of breast cancer. However, among those who became pregnant, those who underwent abortion did not have favourable outcome. However, larger follow up studies are needed to confirm these findings.

Pagani conducted a survey to study the willingness of survivors to take part in clinical trials. They show that most of the patients are willing to take part in the trials of the pregnancy after breast cancer and now they have already finished the recruiting of the participants (around 500 patients).

Take home message
Due to delay in childbearing and increase in survivorship, more young women now desire to become pregnant after breast cancer diagnosis.

Oncologists should discuss the fertility issue before starting treatment, including fertility preservation. Patients who wish to be pregnant should be encouraged, counselled and documented before doing so, after risk assessment.

Patients on an endocrine therapy should be educated on the barrier contraceptives before starting their hormonal treatment.

They awaited positive trial will guide on the safety and the timing of stopping endocrine therapy for young women to become pregnant after breast cancer diagnosis.
Breast Cancer Q&A
Dr. Omar appreciated the talk form Dr Athman.
Dr. Bet asked whether the abortion was induced or it was spontaneous. Dr. Athman clarified that the abortion was induced. An attendee asked whether there were notable birth defects in children born by women on tamoxifen. Dr. Athman responded that the children were normal and that only a few patients had exposure to tamoxifen during pregnancy.
Anthony Muchiri and Omar Ameid thanked Dr. Athman for the excellent presentation. Dr. Omar observed that the presentation covered an area that causes anxiety, and which requires counselling as part of management.

Prof. Asim observed that preservation of ovary functions was necessary for women undergoing chemotherapy who wished to have children. However, in the study conducted by Dr. Athman, the desire by the patients to have fertility preservation was expressed later after the treatment had been started and mainly was initiated by the husband. He further explained that some undergoing studies are investigating the association between breast cancer and pregnancy. Prof. Asim Jamal asked about the study design, whether it was retrospective or prospective, and Dr. Athman confirmed that it was a retrospective study.

EXPERT SESSIONS
Chairs: Dr Andrew Odhiambo, Dr Mercy Gatua

1. Prof. Paul Ruff
Chief Specialist, Professor and Head of the Division of Medical Oncology at the University of Witwatersrand Faculty of Health Sciences and Charlotte Maxeke Johannesburg Academic Hospital

Topic: Advances in the treatment of advanced colorectal cancer (mCRC)

Angiogenesis is required for sustained tumour growth, because tumours produce angiogenic factors such as vascular endothelial growth factors that promote endothelial proliferation and blood vessels growth, invasion and migration. There are various ways to inhibit angiogenesis using a monoclonal antibody against vascular endothelial growth factor.

IFL +/- bevacizumab
A randomized study in mCRC compared irinotecan-based therapy (IFL)+ placebo versus IFL + bevacizumab. The median progression free survival was 10.6 months versus 6.2 months (hazard ratio, HR 0.54; p<0.001. The median overall survival (OS) was 20.3 months versus 15.6 months (HR 0.66; P<0.001).

Bolus IFL is no longer in use because of the haematological and GI toxicity. Studies with the second line antiangiogenic therapy have reported similar efficacy between ML-18147, VELOUR and RAISE, with an OS of around 13 months and an HR of around 0.8. Epidermal growth factor receptor (EGFR-1) signalling, a phase III crystal study comparing cetuximab + FOLFIRI and FOLFIRI alone revealed that patients who had wild type (WT) KRAS were likely to benefit from the treatment when compared with patients with the mutant KRAS. A prime study that used pinatuzumab instead of trastuzumab all over the world looked at KRAS mutations in exons 2,3 and 4, NRAS mutations in exons 2,3 and 4 and BRAF mutations in exons 15. There was a significant difference in progression free survival of patients with KRAS and exon 2 and extended RAS wt. However, the OS was not significantly different. Recent studies have shown that use of the frontline therapy with the immune checkpoint inhibitor pembrolizumab (Keytruda) doubled progression free survival compared to chemotherapy in patients with advanced colorectal cancer, with a median PFS of 16 months versus 8 months.
Conclusion: There are many advances in the management of colorectal cancer with the invention of biologicals that is improving overall patient survival.

2. Dr. Gladwell Gichuru-Kiarie
Consultant Physician and Medical Oncologist at The Nairobi Hospital/ M.P Shah Hospital

Topic: Emerging Therapies in Triple Negative Breast Cancer

Triple negative breast cancer (TNBC) is characterized by a lack of estrogen receptor, progesterone receptor and HER2 expression. Therefore, the three primary receptors are all negative.

HER2 Negativity
This occur when the immunohistochemical score of 0/1+ or tumors with scores of 0/1+ or 2+ that are lacking HER2 gene amplification after in situ hybridization is done and these if deemed negative becomes HER 2 negative.

Characteristics of TNBC
Triple negative breast cancer is quite challenging. The triple negative tumors and basal like tumors account for about 15% of all invasive breast cancers and they usually have a very high histologic grade.

Both triple negative and basal like breast cancers are more frequent in young blacks and Hispanic women, than in young women of other racial and ethnic groups.

Clinically, the tumors phenotypes indicate the possible presence of germ line mutations of BRCA1 gene.

BRCA1 is an important cancer susceptibility gene, where more than 75% of tumors arising in women carrying this gene will tend to have a triple negative phenotype, a basal like phenotype, or both.

Younger women with large tumors tend to be node negative. But this can be misleading because they are aggressive tumors with the usually dismal outcome.

There is a real challenge over the years due to absence of therapeutic targets, and then very heterogeneous disease. There is usually some crosstalk between hereditary breast cancer (BC) and triple negative breast cancer. And there is a bit of controversy towards the approach of neoadjuvant, adjuvant and management of metastatic disease.

Molecular Subtypes That Can Provide Therapeutics Targets
The morphological features of triple negative disease, are usually grade three tumors, negative hormonal receptors and HER2 testing. EGFR is usually positive as is CKs and CK 117 and cyclin E. The other molecular features include T 53 mutations, high degree of aneuploidy, and a basal-like gene expression profile or what is called Clawdeenen low.

The prognosis after five years is usually intermediate to poor. But if they manage to survive 10 years, distant relapses are rare. There is no hormonal therapy intervention known, no trastuzumab use. There is use of chemotherapy with no clear consensus and usually regimens containing doxorubicin and taxanes are used.

Use Of Angiogenic Agents (Platnumz As Well As PARP Inhibitors).
The multidisciplinary considerations in treatment of triple negative breast cancer probably apply to the management of other breast cancers. A clinically node positive breast cancer that
is triple negative is considered for primary surgery with breast conservation and auxiliary node sampling or mastectomy with auxiliary node dissection.

Neoadjuvant chemotherapy can be given, especially for large tumors. If there is no response you consider more additional chemotherapy prior to surgery. If clinically responsive, you think about whether the axilla is negative or positive, at which you can do breast conservation or mastectomy. If the axilla is negative, sentinel node biopsy can be done. If positive, axillary node dissection may be done. If the sentinel node is negative, no chemotherapy is given, but breast or chest irradiation is usually done. If the auxiliary nodes sentinel node is positive axillary node dissection is done, in addition to breast and chest radiotherapy. If there is residual cancer, more chemotherapy is given, and adjuvant chemotherapy followed by radiation therapy are usually done.

Current Treatment Options For Metastatic Triple Negative Disease
Sequential single agent chemotherapy is preferred for patients with metastatic TNBC.

Combination chemotherapy can be used for those patients with visceral crises, very huge tumors which you want a more rapid response, although combination chemotherapy has not shown to improve quality of life.

Patients should remain on regimens until best response, disease progress or significant toxicity, warranting stopping the treatment.

Some trials have come up because of the challenges of improving outcomes in patients, especially metastatic disease. They include:

The Olympiad Trial
This study looked at olaparib, a PARP inhibitor versus the treatment of physicians’ choice in BRCA mutated metastatic breast cancer. The study included triple negative disease, and a few patients that were ER/PR positive.

The patients should have received less than two prior chemotherapy lines and the previous treatment should have included an anthracycline and taxane.

If the patients had received Platinum, there should be no evidence of progression during the treatment. If they got metastatic lesions they needed to be at least 12 months since the previous treatment. They needed to have an ECOG performance status of 0 or 1 and at least one measurable lesions that could be assessed by the RECIST criteria.

The study involved 19 countries and there were 190 sites. There were randomized to 2:1 with each arm having approximately 310 patients.

Olaparib was given a 300 milligrams twice a day, or the treating physicians choice of chemotherapy.

Primary endpoint was progression free survival, and also the RECIST criteria measurements. Secondary endpoints included overall survival, progression free survival, and the quality of life, as well as safety and tolerability features.

Study Findings
Olaparib treatment significantly improved progression free survival compared to the treating physicians’ choice of chemotherapy. There was a significant difference in the events as well as the median time to progression where olaparib had a median period of progression of seven months compared to 4.2 months.
The risk of progression or death over the course of the study was reduced by over 40% in the olaparib.

The medium progression free survival was improved by 69% with olaparib treatment compared to the standard of care chemotherapy. From around two months, there was clear separation of the Kaplan Meier curves.

In the subgroup analysis, the risk of progression was reduced in olaparib treated patients who had HER2 positive disease as well as those who had triple negative disease. There were 5.6 months compared to 2.9 months difference in the patients who received olaparib compared to the chemotherapy.

**Outcome**

In this trial, olaparib is the first treatment that was approved for BRCA mutation carriers who are HER2 negative metastatic breast cancer, who had received prior chemotherapy. This received FDA approval in 2008.

Through the concept of synthetic lethality, olaparib causes death in BRCA one deficient cells, while sparing healthy cells and the adverse effects profile was tolerable.

**The EMBRACA Trial**

This trial compared Talazoparib with other chemotherapies (capecitabine, eribulin, gemcitabine or vinorelbine) patients with locally advanced or metastatic HER2 negative breast cancer and a germline mutation of BRCA1 or BRCA2.

They were stratified according to:

- The number of prior chemotherapy regimens, either none or more than one
- Triple negative or hormone receptor positive breast cancer
- The history of CNS mets or no CNS mets.

The patients received talazoparib one milligram daily, and the treatment was in 21 day cycles and continued until progression or unacceptable toxicity. On the other hand, patients received chemotherapy of the physician choice.

The primary endpoint was progression free survival by RECIST by blinded central review, while the secondary endpoints included overall survival (OS). The study looked at duration of response and quality of life.

The EMBRACA trial showed a medium follow up of 11.2 months and a medium progression free survival of 8.6 months of talazoparib compared to 5.6 months with a physician choice of chemotherapy. There was a separation of the curves between one to two months.

Their progression free survival was 37%, compared to 20%, and the median follow up was 11.2 months.

In the Embrace trial, patients with advanced breast cancer and gremlin mutation single agent Talazoparib, provided significant benefit over standard chemotherapy in respect to progression free survival.

There was benefit in all subgroups, including 190 patients with triple negative breast cancer.

**Keynote 355 Trial**

This study evaluated pembrolizumab for triple negative breast cancer, in a randomized double-blind phase three trial that recruited 1174 patients who had previously untreated triple negative
breast cancer and who received neoadjuvant febrile pembrolizumab plus chemotherapy, followed by surgery and then adjuvant pembrolizumab. The other arm received neoadjuvant placebo plus chemotherapy, followed by surgery and adjuvant placebo.

The pathological complete responses at the time of surgery was 64.8% for pembrolizumab and 51.2% under the placebo arm, there was also event free survival of 91.3% versus 85.3% with reasonable adverse profile differences.

There were significant differences for the people who had complete responses and those who had partial responses, especially those who were previously untreated, metastatic triple negative breast cancer.

**The Impassion 130 Trial**
The study design for this trial looked at stratified use of chemotherapy using a placebo and nab-paclitaxel, that was compared to atezoluzimab. The study used atezoluzimab 140 milligrams on one arm and atezoluzimab plus nab paclitaxel, and this was compared to placebo plus nab Paclitaxel. The RECIST criteria was used and toxicity to monitor.

These were patients with locally advanced triple negative breast cancer who had no prior chemotherapy. Those who had prior chemotherapy had not received taxane.

The study looked at use of prior taxanes, liver metastasis and PD-L1 outcomes. There was a clear benefit of atezoluzimab like NAB Paclitaxel, compared to placebo, with one year progression free survival of 21%, compared to 16% in the placebo arm.

In the overall survival analysis in the PD-L1 population, there was a significant two year overall survival of 54% versus 37% in the NAB Paclitaxel.

**Treatment targets in triple negative disease**
Some targets are seen in use of PARP inhibitors pembrolizumab, and some newer therapies still under trial, including the phosphoinositol 3k and mTOR inhibitors, which will target the mesenchymo-like triple negative disease.

More ongoing studies are investigating immune checkpoint inhibitors, mainly used for hormonal receptive breast cancer, and are evaluating immune mediated factors of triple negative disease. The basal like triple negative disease use of PARP inhibitors, especially those with germ-line mutations have BRCA1 and 2.

Luminol and apocrine antagonists are also being investigated.

**Novel Agents In Triple Negative Disease**
They include Sacituzumab Govitacan an antibody conjugate, which targets Trop 2 receptor. These received accelerated FDA approval in patients who had been previously treated with chemotherapy and other forms of therapy.

The LOTUS study looked at Capivasertib (AKT inhibitor) with paclitaxel.

There are ongoing trials on the combination of PARP inhibitors with checkpoint inhibitors, because the PARP up regulates PD-L1 expression. Further studies are investigating the androgen receptor inhibitors (bicalutamide) and PARP and P13 inhibition.

**Conclusion**
First line metastatic triple negative breast cancer, first line treatment in PD-L1 testing, positive aezolizumab or pembrolizumab with chemotherapy can be used and if negative with a germline mutation of BRCA one may consider the use of olaparib or talazoparib.
There is also use of other chemotherapy agents like Taxanes, anthracyclines and cisplatin and carboplatin.

Sacituzumab govitecan can be used after two lines of the above treatment.

Combination therapies are likely to be necessary in a majority of patients.

TNBC is a very challenging disease, very aggressive disease, especially in young patients, which make it very, very difficult to manage.

3. Prof Nicholas Othieno-Abinya
Professor of Medicine, Head of section of Haematology/Oncology, Department of Clinical Medicine and Therapeutics
University of Nairobi and Kenyatta National Hospital
Topic: Breast Cancer as seen at the Nairobi Hospital: A preliminary analysis

Background
Breast cancer is the most commonly diagnosed cancer among women globally, and also the second leading cause of cancer related deaths among women. The situation in Kenya is the same.

The Nairobi hospital has a unit delivering comprehensive cancer care. The various practitioners treat cancer patients individually, though; difficult cases are discussed at multi-disciplinary team (MDT).

Methods
Study objective: To help document data on breast cancer diagnosis, treatment and outcome at the Nairobi hospital.
Study design: This was a retrospective cohort study involving records of breast cancer patients whose caregivers were willing to have their cases included. The research assistant visited the different units and offices and looked through case notes. All files of patients with tissue diagnosis of breast cancer were included.

Information taken included demographic details, comorbidities, pathology, stage treatment and outcome.

The study was commenced after approval by the hospitals ethics and Research Committee.

The duration covered was between January 2014 and December 2019 inclusive.

Results
- A total of 591 patients were included 580 (98.1%) women and 11 (1.9%) being men.
- The median parity for the woman was three.
- 217 (36.7%) of these had a university education and 172 (29.1%) had college education though non university.

The age group 41 to 50 years and 51 to 60 were the commonest with a mean age of 50.7 years.

Modifiable Risks
Use of hormonal contraceptives among the woman was in 25.2%.
Alcohol and tobacco use was reported in 12.4% and 2.5% respectively, and this may mirror the practice of the general population in Kenya.
Previous exposure to radiation and family history of cancer: 0.7% of the women had been exposed to some extent, for one reason or another. The background environmental radiation is difficult to test because nobody knows whether they are exposed or not. 13% of the woman had family history of cancer.

**Primary Tumor Size At Diagnosis**
Tumors less than two centimeters were diagnosed in 33.3%. This reflects the fact that now awareness is being created and tumors are being diagnosed at an earlier stage.

The tumors more than five centimeters were diagnosed in 21.3% of the women.

Considering the TNM stage, the T stage, metastatic disease was diagnosed in 21.3% of the woman.

**Tumor Biology**
ER positive tumors were 55.7%, PR positive tumors were in 44.7%, and HER2 positive tumors were in 21.8% of the women. Combining the hormone receptors and the HER2 makes the triple positive tumors 37.1% and triple negative tumors were in 18.1% of the cases.

**Practice Of Obtaining Tissue For Histology**
50.9% had a core needle biopsy under image guidance for diagnosis. A small percentage of 40.3% had had excision biopsy, and fine needle aspirates (FNA) were used in only 8.8% of the cases for diagnosis.

**Neoadjuvant Therapy**
This was given and the anthracycline, cyclophosphamide combination was the commonest chemotherapy protocol used.

**Types Of Surgery Performed**
The most common surgical procedure was a medical modified radical mastectomy. Lumpectomy was practiced in about 15.2% of the patients.

**Adjuvant Therapy**
This was given but the combination of cyclophosphamide, doxorubicin was used more commonly, probably in the early years.

**The Outcomes**
By the end of the study, 5.6% were registered as dead, and a good percentage of those who were not registered were lost to follow up. This may reflect patients going back to their caregivers after they have been treated.

The primary tumor size revealed that the smaller tumors had a longer progression free survival.

**Conclusion**
- The men represented 1.9% of the study population.
- Core needle biopsy was performed in 51% of the cases. Core needle biopsy is now commonly used because it gives a better tissue for biological tests apart from histology. Hence currently, the use of final aspiration cytology and excision biopsies is limited. However, there was a big percentage of excision biopsies, reflecting patients referred from peripheral facilities that have had their excision biopsies.
- Ductal carcinoma was about 85% of the cases, reflecting the biology that is known elsewhere.
• Metastatic disease was in 21.3% of the cases. People tend to believe that in low income countries, the majority of breast cancers are diagnosed with metastatic, but this appears not to be true, at least in the setting of Nairobi city and Nairobi hospital.
• Her2 positive tumors were 21.8% of the cases that again reflects what is seen elsewhere. Triple negative breast cancer formed 18% of the cases, reflecting the cases that are seen elsewhere, including in western data.
• Anthracyclines and taxanes were commonly used.
• The younger women had higher risk of early death.
• Higher BMI was associated with earlier death, thus one can't infer that the cause of death was necessarily from breast cancer, since high BMI could also have led to earlier death from other causes.

TRACK 2:

GI CANCER
Chairs: Dr. Andrew Odhiambo and Dr. Catherine Nyongesa

1. Dr. Andrew Odhiambo
MBChB, MMed, MedOnc (UK), FCP (ECSA)
Consultant Medical Oncologist & Lecturer at University of Nairobi (UON)

TOPIC: Clinicopathological characteristics of colorectal cancer at Kenyatta National Hospital (KNH)

Colon cancer is the 5th most common cancer in Kenya in both men and women, and the 3rd most common cancer in males. In 2018, 1400 colon cancer and 900 rectum cancer cases were reported. Diagnosis for colon cancer has improved over the last decade, and new treatments are evolving in Kenya and the rest of the world. Devolution of cancer centres. However, the mortality rate from this cancer remains high, mainly due to late diagnosis.

Study justification
CRC has not been described at KNH recently. There is a need to find out what has changed in order to formulate new policies.

Study questions
1. What are the clinico-pathologic characteristics and outcomes of CRC at KNH?
2. How do these characteristics correlate with mortality?

Methodology:
Site: KNH cancer treatment centre and KNH records department.
Design: Comprehensive chart review of patients with biopsy proven CRC diagnosed 2014 and 2018.
Study population: Biopsy proven CRC -2014 and 2018
Minimum sample size: 357
Sampling: Consecutive
Ethics & review: Compliant.

Results
The socio-demographic characteristics showed that the ratio of males: females was 1:1, with 41% of the patients being aged below the age of 50 years and a mean age of 53.6 years. This is a young population compared to the developed world, where the patients are relatively older. Most of the patients were from Nairobi and its environs.
Clinical characteristics: 51% of the patients had haematochezia, 42.4% had altered bowel habits while a further 37.7% had abdominal pain.

Treatment modalities: APR was the commonest form of surgery implying that the majority had the disease on the left side. Majority of the patients were on a traditional modified regimen.

Comorbidities: 17.2% of the patients had hypertension, 1.7% had HIV while the majority had no comorbidities.

Clinical characteristics according to the site of the tumour
Abdominal pain, haematochezia, internal obstruction and weight loss and altered bowel habits were more likely to be in the left sided disease. Anaemia was more common in the right sided disease.

Pathological characteristics: Adenocarcinoma was the most common, and other histological subtypes. About 60% of the cases had lymph nodes positivity. 27% of patients had T4 disease infiltrating the surrounding organs. There was a higher incidence of signet ring cell type and a poorly differentiated disease in patients below 40 years. Those above 40 years had moderately differentiated disease.

Outcome of patients with CRC
By the end of the 5 years study, 36.8% of the patients were alive, 20% were dead, 42% were lost to follow-up.

Tumour characteristics and mortality: presence of distant metastasis conferred a significantly worse outcome. age, right sidedness and left sidedness did not impact mortality. Poorly differentiated and the infiltrating tumours had a higher mortality.

Conclusion: CRC patients in Kenya are young, with 40% being below 50 years of age. The young patients have a more aggressive pathology, but the outcome does not differ between the older and the younger population. Left sided disease predominates in the studied population. FOLFOX chemotherapy is now more commonly used than before. 37.5% of the study participants had metastatic disease at presentation. The extent of the tumour and presence of metastasis significantly affect the outcome.

Recommendation: The study recommended a longer prospective study.

2. Dr. Mohamed Maallim
Consultant Physician at Kenyatta National Hospital
Topic: Clinico-Pathological Characteristics and Outcomes of Gastric Cancer Among Patients at Kenyatta National Hospital: A Retrospective Chart Review

Gastric cancer is the 3rd leading cause of cancer death worldwide, 700,000 deaths reported annually. Kenya has the highest gastric cancer in Africa, and there is an increasing trend of GC in younger populations. There are geographical, regional and age variations. There is a challenge with management of GC in resource limited countries, leading to high morbidity and mortality. The worldwide change in the clinico-pathological characteristics have not been documented in Kenya. The study sought to describe the local setting experience on the management of GC. Outlining the clinicopathological and treatment outcomes.

Specific Objectives:
Primary objectives
1. Describe the outcomes of patients with gastric cancer at KNH
2. Describe the clinical characteristics of patients with GC at KNH
3. Describe the pathological characteristics of patients with GC at KNH

Secondary objectives
1. Determine the outcomes of patients with gastric cancer at KNH
2. Correlate mortality with clinico-pathological characteristics
3. 

Study site and design: This was a retrospective chart review KNH CTC and the main records department.

Study population: Patient with biopsy-proven gastric cancer seen at KNH hospital as an outpatient or in-patient between 1st January 2014 and 31st December 2018.

Data collection: The study included patients with biopsy confirmed cancers using the ICD code from the KNH records department.

Study variables: Included socio-demographic, clinical, pathological characteristics and outcome.

Analysis: Data analysis was performed using SPSS. Categorical data reported as percentage and frequencies while non categorical data were expressed as mean/ standard deviation. Cox proportional hazard regression factors associated with mortality. The person's time was calculated from the first histological diagnosis to death or end of the follow-up.

Sociodemographic characteristics: The study enrolled 413 participants. The participants had an age range of 21-100 years with a mean age of 58.1 years. The male to female ratio was 1:5:1. The females had a slightly lower mean age. Majority of the participants were from Nairobi and its environs and were either unemployed or self-employed.

Clinical presentation: Majority of the patients presented with abdominal pain and vomiting. A substantial number of patients presented with upper gastrointestinal (GI) bleeding and dysphagia. 66.7% of the patients had anaemia, with 16.3% of the patients having severe anaemia.

Anatomical sites: About 30% of the patients had gastro-oesophageal junction disease and cardia disease.

Histopathological characteristics: Macroscopically, ulcerating cancer was the commonest, while histologically, adenocarcinoma was the most common. Considering the histological subtypes, 58.8% had the diffuse/infiltrative subtypes.

Staging: Patients in stages 1 and 2 were 2.2% and 11.7% respectively. A total of 15.9% of the patients were stage 3 while 58.1% were stage 4.

Treatment modalities: 40% of the study participants had surgery, while 74% had treatment with palliative intent. 19% of the patients had adjuvant chemotherapy after surgery. Few patients had surgery alone and might have died before adjuvant therapy.

Survival rate: The 6 months mortality rate stood at 29.7%. There were 246 patients with known status at 6 months out of which 73 died. The 5 years survival rate was 30%.

Prognostic factors associated with mortality: A multivariate analysis revealed that Male gender, recurrent disease and stage 4 disease, distant metastasis were associated with poor outcome.

Discussion: The mean age for the study participants was 58.1% and was two decades lower than the age reported in Europe and some parts of southeast Asia. However, the mean age obtained in the current study is comparable to the mean ages reported in other African countries. There is a worldwide report of increasing cases of gastric cancer among the younger population. Late clinical presentation was evident in the study. Countries such as Japan that have robust screening systems diagnose the patients early, where up to 50% have good outcomes. Infiltrative type was the most common histological subtypes. As previously reported, 74% of the cases had late presentation. In a multivariate Cox regression model, recurrent disease, stage 4 and distant metastasis. The current study did not associate infiltrative subtype with poor outcome. This could be due to small sample size or fewer
reporting by the pathologists. The current study revealed a low 5-year survival rate of 30%. Similar findings were reported studies done in Tanzania, Mali and Nigeria.

**Conclusion:** GC in Kenya occurs among the young population, with a more aggressive pathology. However, these do not influence the outcome. There is an increase in the number of proximal tumours. Majority of the patients present late and have poor clinical outcomes. The findings from this study demonstrates the importance of early diagnosis and treatment and suggests the need for a prospective approach involving multiple centres with a greater number of patients.

3. Dr. Caroline Tonio
MBchB, MMed, FMonc (UoN)
Consultant Physician and Medical Oncologist
**Topic:** Treatment outcomes of GIST patients attending GIPAP clinic at Nairobi Hospital.

Gastrointestinal stromal tumours (GISTs) are the most common mesenchymal tumours in the GIT. It predominantly affects adults with no clear gender predilection. It affects any part of the GI with the commonest site being the stomach. Most GISTs have activating mutations in the KIT or PDGFRA gene. Majority of the patients present with nonspecific symptoms depending on the size of the tumour and the site of involvement. Molecular analysis is important in making diagnosis while mutational profiling prognosticates and predicts response to treatment.

Use of tyrosine kinase inhibitors (TKIs) has dramatically improved the management of GISTs.

**Study justification**
- GISTs are rare tumours and have recently received a lot of attention.
- Newer treatment options have been introduced in recent times.
- The clinicopathological characteristics and outcomes in Kenya have not been recently studied despite the incidence of these tumours being on the rise.
- There has not been any documentation of GIST outcome since introduction of newer treatment options in our setup. The current study aimed to consolidate present understanding and information about sociodemographic, pathology diagnosis, management and treatment outcomes of GIST in our setting.
- The results of the study may be used by clinician and healthy policy makers in evaluating our current practices.

**Objectives**

**Primary objectives:**
- To assess the clinicopathological profile and treatment received among patients diagnosed with GIST
- To determine the outcomes of GIST cases seen at GIPAP clinic

**Secondary objective:** To determine the correlation between factors that predict treatment outcomes and survival among patients with GIST.

**Patient Selection**
Case definition: A patient who has a histopathological proven biopsy of GIST that is CD117 and/or CD34 and/or DOG1 positive.

**Inclusion criteria**
Patients with a biopsy-proven diagnosis of GIST diagnosed between 1st January 2014 to 31st December 2019 who are on follow-up at GIPAP clinic.

Exclusion criteria
- Any file without actual pathology printout confirming GIST will be excluded.
- Missing vital data.

Study methods
Study design: Retrospective descriptive study of GIST patients
Study site: The GIPAP clinic at the Nairobi Hospital, in Nairobi, Kenya. The study site was chosen because it has a great pool of patients currently enrolled and active in care.
Sample size: Calculated from Daniels formula (1999), minimum sample size required was 150 patients
Sampling method was a consecutive sample of records
Data collection was done using a study proforma.

Results
- A total of 151 study participants were enrolled; 51.7% were males with a mean age of 54.2 (12.9) years.
- Hypertension was the commonest comorbidity at 13.2%.
- Personal history of malignancy was reported in 11/151 (7.7%) patients.
- Abdominal pain was the commonest presenting complaint at 59.6%.
- 39.7% of the patients had localized disease at presentation.
- Spindle type was the most common histology representing 76.2%. Immunohistochemistry C-KIT positivity was present in 99.3% of the patients.
- Risk stratification was not recorded in 62.3% of the participants but high-risk disease was reported in 19.9%. The most common type of surgery was partial gastrectomy, performed in 40/90, 40.4% of the patients.
- 11/151 patients were on Sunitinib, a second line treatment. By the end of the study, 78.1% of the patients were alive, out of which 79.7% were on treatment.

Conclusion
- The study describes the patient demographics and clinical outcomes after treatment with imatinib in GIST patients at GIPAP.
- Most GIST patients were diagnosed above the age of 50, and male patients were slightly more numerous than their female counterparts.
- The stomach was the commonest anatomic site affected.
- A Significant number of patients presented with localized and metastatic disease.
- Most of the patients are alive and on treatment.
- Some patients developed Imatinib resistance and were switched to Sunitinib as a second-line treatment.

Recommendations
Dr. Tonio observed that there is a need for a study to carry out mutational analysis for prognosticating and predicting treatment response. She encouraged pathologists to record all vital information to aid in treatment decision making. She further noted the need for a longer follow-up study.

Limitations of the study
Missing data regarding death, pathology reports and the type of surgery performed
Kenya being a third world country, resources constraints led to lack of crucial data including mutational analysis for c-kit, and PDGFR-alpha and genetic work.

**HAEMATOLOGY**

1. **Dr. Lorna Akinyi**  
Clinical research nurse at Ampath Oncology Institute  
*Topic: The impact of NHIF on treatment for lymphoma patients at MTRH*

Burkitt lymphoma (BL) is a highly aggressive malignancy of mature B cell non-Hodgkin lymphomas. There are two types of Burkitt lymphomas: sporadic type and endemic type. The sporadic BL accounts for up to 40% of pediatric lymphoma cases in children and around 2% in adult in Europe and North America. Males are more affected than females. Endemic Burkitt lymphoma is the most common childhood cancer in tropical Africa, comprising 50% of all childhood non-Hodgkin lymphomas. It affects children aged between four to seven years of age and is twice as common in boys. This childhood cancer is associated with the Epstein Barr Virus (EBV) and infection with malaria in sub-Saharan Africa.

The outcome of sporadic Burkitt lymphoma in high income countries is considered excellent due to long term survival rates of up to 90%. This is mainly due to prompt diagnosis and treatment. On the other hand in sub-Saharan Africa, lack of health insurance for example NHIF in Kenya, health system delays in patient referrals and financial constraint lead to late presentation and advanced disease with survival rates of about 30 to 40%.

The abstract highlights major points of BL research and explain why health insurance is important. The purpose of this study was to establish a comparison between patient outcomes among patients with NHIF and those patients without NHIF. This included the patient seeking screening services, navigating through diagnosis and seeking optimal treatment once a cancer diagnosis is made.

Burkitt lymphoma program (BLP) is a patient care program running in partnership between AMPATH oncology and Takeda Pharmaceuticals. The program was initiated in 2017 in response to low survival rates of 30 to 40% of lymphoma patients in sub-Saharan Africa, and most commonly in western Kenya.

**BLP focuses**  
**Patient support.** This mainly includes a payment of up to 6000 Kenya shillings per annum per patient, transport reimbursements chemotherapy payment for lymphoma patients without NHIF. Recently, the program offers a stipend of 1500 shillings per patient to cushion them against the unprecedented effects of COVID-19. This has greatly improved on treatment compliance.

**Health care worker training.** Before the COVID era, the program used to organize training for nurses and CEOs as in person meetings but in this COVID era, there are bi-monthly virtual ECHO platform trainings.

**Awareness creation through hosting patient support groups.** The patients exchange the experiences, encourage one another and share with one another.

**Conducting community outreaches.** Patients are sensitized on early warning signs and to seek health care early. The program's hotline number is also shared with the community health workers as it's vital in coordinating and navigating the referral process.
**Sponsoring survivorship and follow up support.** BLP has in the past helped patients setup or continue with sustainable income generating activities. Some patients lose their sources of income during the treatment process or deplete their savings in the treatment journey.

**This study addressed the following questions**
Do insured patients covered by NHIF have less advanced stages of lymphoma than the uninsured?

For the patients at diagnosis for each stage of lymphoma, do the uninsured patients have worse outcomes compared to patients who are insured?

**Methodology**
Target population consisted of 131 patients enrolled in the lymphoma program at Chandaria Cancer Center and chronic diseases (CCCDC). The patients were aged zero to 14 years. A comparison of the stage of disease at diagnosis and survival rates among patients with NHIF and those without NHIF was done.

An analysis control for stage at presentation, ease of diagnostics and prognosis to estimate the adjusted risk of death for these respective groups was done.

**Study findings**
The insured patients presented earlier to the health facilities with stage one and stage two diseases at about 25% of all the cases studied. This was made possible by ease of access to diagnosis mainly through imaging, histology and at times laboratory.

Uninsured patients presented with a more advanced diseased than the insured patients, approximately at a ratio of 43:25 %, respectively, for stage three and stage four disease.

Insured patients had better screening, diagnostic and treatment opportunities than the uninsured.

Survival rates were at 1.9:1 for insured patients versus the uninsured patients respectively.

The adjusted risk of death was 8:14 for insured patient versus the uninsured patients.

**Conclusions and Recommendations**
The more frequent adverse outcomes of lymphoma patients without health insurance suggest that health insurance improves access to screening, diagnosis and optimal treatment in lymphoma.

Early stage of presentation is a positive indicator of better outcome in cancer management. It is important to enhance awareness through early screening, early diagnosis and prompt treatment.

The NHIF is the primary provider of health care insurance in Kenya. Having this insurance will enable all Kenyans access to quality, sustainable and affordable health care which contribute to realizing the universal health coverage goal and improves survival rates for all cancer patients. The government should therefore consider making NHIF more affordable and available to those without sources of income, who form a majority of the population.

Chemotherapy treatment and supportive care greatly improves outcomes for BL patients and decreases scenarios of loss to follow up cases.

Below are some of the thank you messages from some patients and their caregivers.
“I came to Eldoret when my daughter M.N was in bad shape, had lost all hope that she will ever recover as she was very sick. After admission, I met with the lymphoma team who expedited my daughter's workup and even fully sponsored the first cycles of chemotherapy treatment as we waited for our NHF to mature. The program has helped me beyond words from reimbursing transport for the whole time my daughter was in treatment to paying for my NHIF card for 12 months. My daughter finished treatment in May 2019 and recovered fully. We are currently on six months follow up. Even during this COVID-19 times they have stood with us. May the almighty father continue to bless this amazing team together with the donors? Rose Nekesa, parent to M.N.

“Let me take this opportunity to thank you since you have been supporting my transportation costs and NHF payment from the time my daughter started treatment at MTRH. She has done cycle 4 of Burkitt lymphoma treatment and is doing very well. May you all continue with that spirit. Mungu awabarki”

David Kipkoech Lamgat parent to CC.

2. Prof Nichola Othieno-Abinya
Professor of Medicine, Head of section of Haematology/Oncology, Department of Clinical Medicine and Therapeutics
University of Nairobi and Kenyatta National Hospital
Topic: Outcome of Severe Chemotherapy-Induced Neutropenia in the COVID Era: The Nairobi Hospital Experience

WHO grade IV neutropenia (absolute neutrophil counts <0.5x10^9/L) carry high risk of infection.
The risks of infection and death are higher with values <0.1x10^9/L (profound neutropenia).
Cancer chemotherapy, especially in the practice of malignant haematology, poses high risks of severe neutropenia.

Method: The study involved four patients who developed profound neutropenia while undergoing chemotherapy for malignant haematology in the COVID era.

Results
Case 1: A 72-year-old male with primary effusion lymphoma was on MACOP-protocol. The weekly doses were supported with G-CSF. Following 3 weeks of treatment, he developed severe mucositis and dehydration and was admitted in shock. Absolute neutrophil count of 0.02x10^9/L was registered on day 4 post admission. He was managed on antibiotics, parenteral nutrition and further G-CSF and made full recovery fever free. He discontinued treatment after 8 weeks citing inability to tolerate any more treatment.

Case 2: was a 45-year-old male with anaplastic large T cell lymphoma, with Ki-67 index of 92% was treated with MACOP-B Protocol. The weekly treatments were supported with G-CSF. He walked into the office a day prior to week with ANC of 0 and was put on antibiotics, and further G-CSF, and, and full recovery without fever. He has had 9 weeks of MACOP-B then switched to CHOP of which he has had 3 courses and stopped.

Case 3: A 53-year-old male on treatment for myeloblastic transformation of CML, underwent induction with 7/3. He registered maximum temperature of 38°C on days 16 and 17 during the period of profound neutropenia. He was managed with vancomycin and amikacin and achieved complete remission and is now on course 3 consolidation.

Case 4: A 46-year-old male was referred from another country with severe haemorrhage of few days’ duration. He was obese at a BMI of 43. He had extensive petechiae ecchymoses
and gun bleeding. Peripheral blood showed a pancytopenia, bone marrow evaluation suggested acute myeloid leukaemia (AML), possibly APL. He was reluctant to have another bone marrow sample taken and we had to rely on the stained slides from the referring centre. Samples were taken for flow cytometry, cytogenetics, and molecular characteristics.

**Progression**

On day-1 he developed a tender swelling on the dorsum of his right-hand following venepuncture and the temperature rose to 38°C. He was managed with intravenous amoxicillin/clavulanate, and prophylactic ciprofloxacin continued. ATRA was started. 3 days later, we went ahead and started the induction with 7/3. The temperature settled on day 2 of induction.

**Induction**

ATRA from day 3, then 7/3 added. On day 11, platelets were 45 and he spat out sputum streaked with fresh blood. The entire day, he had been shivering but there was no fever. Since it was on a Sunday, he was given a unit of non-irradiated apheresis platelets at about 5 pm. At about 8 pm the temperature was 37.7 °C and he was given intravenous paracetamol. By 11 pm the temperature was 38.8°C and he started on amikacin and vancomycin. By day 13, there was no fever. Antibiotics were discontinued on day 17, and he was reverted to prophylaxis antimicrobials. t (15:17) was confirmed on day 9. He continued taking ATRA on an outpatient basis and day 33 marrow showed blasts of 6-9% with no promyelocytes.

**Discussion and Conclusion**

Profound neutropenia is inevitable in acute leukaemia induction and Hodgkin’s lymphoma. For acute leukaemia’s, complete remission rates in most sub-Saharan Africa are much lower than high-income countries. Poor environmental hygiene in low-income countries is a major impediment to delivery of effective, intensive chemotherapy.

**Lessons learnt**

During the COVID 19 era, there has been some improvement in hygiene including masking, cleaning of contact surfaces, hand washing and maintenance of social distancing. This has resulted in improvement in hygiene in general, translating into better treatment outcomes. Policy makers in Africa should take lessons from this experience.

3. Prof Amha Gebremedhin
Associate Professor of Medicine
Department of Internal Medicine, School of Medicine, College of Health Sciences, Addis Ababa University

*Topic: Updates in the Management of CML*

**Disease overview of chronic myeloid leukemia**

**Chronic myeloid leukemia** (CML) is a clonal myeloproliferative stem cell disorder, that accounts for 15 to 20% of all leukemias, 1-2 cases per 100,000 adults in affluent countries.

The disease is driven by the BCR-ABL1 chimeric gene product that results from a reciprocal balanced translocation between the long arms of chromosomes 9 and 20.

This results in shortened chromosome 22 with the BCR/ABL fusion gene, (the Philadelphia chromosome).

The fusion gene typically encodes for a novel oncprotein of molecular weight 210Kda, referred to p 210, which has enhanced tyrosine kinase activity downstream stimulating the stem cells, and resulting in proliferation of the Leukemia cells in chronic myeloid leukemia.
CML generally runs a mild indolent course initially, until it transforms to the accelerated (AP) or blast phase (BP). These are the advanced phases of CML.

Before the era of the BCR-ABL1 tyrosine kinase inhibitors treatment, the median survival in the patient with CML was 3-5 years, and the 10-year survival was less than 20%. This was mainly caused by late presentation.

Tyrosine kinase inhibitors (TKIs) were introduced into the standard of CML therapy around 2000, and have revolutionized the natural history, treatment and prognosis of disease. They have improved the 10-year survival from 20%, 20 years ago to 80-90% as of 2020.

5-10 year survival rates in the clinical trials
Breakthrough in the treatment of CML have been made with a median estimated time of the five-year survival of 91%, and the 10-year survival rate of 83%. This could be higher when considering CML related deaths.

The diagnosis and treatment of CML based on the ELN guidelines 2020
Diagnostic work-up
We have to resort to routine physical examination, complete blood count, particularly the bone marrow is very important for morphologic review.

To do the chromosomal banding for Philadelphia chromosome as well as to look for cytogenetic evolution very important.

Qualitative PCR to detect the BCR-ABL transcripts and to identify the transcript type for follow up purposes.

Routine laboratory studies
They include biochemical as well as viral workup.

Patients who present with advanced disease,
They require flow cytometry to determine cell lineage and for mutational analysis. HLA typing or presentation may be considered in individuals who would be candidates for stem cell transplantation. Reverse transcriptase Polymerase Chain Reaction (PCR) monitors response and detects residual disease in CML patients.

Quantitative PCR studies show a high level of concordance in peripheral blood and bone marrow.

Quantitative PCR is not mandatory at diagnosis, as it is qualitative PCR which is important at presentation.

The interpretation of the levels of molecular response in CML is based on the international scale. MR6 has not been achieved yet, but there is hope that in the coming few years, laboratory investigations will be refined, and become advanced to record a deeper molecular response of MR6.

Risk assessment tools and scoring systems in CML
They include the sokal score and the EUTOS long term survival score LTS score. They are leukemia-related deaths only as they classify the patients in low, intermediate and high risk patients.

What is the difference between sokal score and the EUTOS?
They consider the same factors, including age, percentage, size of the spleen, platelet count. However, the difference is in the low-risk patients, ELTs considers many patients in the low risk group, but is the Sokal score, many patients are the higher risk.
The ELTS accurately considers patients are at higher risk, but Sokal does not and therefore nowadays, ELTs scoring system is used for patients on TKI treatment.

**Treatment and monitoring of CML patients.**
Three guidelines are used, including
The European leukemia
The National Comprehensive Cancer Network
British Society of Hematology.

The guidelines stipulate that the desired goals for treatment of CML are to achieve:

- At 3 months, we have to achieve complete hematologic response, and BCR-ABL should be less than 10%.
- At 6 months, the BCR-ABL should be less than 10%.
- At 12 months, the cytogenetic response should be achieved.
- At 18 months, there should be complete cytogenetic response and the patient should measure molecular response.
- At any given time, the patient should be stable and with improving measure molecular response

**Treatment and monitoring**
Four drugs are approved for frontline therapy
1. Imatinib
2. Bosutinib
3. Dasatinib

The second generation TKIs have been compared directly against the multiphase three randomized studies with remarkably similar results to each other. So the choice of therapy for individual patients is determined by considerations of risk score, toxicity profile of the TKIs, patient's age, and the ability to tolerate therapy, planned pregnancy and the presence of comorbidities.

The British guideline shows that when you choose drugs among the four mentioned, some have contraindications with warning while others do not. Imatinib has less contraindication compared to the other TKIs.

**Pivotal phase three trials approved as frontline treatments in CMA**
In a study, where dasatinib was compared with imatinib, the survival at five years was 91% and 90%.

**Choices of the four medications**
Particularly in Europe, the low-risk patients aged 18 to 40 years old invariably were given nilotinib and dasatinib. Imatinib was given as the patient age increased due to its safety profile. In the advanced phase of the disease, younger patients were given nilotinib or dasatinib, while imatinib was given in the older group.

**Monitoring Response to TKIs**
Hematologic responses.
Cytogenetic responses.
Molecular responses.
The milestone is the follow up of the patients based on the European leukemia 2020 guidelines, at baseline, the most important ones are higher risk patients with additional chromosome abnormalities. Patients should be measured molecular response. The warning and failures are if the patient doesn't reside to what has been discussed.

A change of treatment is recommended when intolerance cannot be ameliorated or when molecular milestones are not reached based on the guidelines.

With long term TKI treatment, measurement of MMR3 is associated with complete cytogenetic response, and excellent event for a survival.

Suboptimal response to two or more TKIs should lead to consideration for allogeneic stem cell transplantation.
Sub-optimal response may be due to
Mutation acquisition
Intolerance and treated related toxicities and complications that require treatment interruptions. Stoppage of treatment and poor adherence to treatment, result in suboptimal response to TKIs

**Treatment discontinuation**
Treatment free remission (TFR) is now an emerging treatment goal for many patients, with CML who have achieved deep and stable response to treatment.

Many retrospective and prospective studies have shown consistent proportion of patients ranging from 30-70% who discontinue treatment after achieving DMR may remain treatment free for undefined period of time.

Patients with molecular relapse after discontinuation do not progress and achieve DMR again upon retreatment. Some of them can become eligible for the second attempt of TFR.

The probability of achieving TFR depends on several factors including: CML itself, patient characteristics, TKI type, treatment duration, the label of molecular response.

Based on the guidelines, there are ELN, European societies of medical oncology and Hughes criteria, which are more or less same. The only difference is the duration of TKI therapy, where the for example the ELN requires greater than five years for Imatinib, but greater than four years for second generation TKIs. NCCN, three years ESMO five years and Hughes that require more than eight years. Institutional guidelines for TFR are necessary.

And the Gazzi guidelines stipulate consideration for a TFR in the patients but unfortunately, lack of means to follow to determine the level of molecular response in our patients is a major challenge.

A total of 19 studies with more than 2700 patients reported a relapse free survival ranges between 63 and 68% after six months to 10 years, but much data is not available yet.

**Conclusion**
*What did we learn from the guidelines in the year 2020?*
Treatment and follow up or patient to CML should be conducted in a specialized referral center where there is rapid access to quality control, reliable tests.
Unfortunately, with increasing prevalence of CML patients and the high costs of TKI treatment per year, stopping treatment will result in a considerable and durable reduction of treatment costs worldwide.
An important question of how to increase the proportion of patients for TFR is being addressed by optimization studies.

It is expected that these treatment modalities coupled with the evolving new modalities of treatment will have significant curative potential of CML in the near future.

In resource poor countries unfortunately, the availability of effective drugs and monitoring is limited and therefore the goal of treatment remains survival with continuous therapy.

4. Dr. Kelvin M. Manyega
Clinical Pharmacist

*Topic: The impact of NHIF on treatment for lymphoma patients at MTRH*

A retrospective analysis of presentation, treatment and outcomes of multiple myeloma at Moi Teaching and Referral Hospital (MTRH), Eldoret, Kenya.

Multiple myeloma (MM) is a B cell malignancy characterized by proliferation of clonal plasma cells in the bone marrow.

In 2018, it was responsible for 1.3% of new cancer cases and 1.5% of cancer deaths respectively in Kenya.

There is scarcity of research in Kenya on MM treatment and outcomes

**Objectives**

- To describe the presentation at diagnosis (clinical, radiological, laboratory)
- To describe the current treatments offered
- To determine survival outcomes.

**Design:** A retrospective chart review

Setting: Academic Model Providing Access to Health Care-AMPATH Oncology, Eldoret

MM patients were the newly diagnosed, meeting diagnostic criteria of active MM according to the International Myeloma working group.

**Study period:** The study was conducted between 2009 and 2019 (11 years)

**Statistical analysis:** Patient presentation was expressed as the median for continuous data and percentages for categorical data. Survival analyses were performed by Kaplan Meier method, univariate (log-rank test) and multivariate (cox regression model) analysis.

Ethical approval was obtained from MTRH IREC (FAN:003619).

**Results**

The male to female ratio was 1.3:1. The median age at diagnosis was 61 years.

Presenting features: The CRAB features that are characteristics of MM were present. Bone pain was present in 70% of the patients. 60% of the patients had lytic lesions, while fractures were detected in 30% of the patients. 46.5% of patients had anaemia, 13.7% had renal failure, and hypercalcemia in 54.8% of the patients.
Treatment: 218 patients received chemotherapy treatment, where Bortezomin based regimens were prescribed to 21.0% of patients, Lenalidomine to 3.2% of the patients. Among 103 patients with elevated levels of serum M protein at diagnosis, 42.7% achieved remission meaning they had undetectable levels of M proteins after treatment.

Survival analysis

A total of 221 patients were included in the survival analysis. 46.2% of patients died, 5.9% were lost to follow-up. One year survival rate was 70% while a 5-year survival rate of 21% was reported. The median follow-up was 11.8 months, and a median overall survival (OS) was 29 months, 95% CI 20.1-40.2%.

The factors associated with poor survival included:

- Male sex, baseline haemoglobin, baseline platelets baseline serum creatinine, baseline albumin and not achieving remission.
- Age at diagnosis is lower in sub-Saharan Africa (53-62 years) than in Caucasians (71 years)
- CRAB lesions were frequent in the study population.
- Baseline tests including imaging, beta 2 microglobulin, serum free light chain are not routinely performed at the study site due to cost implications. Patients had to obtain the services from commercial laboratories since they were not available in public hospitals.
- Increased access to thalidomide and bortezomib treatment regimens now than before
- Systematic monitoring of response was inadequate (mainly due to the high cost of SPEP test),
- The median overall survival (mOS) was poor (29 months) when compared to Austrian trial outcomes (>41 months for TD)
- Survival rate at 1 year (70%) was superior to Ghanaian observational study employing vincristine/adriamycin/dexamethasone (51.6%)
- Increase access to diagnostics.
- Increased access to continuous regimen plus maintenance. Especially through insurance plans.

TRACK 3:

Cancer Management
Chairs: Dr. Mary Nyangasi and Dr. Mohammed Ezzi

1. Mr Fred Asige
Manager, Oncology Department at The Nairobi Hospital

*Topic: Benchmarking of an IMRT treatment planning and delivery system*

Intensity Modulated Radiation Treatment (IMRT), are high level treatment with advanced technology for cancer radiation treatment. It helps to escalate the dose of radiation therapy to the target volume of the cancer being treated. IMRT is a popular advanced standard technique in many centres with a potential for improved conformity and reduced toxicity. Many centres are migrating currently to IMRT. However, it is a complex modality of treatment that requires correct commissioning, planning and delivery to minimize incidents. Thus, to attain robust
treatment and management of patients, good thermoplastic immobilizing devices are necessary.

Beam geometry helps to align the beam to be able to conform to the treatment area of interest. This requires inverse treatment planning through:
- Setting the goals of treatment,
- Defining the outcomes
- The software does the rest of the work at the treatment delivery phase.

In this process, patient setup is key, and the quality assurance must ensure that the treatments are well documented.

In 2008, the radiation protection commission reported that approximately 28% had failed to meet an accuracy criterion of 7%/four millimetre of multileaf collimators. These problems were traced to inaccurate commissioning.

A task group of medical physicists (TG-119) was established to standardize validation of IMRT commissioning.

Initially seven Institutes participated to establish reference passing rates. TG-119, aims at providing a standardized method and reference values for validating intensity modulated radiation therapy commissioning. IMRT is a basis for volumetric art therapy; results are both valid for IMRT and for VMAT.

**Methods**
The methodology employed were 4 tests structure sets, developed in a solid water phantom. These were:
- Multi targets
- Mock prostate
- Mock head and neck
- CShape

The TG-119 came up with a mock prostate and a multi target. The study had the dose calls and the volume that will receive the dose and the percentage of the volume to receive not more than the approved doses.

The multi targets had 90%, central target had 99% of volume which was to receive 5000 centigrade, 10% of the volume received not more than 5300 centigrade, the superior target had a 99% of volume, which was to receive at least 2500 centigrade and 10% of the volume was to receive not more than 3500 centigrade.

The inferior target had a 99% of volume and was to receive at least 1250 centigrade and 10% of the volume was to receive not more than 2500 centigrade.

There was a beam arrangement, with six mega voltage, a seven fields beam angles at 50 degrees interval from the vertical.

There was also a chamber measurement points whereby the high dose was at isocentre and the lower doses was four centimetres superior and four centimetre inferior.

There was a planer film measurement at mid phantom at isocentre.

At the mock prostate, there were dose goals where the structure of the prostate planning tumour volume was defined at 95% of volume to receive at least 7560 centigrade, 5% of
volume was to receive normal no more than 1373. The rectum had 30% of volume to receive no more than 7000 centigrade and 10% of volume to receive no more than 7500 centigrade. The bladder was defined at 30% of the volume to receive no more than 7000 centigrade and 10% of the volume to receive no more than 7500 Centigrade.

There was a beam arrangement, with six mega voltage, a seven fields beam angles at 50 degrees interval from the vertical.

The chamber measurements pointe were: high dose at the isocentre, low dose at 2.5-centimetre posterior the isocentre, planar film measurement, mid phantom the isocentre and 2.5-centimetre posterior to the isocentre.

For the mock head or neck, the dose goals, the structure, the dose to be received, and the minimum dose to be be given were defined.

There was a head and neck planning tumour volume, 9% of the volume to receive at least 5000 centigrade and 99% of volume to receive at least 4,650 centigrade and no more than 20% of volume to receive more than 5000 centigrade. For the cord, no part of the volume to receive more than 4000 Centigrade.

The parotids were 50% of the volume to receive less than 2000 centigrade, with a beam arrangement with six mega voltage, nine fields at different angles of 40 degrees intervals from the vertical.

The chamber measurement points were high dose at the isocentre, low dose at 4-centimetre posterior the isocentre, planar film measurement, mid phantom measurement at the isocentre and 2.5-centimetre posterior to the isocentre.

The mid frontal at isocentre includes parotid four centimetre or posterior to isocentre.

For the CShape, the structure was defined as a C shaped PTV which was to receive 95% of the volume at least 5000 centigrade and 10% of volume to receive no more than 5500 centigrade and then the core with a 5% of the volume to receive no more than 2500 centimetres centigrade.

The beam arrangement was six mega voltages, nine fields at different angles of 40 degrees intervals from the vertical.

Results
Multi targets had a mean of 97.8 standard deviation of 3.5, Minimum dose of 90.8 and maximum up to 99.8%.

The prostate had a mean of 19.6, 2.4 as a standard deviation and minimum dose was at 93.8% maximum was at 100.

Head and neck had a 98.1 as the mean and 2.0 as the standard deviation and minimum of 3.0 and 9.8 maximum dosage.

Overall, the mean was 97.9 with a standard deviation of 2.5 under minimum dose of 94.0 and maximum of 99.9. Therefore, cumulatively the mean was approximately seven with a 1.5 standard deviation.

The maximum and the minimum between the Nairobi hospital and the multi targets are 99.8 and 96.8 respectively, prostate at 98.6 and Nairobi at 99.97, the CShaped at 87.4, Nairobi
hospital at 98.5. The overall combined at nine with 98.4. There was a very slight difference of 4.6.

Conclusion
The commissioning for IMRT volumetric therapy was validated
The performance can be fine-tuned with time.
Since the method is standardized, then it can be used and can be audited at any time by any team of physicist or any team of experts who can have an opportunity to audit the IMRT technology.

2. Dr Joseph Hargan-Calvopina Ph. D
Senior Program Manager at BIO Ventures for Global Health
Topic: Improving Diagnostic Pathology in Kenya through a Holistic, Multi-Sector Approach

Dr. Joseph mentioned that BIO ventures for global health is a non-profit USA based organization that works at the crossroads of both the private and public sector to advance research and improve treatment. Their programs work to connect people, resources and ideas across biotechnology and pharmaceutical companies, governments and non-profits to address global health issues. Their programs include:
1. Research connects industry assets and researchers to drive neglected disease research and development.
2. Connecting industry with African leaders to improve cancer care, expand access to cancer medicines and technologies in Africa.
3. A fellowship program that focuses on connecting LMIC researchers with expertise and resources in academic and industry laboratories with advanced capabilities.

The African access initiative (AAI) was launched by BVGH in 2017 to address Africa's growing cancer crisis.

AAI is a private-public partnership focused on five strategic plans, including:
1. Establishing sustainable access to cancer medicine and technologies. Through AAI, BVGH coordinates affordable and sustainable access to nationally prioritized cancer medicine, manufactured by pharmaceutical companies. The drugs are FDA approved to ensure the highest quality. BVGH then supports African hospitals and ministries of health to focus on the needed drugs and calculate the cost of procuring the drugs, orders between the governments and the pharmaceutical companies. BVGH coordinates the access agreements.
2. To strengthen health care infrastructure by partnering with hospitals to improve processes, workflows and standard decisions through standard operating procedures.
3. Through various programs, they work to provide training to cancer professionals in order to build clinical oncology capacity. Through the African consortium for cancer clinical trials, BVGH is mapping out the landscape of clinical trials ready sites in sub-Saharan Africa, in order to address the cancer data gap through clinical trials.
4. To raise awareness of cancer Africa.

These programs work throughout the continuum of patient care, starting from prevention and detection through diagnosis to treatment. There is no one specific area that the program focuses on, but to try to address the entire journey of the cancer patients.
BVGH works in partnership with the ministry of health and national cancer control programs of Cameroon, Côte D Ivoire, Kenya, Nigeria, Senegal and Rwanda.

Augmenting Diagnostic Capabilities
Kenya's Pathology Landscape

- **Late diagnosis**: is common in Kenya, where 80% of the reported cancer cases were diagnosed at advanced stages, when very little could be done for curative treatment.
- **Limited diagnostic capacity**: The pathologist to population ratio is 1 to >725000 vs. 50 per 1m people in the USA.
- **Delays in diagnosis**: The median turnaround time of 14.5 days for a diagnostic report, well above the recommended 5-day window.

Approach

AAI activities are driven by the needs and priorities of African governments and cancer hospitals. BVGH has conducted comprehensive needs assessments to understand participating hospitals' capacities to provide safe and effective cancer services. BVGH learns from the partners on the ground to understand what the priorities and the gaps are. To achieve this, BVGH has conducted a comprehensive need assessment to understand participating hospitals' capacities to provide safe and effective cancer services. The need assessment captures the number of cancer patients and the diagnostic capabilities and infrastructures, existing and needed medical equipment, cancer research and clinical trials capacity, and whether there is interest for hospitals to participate in the clinical trials. They also consider the oncology staff capacity and the cancer drugs that are in use as well as the cancer drugs that are needed.

To address any identified gaps, BVGH develops workshops, hands on training or virtual webinars and mentorship programs.

In 2019, BVGH organized a one-day workshop titled “Handle with care”. The workshop focused on tissue specimen handling for surgeons, nurses and pathologists in partnership with Aga Khan University hospital as well as the national cancer control program. The workshop had a gigantic component focused on several seminars that covered sharing the best practices for cancer specimen collection, handling and processing. Once the gigantic component was complete, the participants had the opportunity to participate in the hands-on component, which involved a post-workshop laboratory tour that was guided by the Aga Khan University hospital histology laboratories. They were able to see and participate in demonstrations for proper preparations of reagents used in histology. They also participated in a staining protocol work through. As part of the workshop, there were about 25 professional oncologists from 4 counties in Kenya that received training.

Previously, BVGH has participated in the placement of experts in the studies. A volunteer histotechnologist was placed at Machakos cancer care and research centre for about two weeks to work with the staff and ensure best practices for staining and workflow. She guided the staff through sustained and quality assurance processes, and to ensure that the correct procedures and protocols were being adhered to, to make sure that the laboratory is operating at the highest quality standard possible.

The program provided textbooks for references and continued education for the staff and to equip the team with personal protective equipment such as goggles. The histotechnologist worked closely with the team to identify gaps and to identify areas that need improvement to raise the quality of services. She also demonstrated hands-on techniques to improve the staining quality, workflow and efficiency of the laboratory.

In 2019, BVHG worked with 3 fellows from the pharmaceutical industry and were placed in Nairobi to work with the national cancer control program to provide recommendations and develop a road map for the implementation of the national cancer specimen handling guidelines. They provided recommendations to the guidelines, refined some of the aspects and recommended an implementation strategy. They reviewed and developed standardized
forms to be included in these guidelines to standardize the nationwide cancer specimen referral, tracking and reporting system. The fellows prepared an analysis of looking at the strengths, weaknesses and opportunities and threats when implementing such standardized guidelines. They did an analysis of the new referral system framework and devised recommendations to address any weakness or threats that might come up.

Due to COVID 19 disease, BVGH had to adapt a training program that could continue connecting oncologists and healthcare professionals with international experts and ensure continued transfer of knowledge, despite the social distancing guidelines. They used zoom to prepare webinars specifically to train pathologists in Kenya to better diagnose the patients. In early 2020, BVGH launched a webinar focused on gastro-intestinal pathology, which is one of the series of 3 webinars which will be done in Kenya, BVGH recently completed a 4-week course focused on breast pathologists. Each virtual course has an assessment that gauge the impact of the webinars on the Kenyan pathologists, by seeing improvements over time on how they answer the assessments from the beginning to the end. The pathologists are provided with pre-webinar cases before each lecture to prepare them and allow them to engage in active discussion during the lecture.

In partnership with the college of pathologists in East, Central and Southern Africa, participants who successfully complete the course are assigned will receive CBD credit.

Impacts and conclusions
- Trained oncology professionals on best practices when handling tissue specimens
- Improved efficiency, workflow and staining quality at Machakos histology lab
- Reviewed and developed standardized forms to improve Kenya's nationwide cancer specimen referral, tracking and reporting system.
- Assessed and advised on the processes for specimen handling and transport, diagnostic reporting, guideline development and implementation.
- Trained over 50 pathologists on GIT and breast diagnostic techniques through virtual courses.

Lessons learned:
- Diagnostic pathology laboratory insufficiencies cannot be solved by a single method or by a single entry.
- Numerous entities with complementary expertise must be engaged in a stepwise and systematic approach that aligns with hospital and national priorities and is endorsed by hospital leadership.

3. Dr. Rob Tenbrinck MD, PhD
Anesthesiologist & Pain Expert at IFRAP

**Topic: Oncology and pain: new paradigms necessary for applications under local circumstances in African communities**

Pain is a disease itself since March 2019. Treatment by well-trained pain specialists is indicated. To train pain is a human right according to the Helsinki covenant, where optimal settings are needed. To encounter the pain in a modern way, we should address it multidisciplinary, multimodal and individual, MMI to optimize results.

**Individual multimodal medication for cancer pain**

Pain is the most frequent symptom in the presence of advanced cancer disease. One third of cancer patients may receive inadequate analgesia. Opioids may not be effective for all types
of cancer related pain. Pain in advanced disease may be related to the disease itself (e.g., cancer), disease treatment (e.g., Surgery or osteoporotic collapse from chronic steroid therapy in respiratory disease), or from comorbid conditions.

From sensor to the central nervous system; classical view

- The nerve fibers enter the segmental part of the myelum.
- This is a 3D network with many connections.
- No explanation for the visceral pain (vagal and sympathetic systems).
- Inflammation is not incorporated in this model.
- Synaptic transmission influenced by inflammation processes and supportive tissue
- Ru-Rong Ji, a famous Harvard researcher, has published since 2013 about this phenomenon, where he demonstrates It as a link between the classic and the modern ideas.

Loeser uses circles to demonstrate that pain affects our behaviour mainly nociception, awareness, experience and behaviour.

The inflammation and pain are very closely related

There is the involvement of the immune system, microbiome, Brain-Gut axis and more in pain. Neuroinflammation causes pain. Paraneoplastic syndrome is an immune reaction by inflammation.

The world health organization (WHO) analgesic steps for pain treatment involves

- Paracetamol/NSAID
- Weak opioid
- Strong opioid

Pain needs new vision on treatment. Pain treatment should start with the WHO standards. Which is a much better treatment than no vision. This vision is from the 80 last century, but still not common, even not in the western world with all its resources. It is important to treat pain early in order to avoid escalation.

New ways:

Mechanism based approach

- Individual treatment for dosage
- Use of uncommon (according to the WHO steps) drugs
- Treatment can be cheaper
- Less opioids

A challenge for Africa

When establishing a new concept, let it be one for the future. See what Africa does with its telephone infrastructure. Opioids will always be subject to strong regulations, reducing their use is also beneficial for the patients.

Ketamine has potential as adjuvants, but in western world it is known for abuse and addiction by younger people.
**Practice**

- Introduce a new basic mechanisms approach
- Use gabapentin and amitriptyline low dose to influence central processes.
- Use etoricoxib instead of the old NSAID, it has great advantages in oncology pain in the long term.
- Reduce opiates, they are less efficient in the long term and promote inflammation.

**Future:**

To provide optimal pain treatment, the first generation of pain specialists should be trained

We should use all modern communication options as web-based training and reference, however, never neglect the daily practice by hands-on interactive training. We should also use the toolbox of other specialists: multidisciplinary treatment is the cornerstone in MMI.

**New, Future medications based on mechanisms:** Lidocaine is a very potent anti-inflammatory drug. It proved impressive value in small series of palliative oncological patients in Holland. Side effects were hardly encountered, certainly compared to opioids, in this small series. We must study the exact optimal dosage and way of application.

4. Prof. Cristina Stefan  
Paediatric Oncologist  
Founder, African Cancer Institute and the African Medical Research and Innovation Institute  
*Topic: Global Oncology and Africa*

**Presentation outline**

1. *What is global oncology? And why?*  
2. Cancer in Africa-the need for basic/translational research  
3. WHO global health initiatives  
4. Opportunities for collaborations

**What Is Global Oncology?**  
**Common global health definition:**  
A decade ago, universities for global health (>170) academic institutions and partners worldwide formed a consortium, with an objective to discuss common subjects such as global health (including global oncology). The main aim to reduce substantial health disparities that do exist between the nations, in the context for cancer.

In 2018, 59% of new cancer cases and 70% of cancer deaths occurred in low- and middle-income countries.

The recent emergence of global oncology as an academic discipline seeks to promote scientific and clinical advances for cancer worldwide.

**Multiple Facets of The Discipline of Global Oncology**  
**Global oncology:** Mission is to bring the best in cancer care to underserved patients around the world. We collaborate across geographic, professional and academic borders to improve cancer care, research and education.
Global oncology is now a real academic career path. An example of global oncology in Africa is a collaborative research program whose core activities are based in Uganda, through a longitudinal partnership with the Uganda Cancer Institute.

Current research activities include defining the molecular profile of breast cancer and conducting a clinical trial that delivers rituximab subcutaneously to treat lymphoma. Global oncology needs mutual learning more than funding. This can be achieved through collaborations.

Although there is still no official definition of global oncology, one of the overarching themes of this emerging medical discipline is cancer control in low- and middle-income countries (LMICs), given that 65% of cancer deaths worldwide occur in these countries. To control the global cancer burden, it is important to address the burden of cancer in LMICs. However, it is also important to note that global oncology is not the concern of LMICs alone. Cancer respects no boundaries, and neither should cancer control efforts.

Global oncology envisions a world where cancer is prevented or cured, and every patient has the same chance for the best treatment and survivorship. To achieve global oncology objectives, aspects such as training, research and the future leadership and global oncology career should all be incorporated.

**Why Global Oncology?**
There is a worldwide growth of cancer incidence “the cancer epidemic”. Most of the cancer will appear in low- and middle-income countries, where most of the population lives. A global coordinated approach is needed to support the effort of controlling cancer. Therefore, global oncology is seeing the forest beyond the trees.

Prof. Stefan emphasized the need for basic and translational research linked to clinical practice.
She explained that the WHO global initiative discussed in WHO meeting in 2018 resolved to achieve global childhood cancer care and survival of 60% by 2030. Initiative on cervical cancer control projects to have 90% of young girls vaccinated against human papilloma virus by 2030, 70% of women to be screened and 90% of women to be treated to eliminate cervical cancer.

**5. Dr Amsalu Degu Defersha**  
**Clinical Pharmacy lecturer, School of Pharmacy and Health Sciences**  
**United States International University-Africa**  
**Topic: Factors affecting health-related quality of life among prostate cancer patients: A systematic review**

Prostate cancer is the leading malignancy in both incidence and mobility among the male population globally.

According to Globocan 2018 report, prostate cancer is the leading cause of new disease and incidence in male population in the developed countries.

Health-related quality of life has recently become a major goal in managing prostate cancer.

Unlike other malignancies, the post diagnosis lifespan of prostate cancer patient is longer, hence the need to improve their health-related quality of life.

The treatment regimens have long term effect which is very detrimental to the quality of life of the patient.

There exists paucity of reviews that examine the factors affecting quality of life of prostate cancer patients.
Methodology
The study involved a systematic search of the literature review, which was conducted based on the article published for the past 20 years about the quality of life on prostate cancer patient.

Inclusion and exclusion criteria
The articles must have been peer-reviewed full text articles published during this time period.

The articles must be English based. Reviews and non-English articles were excluded.

Data sources and the search strategy,

The review protocol was registered in International Prospective register of systemic reviews.

The data base searches were PubMed, Embase, Google Scholar and cumulative index to the nursing and allied literature.

The keyword searched were prostate cancer, prostatic neoplasm, quality of life etc. All the search results were saved in the individual electronic data pieces and exported to covidence software for screening.

Article screening process
Authors did the initial review, followed by independent screening of the full text. Any differences were discussed to reach a consensus.

Data extraction and synthesis
Was done using a standardized data extraction format in Microsoft Excel. The data extracted includes the characteristics of the study, characteristics of the population and the findings.

Methodological quality assessment
Was done using the Newcastle-Ottawa scale to assess the quality of the other studies.

Study findings
A total of 306 studies were identified for the systematic review, then after a screening 52 studies meet the inclusion criteria and were included in the final systematic review.

Study description
The studies ranged from longitudinal prospective, cross-sectional and randomized control trials. In the 52 studies, a total of 7394 study participants were included with the number ranging from 40 to 3294.

Most of the studies had participants drawn from Europe and America and only few studies involving participants from Asia.

30 studies reported poor overall health-related quality of life in various domains after prostate cancer treatment, while 15 studies reported good overall quality of life after treatment.

Contrastingly, a previous systematic review reported good overall quality of life among cancer patients. This was the first systematic review done globally.

Among the various domains, sexual function was the most grossly affected functional score by the treatment modality of prostate cancer.

Seven studies showed the absence of a significant change in the overall quality of life after treatment.
Most studies variably reported on the negative effect of various treatment modalities on the general health-related quality of life.

According to the studies, older age, comorbidity higher clinical stage, higher Gleason score, greater cancer stage, then African American race, impaired mental health status, neoadjuvant hormonal therapy and lower level of education were the major poor predictors of health-related quality of life among prostate cancer patients.

**Conclusion**
The overall health-related quality of life in prostate cancer patients was generally poor in various functional domains after treatment.
Among the various domains, sexual function was the most closely affected functional domain by the treatment modalities of prostate cancer.

Physicians ought to be put these factors, among others into consideration when designing treatment regimen for prostate cancer patient.

6. Dr. Catherine Nyongesa  
**Clinical and Radiation Oncologist at Texas Cancer Centre Nairobi Kenyatta National Hospital**  
**Leveraging Mobile Phone Navigation for Cancer Care Continuity and Support During the COVID-19 Pandemic at Kenyatta National Hospital**  
Kenyatta National Hospital is the main public hospital in Kenya delivering comprehensive cancer care. It receives patients from throughout the country. The patient navigation program was established in 2017 to address barriers to accessing timely care at the cancer treatment centre and in several clinics in the hospital.

The COVID-19 pandemic disrupted cancer healthcare systems worldwide and posed additional challenges to cancer patients in Kenya. In March 2020, the government instituted control measures including travel ban, which along with other factors led to a 50% reduction in the number of patients able to access care at the cancer treatment centres. In response, the patient navigators expanded the use of mobile phones to support cancer patients and to ensure continuity of care.

**Challenges cancer patients encounter with accessing care during the COVID 19 pandemic**
These were identified through the mobile phone calls.  
From March to April 2020, navigators called patients to check in on them and received calls from patients and caregivers. Call dates, reason for the call, and other comments about the discussion were recorded in paper phone call logs. Data from 230 calls with cancer patients were reviewed. Call reasons and support provided were grouped into two themes and summarized using descriptive statistics.

45% (101 patients) reported challenges in accessing services at KNH due to the imposed movement restrictions and inability to afford the transport costs.

Navigators assisted by rescheduling non-urgent appointments and providing letters explaining their medical needs for clearance to travel.

17% (40 patients) reported experiencing pain but were unable to access their usual pain medication due to travel restrictions.
39% (89 of the patients) were afraid or worried that traveling to Kenyatta National Hospital was going to expose the COVID-19.

Over a quarter (28%, n=63) were to attend a follow up clinic and shared that they were not planning to come in for fear of contracting COVID-19. 13% (n=29) of the call patients said that they thought the cancer services had been suspended.

Patients were informed that preventive measures were in place at the hospital and that the services were continuing. They were linked to the nearest health facility for pain management and those near Nairobi were assisted to access KNH.

13% (n=31) reported experiencing other symptoms or side effects and were advised on their management. Those in need of medical attention were advised to come to KNH or were linked to the nearest health facilities.

The COVID 19 pandemic significantly affected cancer patient’s ability to access cancer care.

Phone calls were instrumental in ensuring cancer care continuity by addressing patient’s needs due to the pandemic, in addition to other barriers. Mobile calls enabled navigators to optimize their provision of quality patient cantered care, and they can continue to leverage this resource for enhanced patient support.

7. Prof William Macharia
Professor and Associate Dean for Research, Faculty of Health Sciences – EA Aga Khan University
Topic: Toward a Regional Approach to Quality Childhood Cancer Drug Access in East Africa

There exists a large burden of childhood cancers in low and middle-income countries (LMICs). The survival rate in these countries is low relative to 80% in high-income countries. This disparity is associated with scientific advancement in these countries. Poor access to essential medicines is a major impediment to the effective care of children with cancer in LMICs. WHO essential medicine list sets the basic bar that all national governments should meet in the provision of medicines. With growing recognition of the contribution of paediatric cancer in global childhood mortality, there is a window of opportunity for innovative collective action in this space. In a study done in Latin America, erratic supply of essential drugs for childhood cancers was due to decentralized purchasing, weak procurement, and supply management processes, and poor pharmacovigilance. A good procurement system would ensure a good supply, management, and quality assurance.

ACCESS
ACCESS is an international initiative with a mission to create and implement innovative solutions to childhood cancer drug and radiotherapy access in LMICs. Through its partner organizations, ACCESS is committed to working with key health system stakeholders to generate knowledge and action to improve access to cancer essentials for children in East Africa.

Aims
The study aimed to map and analyse the determinants of paediatric drug access with specific attention to political, macro-economic, and health system contexts across five Eastern African countries -Kenya, Ethiopia Tanzania, Uganda, and Rwanda.

Objectives
• Evaluate availability and need for essential childhood cancer medicines in Eastern Africa
• Analyse determinants of childhood cancer drug access in comparative health systems.
Research design: Convergent parallel mixed methods

Qualitative:
- Documentation and review of policies
- Semi-structured interviews with a stratified purposive sample of health system stakeholders in paediatric cancer policy, programming, and treatment.

Quantitative:
- 12 months of weekly of cytotoxic and supportive care drugs
- Analysis entails median to highlight procurement inefficiencies in medicine stock volumes and prices.

System perspectives
- Explicating the determinants of drug access
- Determining the availability and costs of essential medicines.
- Ascertaining alignment between the high and low/middle-income countries.
- Assessing regional patterns in drug procurement and supply chain management.

Study significance:
This research is undertaking the first detailed comparative analysis of childhood cancer drug access in the African region. Evidence will be to provide transferable lessons on models for drug policy and program development in LMICs setting. Equip the policymakers, health administrators, and health practitioners with a better understanding of factors influencing childhood cancer drug access, more responsive policies, and efficient procurement and supply management.

8. Dr Irene Nzamu
Paediatric Hemato-Oncologist, Kenyatta National Hospital

Topic: New clinical patterns of childhood non-Hodgkin lymphoma in Sub-Saharan Africa

Burkitt lymphoma (BL) is the most common paediatric cancer in sub-Saharan Africa (SSA) with a classical presentation of jaw tumour. The highest incidence rates of BL are found in tropical Africa countries where it may account for up to half of all childhood cancers and the tumour in these regions is consequently referred to as endemic BL. Recent improvements in access to pathology have enabled more specific diagnosis of paediatric cancers including immunophenotyping, of non-Hodgkin's lymphoma (NHL).

Differences in clinical presentation between endemic and sporadic BL have been described.

Study aims
- To describe the distribution of paediatric NHL at MNRH
- To describe the clinical characteristics of paediatric mature B NHL at MNRH
- To describe outcomes for paediatric mature B NHL at MNRH

Study design: Prospective Cohort study
- Study site: Mulago National Referral Hospital-Global hope
- Study population: Children aged 0-17 years with NHL
- Inclusion: All newly diagnosed children with NHL
- Exclusion: Pre-treated transfer -in from other sites
- Ethical Approval: IRB Mulago National; referral hospital.
- Data analysis: descriptive and survival analyses were done using Stata v.12.1
NHL Diagnostic confirmation

All children had:
- Biopsy and morphology/histology
- Immunophenotyping by flow cytometry or immunohistochemistry
- Cytogenetics where applicable

A total of 293 cancer patients were included in this study, where NHL contributed 12% of the patients. The average age is 8.7 years with the males being affected twice as the females. Considering the immuno-phenotypes among n=34, majority of the study participants 52.9% had BL, 14.7% had diffuse large B cell (DLBC) lymphoma, 11.8% was observed in both T and B lymphoblastic lymphomas. Mature T cell lymphoma was observed in 8.8% of the study participants.

By diagnosis, 78% of the study participants had BL, 22% had DLBC lymphoma. The tumour site was abdomen (61%), and jaw (26%).

Staging: 91% of the patients had stage 3 and 4. 15% of the patients were bone marrow positive.

Risk stratification: According to the Global Haematology Oncology Paediatric Excellence-Texas children's cancer and haematology centres protocol,
- Low risk: Murphy stage I and II, with a LDH <500
- Intermediate risk: Murphy stage I and II, LDH>500 or Murphy stage III, LDH <500.
- High risk: Murphy stage III, LDH >500, or any Murphy stage IV.

86% of the patients were high risk, while 14% were intermediate risk. Patients were offered risk-based treatments using the protocols in use that time.

Patient survival: Short-term survival of one year by Kaplan Meier curves revealed on year survival of 60.1%, whereas event free survival was 25.8% (95% CI).

Discussion and Conclusion

Previously, diagnostics were based on morphology alone. With improved diagnostics we found lower BL rates and predominance of abdominal disease that is historically reported in SSA.

This pattern may be due to the change in epidemiological risk factors for classical African BL or referral bias, although similar patterns have been reported in other recent single centre series. The outcomes of mature B cell NHL of which BL is most prevalent remain poor in our setting. More studies are needed to fully characterize BL in SSA and its risk factors as we strive to improve treatment outcomes in the region.

9. Dr Matilda Ong'ondi
Consultant Physician and Clinical Hemato-Oncologist at the Kenyatta National Teaching and Referral Hospital

Topic: Cancer Associated Thrombosis

Why Thrombosis in Cancer?

Cancer patients have a high chance of thromboembolism, through the trajectory of their disease. Patients with thrombolism art diagnosis tend to have poor disease outcomes. Infect, some cancers such as pancreatic cancer have a higher predirection to getting prothrombosis. Patients with metastatic disease have a higher risk than those with regional disease. The hypercoagulable state is multifactorial.

Pancreatic cancer releases tissue factors and activated microvesicles which then activate the extrinsic pathway of coagulation. Several factors are associated with thrombosis in cancer.
Clinical presentation of thrombosis is dependent on the site involved.

Patients with acute pulmonary thromboembolism, high index of suspicion is important for diagnosis.

Factors to consider when treating patients.

Baseline investigations to establish patients with renal failure, hepatic disease, or those with thrombocytopenia. These factors will influence the choice of anticoagulants.

Cost: Ease of administration including whether to use a tablet or an injection,

Treatment options include:

Heparin, including unfractionated, and the low molecular heparin. DOACs, Warfarin. Direct oral anticoagulant agents can be used except in patients with gastric gastroesophageal lesions, due to increased mucosal bleeding. For such patients, low molecular weight heparin is recommended.

Challenges With the Management of Thrombosis

Active bleeding

Setting off thrombocytopenia, acute leukaemia patients can also get thrombosis. It is important to keep an eye on the platelets count when treating the patients. Once the platelets are low, then it's important to hold the anticoagulant. Unfortunately, most institutions in Kenya lack the capacity to ensure consistent platelet transfusion, hence do not want to put the patients at risk of a major bleed.

In Covid 19 disease, many Covid 19 patients have been diagnosed with thrombosis. Some patients have moderate to severe disease and overwhelming systemic inflammatory responses syndrome driven by cytokine, homeostatic changes also happen, resulting in a procoagulant state. A Lot of inflammation occurs in the pulmonary, endothelium and in the alveoli. The patients have pulmonary microthrombi was confirmed in autopsy of Covid 19 patients. Over time guidelines have been established that have put anticoagulation as an important part of treatment.

CASE

A 61-year-old male presented with shortness of breath. He had hypertension and his baseline showed that he had marked leucocytosis which was predominantly lymphocytosis. He had a normal Hb, and platelets were normal. He was later confirmed to have B cell CLL. Tests confirmed that he had bilateral pulmonary thromboembolism. During hospital admission, he required oxygen, but did not require to be transferred to the ICU. He fared well with treatment, though he got hyperglycaemia and required to be on insulin and oral hypoglycaemic agents.

The current guidelines for treatment of thrombosis is that all hospitalized patients should receive prophylactic anticoagulation and if a patient is critically ill, then there is a need to add the dose. For Covid 19 patients who are not hospitalized there is a need to consider their level of risk. If the risk is low, they should be encouraged to be active and to drink a lot of water. If the risk is high, one may consider giving pharmacologic prophylaxis. In case of moderate to severe disease, then consider increasing the dosage.

Conclusion
Recognizing the increased risk of VTE in cancer patients is very important and would allow for selection of high-risk patients to facilitate prophylaxis.

Early diagnosis of thrombosis and timely treatment, based on factors such as renal functions, hepatic functions and platelet counts.

Patients with malignancies who develop Covid 19 disease have an increased risk of thrombosis, due to inflammatory response.

**Cancer Management Q&A**

Dr. Mary Nyangasi thanked the presenters and asked for information about optimization transformation from 3D to IMRT. Are there opportunities for public engagement?

In response, Joseph observed that COVID-19 disease made it difficult to have in person training and dissemination of information. He emphasized the need for virtual training opportunities.

Dr. Ezzi asked about plans to establish various diagnostic laboratories in Kenya, and what were the challenges. Dr. Joseph Hargan explained that the diagnostic services were already there and that they only helped to complement the services. Aga Khan had a high-quality performing laboratory, hence they helped to establish a training program, working with pathologists and other technologists. On the contrary, Machakos had a laboratory with a good foundation, but needed to improve efficiency, thus they came up with additional knowledge to improve efficiency and protocols, so that the training could be done by the pathologists themselves. Dr. Joseph observed that lack of equipment was a major barrier to having a fully functional pathology laboratory. He also emphasized on the need for Implementation of standard processes across the board and a unified understanding of the processes to put in place.

**TRACK 4:**

**Building Regional Collaborations**

*Chairs: Dr Miriam Mutebi, Dr Alfred Karagu*

1. **Dr. Bello Abubakar Mohammed MD, FMCR, FICS, Chief Consultant Clinical & Radiation Oncologist, National Hospital, Abuja, Nigeria President, African Organisation for Research and Training in Cancer (AORTIC)**

*Opening Address*

The African Organisation for Research and Training in Cancer (AORTIC) was started in 1983 by a group of Africans who foresaw the coming of cancer pandemic, and how much Africa was not ready. Their mission was to provide a platform for cancer researchers in Africa to collaborate and discuss their findings in the African continent. Over the years, that mission has partly been accomplished. AORTIC, through their biannual meetings have been able to showcase the research work of African and international collaborators in the continuum of cancer care. Relationships have been established between AORTIC and other major players in the cancer space including the USNCCI, the NCCN, the American cancer society, the European school of medical oncology and KESHO. This has provided a framework for research and publication in international journals.

Dr. Bello invited all members to join AORTIC to get a platform to reach other African countries that require expertise and professionalism. This will reduce medical tourism across the continent. He believes that such collaborations will change the narrative of the cancer pandemic in sub-Saharan Africa.
He sadly observed that 22 countries in SSA lack a national cancer control plan, centres and experts. Therefore, countries like Kenya have a lot to offer to the rest of Sub-Saharan Africa. Consequently, collaborations will help develop a framework for collaborations with the rest of the SSA.

Dr. Bello invited all members to their next conference to be held in Senegal in November 2021.

2. Dr Fidel Rubagumya, Clinical and Radiation Oncologist, Rwanda Military Hospital

**Topic: Choosing wisely Africa**

The “Choosing wisely” (CW) campaign started as an American national initiative whose aim were:

1. To optimize the safety and efficiency of health care by encouraging evidence-based applications of medical investigations and interventions.
2. To identify low-value, unnecessary, or harmful cancer services that are frequently used in national health care systems.

In recent years, ASCO and ASH have contributed to the Choosing Wisely campaign, each publishing ten recommendations for practicing haematologists and oncologists. These were soon followed in 2015 by Choosing Wisely Canada and 2019 by India.

Choosing Wisely is a physician-driven initiative that aims to facilitate the conversation between physicians and patients as well as relevant health care delivery organizations.

CW is about reducing the use of harmful/low-value practices with the ultimate goal of improved overall quality of care.

**Choosing wisely and Africa**

- Is choosing wisely relevant to LMICws
- How do we go about generating the list?
- How do we go about updating the list?

Patients, health care providers, and players are striving to identify where the value in cancer care can be increased. Here are the roles of healthcare providers:

1. Delivering best care at lowest possible cost
2. Avoiding financial toxicity to patients, family and society
3. Stewardship of resources
4. Ethical consideration.

The cancer burden in Africa is rapidly increasing. Particularly, SSA is facing the enormous challenge of securing enough resources to provide optimal care for cancer patients.

Wise and prudent use of resources is an urgent matter in LMICs as these countries strive to provide cancer care for patients.

**Methods**

A project lead team composed of Africans and advisors (from Canada and India) was created. A task force was created, composed of representatives from the SSA region in surgical, medical and radiation oncology, public and private sectors, patient advocacy group was also represented.
They generated a comprehensive list of existing practice, by reviewing published choosing wisely practices from USA, Canada, India, Europe, Asia Australia, New Zealand as they’re related to oncology screening, diagnosis and treatment.

Taskforce members could submit new suggestions related to the African context if they were not represented in the existing lists.

A modified-Delphi consensus process was used to create a long list, to short list and finally a top 10 list of oncology practices that are commonly used but may be unnecessary or potentially harmful to patients.

9 countries representing regions and spoken languages in SSA (Rwanda, Kenya, Zambia, Senegal, Cape Verde, Nigeria, Ghana, S. Sudan, and Malawi).

**Criteria for selecting practices**

- Evidence of low value/harm
- High frequency of use.
- Cost (including opportunity cost)
- Clarity on the wording of the practice item
- Relevance to the African cancer continent
- Feasibility of future measurement activity.

The task force consensus threshold to include a practice was 60%

Voting and discussion took place electronically and teleconference.

A journal article: Choosing wisely Africa: Ten low-value or harmful practices that should be avoided in cancer care was recently published. Among the identified practices was screening, 8 practices about treatment and 1 practice were about surveillance.

Going forward the CW group aims to:
- Consider implementation across Africa
- measure their successes
- Update the list

Dr. Fidel requested everyone participating in the conference to share the practices with their colleagues with the aim to reduce the cost of cancer care and avoid harmful practices that are frequently practiced without evidence.

**3. Dr. Kunuz Abdella**

**Senior advisor to the Minister of Health, Federal Ministry of Health of Ethiopia**

*Topic: National cancer control plans and development of the Ethiopian Oncology Society (ESHO)*

**General background**

Ethiopia is the second most populous nation in Africa with an estimated population of 108,113,150 by July 2020. The new cancer incidence is 67573., and the oncologist to cancer patient ratio is 1:5632. Th3 annual average treatment at TASH plus all other centres is 10,000, and the treatment coverage is 14.8%. Chemotherapy initiation waiting time is 1 month, while radiotherapy waiting time is 12 months. Death while waiting treatment is 40%. Cancer accounts for 6% of all deaths from non-communicable diseases in the country.
Cancer Burden in Ethiopia

- 67,000 new cancer cases with >47000 deaths
- The leading three cancer types are breast (32.3%), cervical (14.5%), and colorectal (5.4%)
- Women share 67% of the cancer burden in the country.

The Ethiopian National Cancer Control Program (NCCP) has a continuum of care model which includes:

**Primary prevention**, achieved through massive awareness creation, HPV vaccination


**Diagnosis and treatment**, comprising cancer treatment centres expansion, chemotherapy subsidy, HRD for cancer care.

**Palliative care**, with the national; palliative care guidelines development and implementation.

4. **Fahmi Usman Seid**  
**MD, Assistant Professor of Clinical Oncology**  
**Hawassa University School of Medicine and College of Health Sc. / Ethiopian Society of Haematology and Oncology (ESHO)**

The history of clinical oncology in Ethiopia dates to 1960 when the first KEV machines were used in 12 Hospital by the German physicians to treat skin squamous cell carcinoma (scc), cervix scc and breast cancer. Later, the machines were transferred to the National largest hospital. In 1994, the first cobalt steel machine was commissioned in collaboration with International Atomic Energy Agency (IAEA). In 2013, the first residency program was started in collaboration with Oslo University and IAEA in international students.

In 2017, the first batch graduated and currently (2020) there are 19 oncologists in Ethiopia.

**Cancer burden in Ethiopia**

The burden of cancer in Ethiopia, like many other low- and middle-income countries, is increasing and is associated with higher mortality rate. The rising incidence is attributed to the aging population, and westernized lifestyle.

The GloboCan 2018 estimates the total national cancer mortality is about 6% and the annual incidence is over 60,000 cases. The annual mortality is over 47,000 cases.

The presentation is often at an advanced stage.

**The National cancer control program**

In response to the growing concern, the national cancer control program (NCCP) was first devised in 2015 with a mission of building a healthcare system to achieve the long-term goal of reducing cancer mortality and morbidity in Ethiopia and with a goal of providing full range of cancer prevention, treatment and diagnosis.

The national cancer control program includes capacity building expansion centres in five different sites, including universities.
**Ethiopian Society of Haematology and Oncology (ESHO)**

This is a professional association, which was established with a vision of coordinating professionals who are committed in playing a key role in transforming Ethiopia’s cancer prevention, treatment and cure. The mission is to uphold the professional rights, professional development, and quality cancer care. In 2018, plans were established to provide policymakers with evidence based technical assistance and increasing awareness, in addition to recognizing people who have contributed to cancer care and collaborating and creating partnerships.

The ESHO inauguration was in October 2019, in the presence of various stakeholders, including the Ministry and cancer advocates. The society has integrated the society and elected a president, vice president and a treasurer.

**Providing policymakers with technical assistance**

Regarding the expansion programs, the National Technical Working team was created, working closely with Federal Ministry of Health to provide technical advice and evidence-based consultations and ensure equity and fair distribution of resources.

**Recognition and awards**

Dr. Johan Tausjo was awarded certificate of recognition in February 2020, for his immense contribution to the initiation of the oncology training in Ethiopia.

**Creating awareness**

Further expansion includes creating awareness through social media and integration of oncology into undergraduate medical curriculum. Further, ongoing expansion work includes creating collaborations with the regional and international societies, in addition to establishing patient support groups and strengthening private sector.

5. **Dr. Susan C. Msadabwe-Chikuni, MBCHB, FC Rad Onc (SA), MMED Rad Onc (Wits), Cancer Diseases Hospital, Lusaka, Zambia**  
*Topic: Improving HR capacity for cancer care in Africa*

**Background**

Zambia is a country in central Africa, with a population of 17 million people and an area of 752610 per square km.

A total of 24565 new cancer cases are reported per year, according to Globocan. Approximately 7380 deaths occur per year This proportion is high compared to the western world. The leading cancers in Zambia are breast cancer (7.4%), cervical cancer (24%), prostate cancer (10.2%), and Kaposi’s Sarcoma (14%). These comprise 56% of all cancer cases in the country.

There is only one comprehensive cancer centre in Zambia. It started as a small outpatient hospital in 2007, offering only radiotherapy and chemotherapy services. It was dependent on the university teaching hospital for all other tests. There were only 4 oncologists at that time, 4 radiation therapists, 1 medical physicist, and a total establishment of 30. Today, the facility is independent with a laboratory, radiology, nuclear medicine, and inpatient facilities. It has 7 oncologists, 2 surgical oncologists, 24 radiation therapists (RTT), 3 medical physicists, and a total establishment of 435. Although the institution has grown in services and the number of cancer patients being seen, the human resource is quite low.
Generally, there is low access to treatment services for patients outside Lusaka province. The government of Zambia has decentralized radiotherapy and chemotherapy services. Effective cancer care requires functional service delivery across a continuum, from the community to the cancer centre. Breakdown at each step leads to patients leaking out of the pathway and failing to complete cancer treatment.

**Radiation Therapy**

CDH planned a local training program for oncology-related programs. RTT training commenced in 2012 and has graduated 3 intakes. A 4th and 5th intake are currently being trained. Specialists training program in clinical oncology, the 1st intake is in 3rd year of study. An oncology nursing program started in 2019, has a total of 21 nurses.

The hospital has a good mix of human resources, infrastructure, and equipment. The institution is an international training program admitting students from different parts of the world for long and short courses. They collaborate with MD Anderson CDH, Brighton/Sussex hospitals, the University of Zambia, and Zambia colleges of medicine and surgery.

There exist opportunities for collaboration with other African countries, especially those offering oncology courses on the continent. Dr. Susan proposed the formation of a college of oncology of East and Central Africa where people from East and Central Africa can come for training. This would benefit the region through standardized training, the pool of resources especially human, and improvement in quality.

She concluded that investment in human resources for health is paramount in reducing cancer morbidity and mortality. There exist opportunities for collaborations that should be leveraged.

**AORTIC SESSION**

1. Dr. Nazik Hammad  
**Associate Professor at the Division of Medical Oncology, Queen's University, Kingston Health Science Center. Faculty of Health Sciences at Queen's University**  
**Topic: Education and Training Committee Presentation-Brainstorming Session- Building Regional Networks**

The mission for the education and training committee is to provide high quality education and training for cancer professionals, trainees. Their values are to have an education that is Afrocentric, local context relevant, inclusive, equitable and culturally appropriate. Excellence, global accreditation standard and global quality assurance, the action plan has 4 domains;

1. Enhancing professional development  
2. Harmonize training across the continent  
3. e-Learning, where AORTIC has a functional YouTube channel. Several webinars have already happened. African cancer dialogue is a new initiative where oncologists come together to discuss new evidence.  
4. Postgraduate training, there are activities designed to enhance faculty performance.

Dr. Nazik invited the attendees to participate in AORTIC activities

2. Dr. Ntokozo Ndlovu  
**Senior Radiation/Clinical Oncologist and Clinical Epidemiologist, University of Zimbabwe Faculty of Medicine and Health Sciences (UZ-FMHS)**
Why the need for collaboration as a region?

There is a need to:

- Develop robust concepts from the wider input.
- Boost capacity for research.
- Pooling of resources (which are usually scarce)
- Output of research with more impact.
- Address common problems in a timely manner

There are postgraduate training opportunities conducted as part of the training in Zimbabwe. The postgraduate learners do research methodology and conduct research projects.

Collaboration With a Local Focus

The institution had a collaboration with the American society of clinical oncology, to address unique health care system issues including cancer burden, challenges in health care delivery, multidisciplinary approach to cancer care. This pilot study had the sustainable benefits of building local capacity.

She emphasized that African regional collaborations can be easily achieved through existing clinical trials consortia.

3. Dr. Sulma Mohammed
Professor of Cancer Biology at the Department of Comparative Pathobiology, Purdue Center for Cancer Research, Purdue University

Topic: Translational research in Eastern Africa-Sudan/Zambia/Kenya

Dr. Sulma discussed four ongoing collaborations in her laboratory including:

1. Early detection of breast cancer in rural areas of Sudan
   This project deals with training and educating and training lay women volunteers on breast abnormalities and then sends them to look for these abnormalities in women in their villages. The women do not know much about cancer; hence they are taught how to perform self-breast examination. The project has been successful as they are looking for more funding.

2. Differences in protein expression of triple negative and luminal A breast cancer in African and African American women
   Triple negative tumours are very aggressive and have poor outcomes in black women, compared to luminal tumours. This study looked at proteomic profiles and the findings suggested that tumours in African and African American women are rich in signalling pathways that are different from Triple negative tumours in white women and showed the link between AB routine call Elks LTE expression cholesterol obesity and tripping negative in African. So, the study looked at the protein expression and metabolism profiles, within and across races. There were deficiencies in chrome 4B50 or cytochrome B7B1, an enzyme which is responsible for colorstreet degradation.

3. Immunoprevention of breast ductal carcinoma in situ: Zasu project deals with immunodeficiency of projectile carcinoma insight. A pre-clinical trial will be done in mice and dogs because these animals develop lesions naturally as in humans and develop cancers, without chemical or genetic manipulation. The study will test 7 different vaccine formulations for safety and efficacy and is funded by DoD.
4. Point of care screening test for early cervical cancer detection: The project is funded by NIH and is an R01 and is looking for samples from Africa. The reason for developing a point of care test is because the current screening methods like acetic acid and pap smear are not easy to implement in Africa. So, there is a need for a screening tool that can be used in a single visit. Dr. Sulma lab aims to develop a colorimetric visual test for point of care screening. Several HPV test kits have been tested in Africa, but it takes an average of 2.5 hours to get the results. Since not every HPV infection leads to cancer, some infections are transient and can disappear. This might lead to overtreatment. Additionally, although they are sensitive, they lack specificity. Together with some collaborators, they set out to develop a lateral flow assay, by first considering the proteomic profiles in cervical cancer patients compared to the normal individuals. They observed overexpression of VCP protein in cervical cancer but not in normal samples. Immunohistochemistry revealed that normal epithelial tissues do not express this protein. The idea behind the test is that a positive sample will form a visible colour that can be visualized without a machine, similar to a pregnancy test. Efforts are in place to multiplex the test to detect up to 4 proteins.

Translation from the Lab to the field
The lab has samples from the collaborators and steps are underway to meet regulatory and implementation requirements.

This test method is
- Easy to use
- Cost effective
- Generates results within a short time (15 minutes).

MEDIA AND THE ONCOLOGIST

1. Dr Neil Floch
Director of Bariatric Surgery Nuvance Health System
Section Head of General Surgery, Norwalk Hospital. Associate Clinical Professor
University of Vermont School of Medicine
Topic: The Oncologist and Media – Engaging with social media - Tips and tricks

The social media goal is to educate, communicate and collaborate.

1. To educate about surgical treatments
2. To increase surgeon, use of social media and Twitter
3. To unite physicians in common goals online
4. To communicate, educate and collaborate between physicians of different specialties.

Better than meeting on social media is meeting face to face.

LinkedIn is the most professional way of getting to know individuals. One can upload an online CV and can start collaborations. However, it is not the best for linking up with large numbers and is not designed to promote an agenda nor does it attract patients.

How To Portray Yourself on social media
One should use the real names and a professional picture. Consider maximizing the bio to reflect one’s training, and interests. The articles/books published should also be indicated. Further the website/blog can be provided, in addition to an emotional comment and an attractive picture. Symbols such as # may be used to bring people to the site and to categorize the subjects. When using twitter retweets and likes are a measure of interest in the tweet and one should reply for commentary.

Social networking is important, especially when one has followers. The value of a network is proportional to the square of the number of the connected users of the system.

**Networking during the COVID-19 Pandemic**

During the pandemic it was difficult to meet people in person. Virtual meetings are also a challenge, but one can find a common ground to do research together, seeking similar information and advocating similar issues.

**Who to follow on Twitter?**

Be sure to follow people with the same interest., who might be recommended by Twitter or others. Follow people who retweets or likes the same tweets. Don't follow everyone back. Don't follow and then unfollow. Follow the Twitter rules.

**Reducing risks**

- Be professional, credible, responsible, if you pause, don't publish, don't talk about specific cases. Instead, generalize. Don't give specific advice. Get patient consent, in case you want to use their picture or talk about them.
- Find your social media comfort zone.
- On Instagram, use as many hashtags as possible.

**Advancing your career forward on social media**

This can be achieved through communication, collaborating on projects, mentoring, teaching, education learning, promoting research.

Some surgeons formed social media groups through which they were communicating during the COVID-19 disease. Published papers can be promoted through discussing them on social media.

We can collaborate with people without ever meeting them before. Mentoring other physicians, communicating with then and giving them advice

**Potential contributions of social media to surgical research.**

- Connecting investigators with common interests
- Fine-tuning relevant scientific questions
- Clinical trials network support
- Patient engagement and recruitment for clinical trials
- Patients reported outcomes research.
- Information sharing and knowledge dissemination
- Promotion of surgical research among patients, students and scientists.
- Increasing visibility of surgeon-scientists role models
- Feeding data lakes for data driven research
2. Dicey Jackson Scroggins
Director of Global Outreach & Engagement for the International Gynecologic Cancer Society, Co-chair of the Advocacy Special Interest Group for the African Organisation for Research and Training in Cancer

Topic: The written word; How to Navigate – Letters to the editor/ Op–eds/educational

A Tribute to the patients and survivors

In remission, in recurrence, in active treatment and in every conceivable state of personal discomfort and challenge, cancer survivors;

- Advocate for themselves, their families, their friends, their neighbours and strangers unable to advocate for themselves
- Educate health professionals and the general public about cancer prevention, access to care, and treatment and about the everyday personal side of life with and after cancer

Participate in scientific review panels and clinical trials

- Walk, run and wheel in chairs in support of research funding and legislative action.
- Put human faces and real lives on these diseases
- Advocate and fight for equal access, quality care and the best possible quality of life for everyone.
- Choose hope even when despair seems so tempting and requires so little
- Understand that every second, every new dawn is a gift, a blessing undisguised.

Purpose: To provide guidance on preparing publishable research/science manuscripts

Objectives:

- To understand the importance of selecting an appropriate journal.
- To understand the imperative for adhering to structure and specifications
- To understand significant issues related to science writing and the likelihood of publication.

Research articles

Consider:

Publication selection/requirements/fit: Do some surveys to find out the research focus, and audience. Be real and check the guidelines.

Structure/format: This may vary depending on the journal. Most journals have the format of the title, abstract, introduction, materials and methods, results, discussion, acknowledgement, cited references/literature, supplemental materials.

Specifications/guidelines: Pay attention to the small things

Journal/editor imperatives/focus: Know the audience focus, judge the likelihood of the article being published, consider the imperatives including the quality of science, accuracy of statistics, clean and clear writing, facts and honest reporting. Avoid excessive use of jargons and acronyms, edit the document and ensure the structures are clear. Avoid overstatement.
A reviewer's perspective: During review, a reviewer will look at bad writing, grammar, punctuation and spelling errors, adherence to guidelines or format, length and complexity of sentences, clarity of heading structure. A reviewer wants clarity, consistency, novelty, good clear writing, precise language, accuracy, supported findings and credibility.

Basic Scientific writing tips

- Get the reader's attention without exaggerating
- Avoid bait and switch titles nor heading.
- Use figures and tables,
- Anticipate questions and concerns
- Remember the secondary audience

Letters to the editors/op-ends

- The tips are the same as a manuscript
- Be concise
- Opinion or statement must add something significant to the understanding.
- The guidelines and specifications must be followed.

Summary

- Do some research and choose the appropriate journal
- Small things impact the credibility of the work
- Always follow the journal guidelines
- Write, edit and proofread your work.

3. Dicey Jackson Scroggins, Director of Global Outreach & Engagement for the International Gynecologic Cancer Society, Co-chair of the Advocacy Special Interest Group for the African Organisation for Research and Training in Cancer

   Topic: Interactive session- Creating Health education content

Purpose: To provide guidance and practice in writing health messages that are informative, engaging and accurate.

Objectives

- To understand the importance of health messages being accurate above all
- To understand the imperative of sticking to the facts
- To understand the difference in engaging and misleading messages

Basic principles/Considerations

- Consider the most important information
- Number the messages
- Outline the relevance
- Explain the benefits top readers
- Choose words wisely
- Make the document readable
- Use clear visuals.
• Do your homework and give solid facts.
• Tie the facts to an interesting story that makes it relevant and make people better able to engage.
• Be honest and open
• Always give evidence where appropriate

Avoid potentially wrong phrases such as
• A cure is imminent ...
• The most important advance in...
• You will never need ...

4. Dicey Jackson Scroggins, Director of Global Outreach & Engagement for the International Gynecologic Cancer Society, Co-chair of the Advocacy Special Interest Group for the African Organisation for Research and Training in Cancer

Topic: Bonus feature - Creating your own video content to highlight work/educate-

Purpose: To provide basic guidelines and tools for producing digital stories

Objectives
• To learn the basic elements of good storytelling
• To understand how to use your cell phone to tell memorable stories and to produce videos
• To understand processes and tools useful in digital storytelling

What Is Digital Storytelling?
• It is a short form of digital media production that allows everyday people to share their stories
• Modern expression of the art of storytelling using computer-based tools
• Practice of combining narrative and digital content, including images, videos and audio
The basic equipment is a smartphone with a camera or a tablet/iPad with camera and enough free space, to create a story.

The basics of digital storytelling include:

Audience
• The Story you want to tell and why
• The early hook depending on the length of the story
• Who, what, when, where, why aspects of the story?
• Consider the desired and the expected response
• Understand the basic camera shots and shot composition

Tell a good story
Dicey played a short video she has done that was inspired by a young man who saw his 2 days old baby sister and he said to his mum "I think i am falling in love"
Preliminary steps and decisions to make

- Why are you making the concept/idea?
- Who are the primary and secondary audience?
- Consider the setting
- Look at the tone and the atmosphere
- Look for existing photos/clips and images
- Who or what will be the focal point?
- Consider the music, voice-over, narration and sound
- You might need a storyboard, mind map and a plan

Useful tools:

Apps for the photo, video or text editing

- Snapseed
- Prisma
- Photoshop express
- iMovie
- Adobe spark

Other equipment

- Selfie stick
- Gorilla pod
- Phone Boom

TRACK 5:

PALLIATIVE CARE
Chairs: Dr Zippy Ali, Dr David Makumi

1. Mr David Musyoki
Advocacy Officer, Kenya Hospices and Palliative Care Association (KEHPCA)

*Topic: Legal Issues in Palliative Care*

People facing life threatening illnesses are deeply vulnerable. Palliative care seeks to prevent and relieve unnecessary suffering of any kind-physical, psychological, social or spiritual. However, palliative care is often not available or inadequate. Where available, palliative care is often narrowly applied as simply giving pain killing medicines.

It is necessary to have holistic programs that address all other aspects including provision of legal services.

*What Is Palliative Care?*

Palliative care is an approach that improves the quality of life of patients and their families facing the problem associated with life-threatening illness, through the prevention and relief of
suffering by means of early identification and impeccable assessment and treatment of pain and other problems (physical, psychological and spiritual).

Methodology

In 2010, KEHPCA designed a program of integrating legal aspects in palliative care through:

- Advocating and addressing the legal needs of the patients
- Training palliative care recipients and providers on legal aspects
- Making the program part of holistic care - Integration awareness creation for targeting patients and families
- Development of resource materials on legal aspects to include legal aspects in PC handbooks, brochures, posters and fliers.

Legal Framework for palliative care-Human rights framework

A right to palliative care can be implied from the overall international human rights to health-United Nations committee on economic social and cultural rights

Both the UN Special Rapporteurs on Health and torture have cautioned against the failure to ensure access to medicines for pain relief as a human right violation

Consensus statement for strengthening palliative care as a component of comprehensive care throughout the life course in Africa- 5th International African Palliative Care conference, 2016.

The Kenya constitution gives provisions for palliative care for diseases including cancer, HIV, tuberculosis. These people have the right to be treated with confidentiality.

Right and common abuses

<table>
<thead>
<tr>
<th>Nature of right</th>
<th>Example of common abuse</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breach of right to privacy</td>
<td>Performing a medical procedure on a person without their informed consent</td>
</tr>
<tr>
<td>Breach of right to the highest attainable standard of healthcare</td>
<td>Disclosure of a person's medical information without consent</td>
</tr>
<tr>
<td>Breach of right to work</td>
<td>Lack of access to pain relief services and commodities</td>
</tr>
<tr>
<td>Breach of right to property</td>
<td>Denial of treatment</td>
</tr>
<tr>
<td>Breach of right to integrity of the person</td>
<td>Discrimination in health insurance</td>
</tr>
<tr>
<td>Unlawful termination from employment</td>
<td>Disinheritance</td>
</tr>
<tr>
<td>Verbal, physical or sexual abuse</td>
<td></td>
</tr>
</tbody>
</table>

Legal Aspects

- Making a valid will
- Property and inheritance
- Custody and guardianship of children
- Legal rights and benefits
• Conflicting goals—physical/care/family
• Refusal, withdrawal or withdrawing treatment
• Criminality of euthanasia

Interventions over the years have included:
• Creating national palliative care guidelines
• Empowered professional in care
• Setting up clinical placement sites
• Supervision visit
• Legal practitioners involved in health care
• Community volunteers engaged
• Opinion leaders and the media involved to raise awareness
• Over 10 palliative care units and hospices have integrated legal aspects as part of care they provide
• Over 1000 patients and family members are equipped with legal knowledge.

Conclusion
• A national wide implementation and integration of clinical palliative care programs that incorporate legal aspects should be prioritized.
• Improvement of quality of life of patients and families by life threatening illnesses must be holistic
• Advocacy for access to palliative care should be holistically included in the implementation of the right to health and universal health coverage.

2. Dr John Weru
Assistant Professor, Pain & Palliative Medicine at the Aga Khan University Hospital.

Topic: Integration of Palliative Care in Continuum of Cancer Care

Introduction:
Palliative care (PC) has been recognised as part of best practice in oncology

ASCO statement (2009) and provisional opinion (2012) explains that combined standard oncology care and palliative care should be considered early in the course of illness for any patient with metastatic cancer and/or high symptom burden.

Kinds of palliative care

Primary- Line oncologist with his/her team

Secondary- Team dedicated in skills and time to the field

Tertiary- Specialised teams with advanced training interventions e.g., pain, palliative sedation.

Benefits of PC
• Improved quality of life
• Lower depression rates
• Aggressive end of life care

Challenges
• Unpredictable disease trajectory
• Unawareness of goals/role of PC
• Different languages between oncologists and the PC team.
• Unclear treatment goals/focus on cure
• Poor/lack of basic training on PC.

Major indicators of integration of palliative care into oncology
• Presence of palliative care inpatient consultation team
• Presence of PC in outpatient clinics
• Presence of an interdisciplinary palliative care team
• Routine symptom screening in the outpatient oncology clinic
• Routine documentation of advance care plans in patients with advanced cancer
• Early referrals to PC
• The proportion of patients with pain assessed on the last two visits before death
• The proportion of outpatients with 2 or more emergency room visits in the last 30 days of life (negative indicator)
• Place of death consistent with patient preference
• Didactic PC curriculum for oncology fellows provided by PC teams
• Continuing medical education in palliative care for attending oncologists
• Combined palliative care and oncology educational activities for fellows/trainees
• Oncology fellows have routine rotation in palliative care.

3. Prof. Jessie N. Githanga, MBChB, MMed (Pathology), FCPath-ECSA
Associate Professor in the Department of Human Pathology, University of Nairobi
Topic: Delivery of Palliative Care Services to children in Kenya; is it a mirage?

What Is Paediatric Palliative Care (PPC)?
PPC is a standard of care for children with cancer and results in improved quality of life for these children. PPC is a special aspect of PC. The active total care of the child’s body and spirit as well as giving support to the family. PPC should be initiated with the diagnosis of life-threatening/life-limiting conditions.

It requires a broad multidisciplinary approach including the family and can be provided in tertiary care facilities, community HC, and even in children's homes.

It makes use of community resources.

The Old and The New in Palliative Care
The old model of palliative care from diagnosis to death includes curative care, palliative care, and bereavement care.
The new model of palliative care extends through diagnosis, cure seeking care, or life-extending care, quality of life maximizing care, family-supportive care, bereavement care, and finally death.

Only 1% of children and families in Kenya who require palliative care receive it. These are mainly from the urban setting and in areas of Eastern, Central, and parts of western Kenya. The rest of the country completely lacks palliative care. Therefore, there is an unmet need for PPC in Kenya.

**Reasons For Poor Accessibility To PPC**

- Lack of PC policy and strategic framework
- Poor access to community and healthcare services
- Few healthcare providers and lack of skills
- Caregiver misconception
- Poor knowledge of the unmet PC needs
- Limited access to affordable chemotherapy and radiotherapy
- Restricted access to paediatric formulations

**Reversing the trend**

Integration of PPC into the broader health system.

**PPC education** to increase knowledge and skills

Demand creation that is health care driven

**Research** to provide evidence to inform practice

Funding to primary, secondary, and tertiary levels of care.

**Way forward**

- Advocacy
- Workable models
- Research
- Collaboration

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**POLICY & ADVOCACY**

1. Dr. Valerian Mwenda  
National Cancer Control Programme, Ministry of Health, Nairobi Kenya  
*Topic: Midterm Review of The Kenya National Cancer Control Strategy 2017-2022*  
*Implementation: Progress and Gaps*

Globally, cancer control interventions are guided by national control plans.

The Kenya National Cancer Control Strategy (2017-2022) (NCCS) comprises the national cancer control blueprint. It outlines broad areas of action along the cancer control continuum through 5 strategic pillars.

Implementation involves multi-stakeholder technical working groups
Annual review meetings are organized to track the implementation of the NCCS. They evaluate achievements and shortcomings in the implementation and provide a forum for stakeholders to forge and strengthen partnerships.

In August 2020, a midterm of the NCCS implementation period workshop aimed to identify achievements, success factors and gaps to inform future partnerships.

**Methods**

A virtual midterm review workshop was held on the 26th and 27th August 2020, with a total of 75 and 66 participants on day 1 and 2 respectively. The participants were from the ministry of health, other state departments, research institutes, academic institutions, civil society and international organizations.

**Findings**

- Findings from the workshop revealed the status of 5-year cancer control pillars including:
  - Prevention and screening
  - Diagnosis and registration
  - Treatment and palliative care
  - Coordination
  - Monitoring and evaluation

**Key Successes for Each Pillar**

**Pillar 1: Screening, detection and early diagnosis**

<table>
<thead>
<tr>
<th>Key achievements</th>
<th>Main Gaps</th>
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<tbody>
<tr>
<td>Advocacy and awareness creation</td>
<td>Prevalence of some unknown risk factors e.g., active hepatitis and HPV infections.</td>
</tr>
<tr>
<td>Implementation of the national cancer screening guidelines</td>
<td>Cancer screening coverage surveys</td>
</tr>
<tr>
<td>Pilot projects on cervical and breast cancer screening</td>
<td>Unavailability of genetic screening: familial cancers, targeted screening for siblings</td>
</tr>
</tbody>
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**Pillar 2: Diagnosis, registration, surveillance**

<table>
<thead>
<tr>
<th>Key achievements</th>
<th>Main gaps</th>
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<tbody>
<tr>
<td>Establishment of the national oncology reference laboratory</td>
<td>Development of guidelines and algorithms for cancer imaging</td>
</tr>
<tr>
<td>Finalization of the quality assurance guidelines for cancer</td>
<td>Development of quality assurance guidelines for cancer imaging</td>
</tr>
<tr>
<td>Establishment of the Kenya national cancer registry system</td>
<td>Development of a training plan for cancer diagnosis (pathology and imaging) and registration</td>
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**Pillar 3: Treatment, palliative care and survivorship**
<table>
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<tr>
<th>Key achievements</th>
<th>Main gaps</th>
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<tbody>
<tr>
<td>Establishment of the regional cancer centres</td>
<td>Development of guidelines for support and rehabilitation of children and adolescents with cancer.</td>
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<tr>
<td>Finalization and dissemination of the national cancer treatment protocols 2019</td>
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<tr>
<td>Training programs</td>
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<tr>
<td>Development of guidelines for support and rehabilitation of children and adolescents with cancer.</td>
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**Pillar 4: Coordination, partnership and Financing**

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<tr>
<th>Key achievements</th>
<th>Main gaps</th>
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<tbody>
<tr>
<td>Setting up of the national technical working groups</td>
<td>Support establishment of a cancer control priority interventions with the public and private sectors</td>
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**Pillar 5: Research, monitoring and evaluation**

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<tr>
<th>Key achievements</th>
<th>Main gaps</th>
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<tbody>
<tr>
<td>Development and dissemination of cancer surveillance tools</td>
<td>Establishment of a cancer research training fellowship</td>
</tr>
<tr>
<td>Annual strategy implementation review workshops Finalization of the cancer research agenda</td>
<td>Creation of a research repository</td>
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**Conclusions**

Critical success factors for the last three years of NCCS implementation in terms of effective partnership, ownership, accountability; clear monitoring and evaluation framework

The key gaps include strengthening of community level interventions, financing, a clear framework for childhood cancer management and palliative care

**Recommendations**

There is a need for sustained multi-sectoral collaboration and fast-tracking of guidelines for childhood cancer and cancer imaging

Financing to sustain advocacy

2. Mr. Anyona O Joseph
Research Assistant at KEMRI


Globally, cancer accounted for approximately 18 million cases and approximately 15% of deaths in 2018. The cancer burden mainly impacts LMICs, with a 100% and 81% increase in cancer incidence from 2008 to 2030.

These countries have a 5% global resources allocation for cancer Kenya has a human development index of 0.579 and thus is in the medium category
Introduction

Kenya records approximately 28000 new cancer cases and a mortality rate of 78.5% each year.

Cancer is the third cause of death after infectious and cardiovascular diseases.

Although there exists valuable cancer records and information from research, there is no bibliometric analysis to gauge the informativeness of these published articles.

The aim of the current study was to investigate the trend of publications on cancer research in Kenya, the contribution, network analysis between researchers, funders and collaborators.

Methodology

The study reviewed articles used in the systemic review of oncology research in Kenya from 2007-2017. Publications in web of science database were analysed from the scoping review set of 284 studies.

The citation metadata of 203 papers were downloaded into Microsoft excel. Sci2 was used to analyse funding patterns, collaborations to identify the types of cancer research conducted in Kenya. Gephi and excel were used to visualize the network analysis. Additional descriptive analysis was completed using excel. Duplicate citations were removed using Mendeley v1.19.6 Citation metadata of 192 articles were downloaded into Microsoft excel. Funding agency and author affiliation were standardised into a common name and acronym.

These findings and connections were contextualized within the Kenyan research landscape by local leaders in research.

The top 10 institutions involved in cancer research collaborations and networks include:

- University of Nairobi (56 articles)
- KEMRI (54 articles)
- Moi University (30)
- KNH (30)
- MTRH (15)
- AMPATH (11)
- Maseno University (11)
- Tenwek mission Hospital (10)
- Coptic hospital (10)
- Ministry of health (8)
- International institutions involved in cancer funding include
  - Indiana University (28)
  - UCSF (24)
  - University of Washington (21)
  - SUNY Upstate University
  - Aga Khan University Hospital

Local institutions published 235 articles in collaboration within the country.

International institutions partnered with 160 articles.
Institutional co-authorship was categorised into Kenyan based. 22 articles were co-authored between UON and KNH, 22 between KEMRI and UCSF and between Moi and Indiana University.

**Conclusion**

Bibliometric analysis provides a clear intuition of individual and institutional achievements

Emphasizing historical publication trends per year and funding agencies

Identification of future areas of collaboration and cancer research funding priorities.

Guides policy makers on developing evidence-based decision making, planning to strengthen future research capacity and funding.

3. **Prof. Shaukat Abdulrazak**
   **Director for the Division for Africa, Department of Technical Cooperation, International Atomic Energy Agency**

*Topic: IAEA TC Assistance to Kenya Aimed at Providing Quality Cancer Diagnosis and Treatment*

Globo can 2018 estimates new cancer cases and deaths in Kenya at slightly over 47,000. It is anticipated if these scenarios don’t change, then by 2030 we will be standing at over almost 78,000. The death cases are expected to rise from 32,000 in 2018 to almost 55,000 by 2030. The commonest cancers in Kenya are breast cancer followed by cervical cancer.

**What are we doing about expenditure?**

The total health expenditure from the public is 39%, private is 28% while of pocket stands at about 33%. The government public health expenditure in Kenya is only standing now at about 6%, contrary to the recommendation in Abuja declaration of 15%. So, there is still a lot of room for improvement there.

Kenya has 0.2 physicians per 1000 people, yet the EU member states average in 2013 was 3.39 per 1000 people.

In Kenya, 28,700 people require radiotherapy annually. The number of recommended radiotherapy machines in the country is 58. At present, Kenya has got about 11 radiotherapy machines. This calls for partners to work together to improve the situation. In terms of radiotherapy coverage and considering the percentage of patients that can currently be served through the private and the public sector, 81% of the patients have no coverage at all. A further 5% have public access while private access is standing at 14%.

The IAEA mandate as far as the health is concerned is to accelerate and enlarge the contribution of atomic energy to peace, health and prosperity throughout the world. The agency tries to promote atoms for health. The agency is focusing on the diagnostic and treatment of cancer.

**The overview of IAEA support to cancer care in Kenya**

The IAEA support to Kenya could date back to 1976 in areas such as nuclear medicine, including radiopharmacy, and early detection of cervical cancer, strengthening and expanding...
of radiotherapy services, establishing a secondary standard dosimetry laboratories as well as in areas of nutrition.

A total of 23 national technical cooperation 33 regional projects and one interregional projects have been established.

**IAEA Specific support to cancer care in Kenya**

**Main achievements**

The agency has strengthened the nuclear medicine, radio, radiotherapy facilities or services at the Kenyatta National Hospital, through the procurement of machines equipment, the latest being a CT scan.

Capacity building, the human resource capacity and expertise advice

Establishment and initiation of local training and of course in areas of medical physics, which is yet to be finalized, oncology, RTTs as well as ROs

Support to Moi teaching and referral hospital (MTRH) in Eldoret in procurement of equipment, including a Linux machine that will be commissioned very soon.

**Challenges**

- Need to develop a national human resource development plan.
- Local training schemes are yet to become sustainable to address the human resource needs for the country and the sub-region.
- Need to have a better coordination between Kenyatta National Hospital and new radiotherapy centres.
- COVID-19 pandemic has been a major threat to the health care systems worldwide. Kenya requested support from IAEA, for real time PCR machines and personal protective equipment to facilitate testing.
- IAEA new initiative is to combat zoonotic diseases through an integrated action plans (ZODIAC) and has launched a new program to support the female graduates in areas of nuclear science and technology, including the areas of cancer care. Prof. Shaukat encouraged the audience to take full advantage of this initiative.

**Way forward**

- Kenya needs to become self-reliance in terms of human resource capacity and be able to continue with the local training schemes.
- Efforts are being made to see how Kenya could become a sub-regional hub in terms of human resource development
- Radiotherapy equipment to be installed and commissioned at the Moi teaching referral hospital.
- Expansion of other centres such as Mombasa, Carissa, and Nakuru.
- Providing the support to Kenyatta National Hospital in terms of being the regional centre to help other centres.
- Forging and building partnership to maximize the impact to the world.

In summary, Kenya is on the right path in terms of meeting its demands of diagnosis and treatment of cancer. There's a lot of room for improvement there, and in partnership with the IAEA, it is very possible that Kenya would be able to meet its demands over time, be able to
build capacity and at the end even become a sub-regional hub and offer these opportunities to other countries as well.

**PHYSICIAN WELLNESS**

Chairs: Mr Phillip Odiyo, Dr Esther Nafula

1. Philip Odiyo Ouma PhD  
Psycho-Oncologist  
Faraja Cancer Support  
*Topic: The Nexus Between COVID 19 And Professional Burnout in Oncology Hcps*

Burnout is an erosion of the soul caused by deteriorations of one’s values, dignity, spirit and will.

Research indicates that 50% of HCV worldwide experience burnout, where physicians account for 70% and nurses 50%.

**COVID 19 Nexus**

- Complex work environment with fear of exposure
- Complex patients (confirmed and presumptive)
- Complex virus
- Complex treatment protocols that keep changing

**Society for critical care in medicine report (2020)**

- Increased level of personal stress
- Nurses reported highest level of cancer is exposing the family
- Concerns about PPEs
- Staffing needs

Developing measures to limit potential spread of virus (changing clothes, showering, limiting physical contact until decontamination).

COVID 19 can thus be viewed as a double-edged sword. On one hand it can and will no doubt exacerbate a difficult situation for the world force. This is despite the heroisms, dedication and selflessness we have all become accustomed to see in the people on the front line in times of adversity and pressure. On the other hand, it may just be the cathartic condition which finally leads to burnout being recognised for what it is-Which is the symptom of a mismatch between the requirements of the system.

Emotional exhaustion: Loss of emotional resources, and inability

2. Rev. Richard W. Bauer  
Roman Catholic priest with the Maryknoll Fathers and Brothers  
*Topic: Spiritual Care: An essential component of Palliative Care*

Fr. Richard W. Bauer is a board-certified chaplain with over 35 years’ experience providing spiritual care to palliative care patients. He thanked the organizers for inviting him to make his presentation on integrating spiritual care into palliative care service provision.

- He mentioned that spirituality and religion are related, but they are different
- Caring for the human person involves quality spiritual, holistic care,
Both children and adults need to understand the meaning of why this is happening to me, why do I have cancer? Why is God doing this to me?

Spiritual Care in Africa is very exciting because African traditional beliefs and western beliefs regarding health and wholeness around a person's illness all weave together to form complex meanings, as a patient makes sense out of their life-threatening illness.

Fr. Richard informed everyone listening to his presentation, that you do not have to have the answers. Many times, patients ask the questions.

1. Why is this happening?
2. Why is God doing this to me?

The Role of Clinicians Is to Be Present for The Patients

Fr. Richard observed that talking about death is very countercultural in Kenyan culture and in his own culture, but we reminded the participants that they have the call to be with the patients. Fr. Richard explained that throughout the world, in palliative care, there is a general specialist model of providing care that every clinician, nurse, clinical officers, psychologist, social worker, counsellor, and Chaplain needs to be aware of. They need to understand the basics of palliative care and know how to screen for physical pain, psychosocial pain, and spiritual distress.

Specialists, physicians, nurses, chaplains, are trained specifically in palliative care to do a deeper assessment.

The WHO resolution that really revolutionized the understanding of palliative care, and gave us a global definition of palliative care, as an approach that improves the quality of life of patients and children with life threatening illness. The key to this definition is the identification and assessment of pain, whether it's physical, psychosocial, or spiritual.

So, what is the spirituality that we're talking about?

An international consensus definition says that spirituality is this dynamic and intrinsic aspect of our humanity, through which every person seeks ultimate meaning, purpose and transcendence or meaning, purpose and connectedness. So, this is true whether you believe in God or whether you're an atheist, we all have a spiritual dimension about ourselves. That must be addressed and assessed in palliative care.

The national consensus project also provides some important definitions for the domains of palliative care, throughout the world to help us understand the domains. The domain lists the spiritual, religious and existential domain of palliative care.

Screening for spiritual distress is key, where some of the screens are simple questions like asking the patients are you at peace? Do you have spiritual pain? Is there a pain deep in your heart, deep in your soul? All these screening techniques can help us move to whether we need to do further assessment.

The FICA spiritual history tool designed by Dr. Cristina Poe husky has some good evidence behind it. This is a tool that you can put into your history and physical or your nursing assessment to do a brief spiritual history for the patients. Richard mentioned that it takes about a half a day to three quarters of the day to train clinicians to integrate this important evidence-informed tool into your practice that enables you as a clinician to talk respectfully about your clients' spiritual beliefs, even if those spiritual beliefs are different from your own. It is vitally important.
There is a need to address spiritual care in our clinical practice. We know from the research and the evidence that addressing spiritual issues in palliative care can have a positive impact on the patient's emotional, social, and physical well-being.

To address the complete pain of a patient that Dame Cicely Saunders talked about, and that Elisabeth Kübler Ross talked about, the spiritual pain must be assessed and addressed. That spirituality is an important aspect of every person's life and may need to be supported during palliative care for the clinicians.

Understanding how a patient's spiritual beliefs create their worldview is critical to understanding how they will address this life-threatening illness and addressing spiritual issues.

It helps to empower patients and their families and facilitates communication between the patients.

Finally, there’s a lot of good informed and slow evidence-based research. Fr. Richard provided a link to the Dropbox with some great articles where one can scan the QR code on the slide he was presenting. Alternatively, members could email him to receive a link if interested.

3. Dr Esther Nafula  
Palliative Care & Pain Management Specialist  
Kenyatta National Hospital  
*Topic: Addressing Uncertainty or Fear*  
Research has shown that many patients with cancer especially those in stage four, or with a poor prognosis, suffer from a lot of stress, and 67% of them get anxiety, 45% get depression.

The causes of these fears come from fear of dying.
- In Kenya, most patients are diagnosed at stage three and four. Majority of the patients equate a cancer diagnosis to a death sentence. Consequently, many of them are preoccupied with thoughts of death and dying,
- Fear of disease progression.
- The ones who are diagnosed early fear that the disease might get worse; they may die and have a fear of recurrence.
- Patients, who are treated successfully and get into remission, get fears of recurrence, as they go on with their follow up throughout the years.
- They are worried that the cancer might come back, and it might be worse than at the time of diagnosis.

Many patients go through a lot of stress, wondering:
- What will happen to their families?
- Since the disease's taking a toll on them, are they going to get better?
- Is it a serious illness?
- Why are they the ones suffering with cancer?
- How long do they have to live?

What else can be tried, apart from the interventions that have already been given?

**CASE**
A 40-year-old patient presented to at KNH with shortness of breath. She had recurrent bilateral pleural effusions, so she had been referred for management of chest pain. She rated her pain on the numerical pain scale as 10 out of 10. The Chester's had been inserted a week prior to her presenting to the palliative care unit. She had been diagnosed with metastatic cancer of the cervix, about three months earlier (in March 2020). So, she had presented to Mater hospital with PV bleeding and was found to have a suspicious cervical mass. A biopsy revealed it was cancer of the cervix, and then metastatic workup showed that she had cancer in the brain, the lungs, the liver and the bones. The patient at the time of presentation was oxygen dependent. She had bilateral indwelling chest drains for the effusions. pleurodesis had been attempted and failed. She had also received five weekly cisplatin and had radiotherapy and brachytherapy, but her prognosis was known to be poor. So, she was referred to KNH for pain management and prognostic counseling.

Unknown 3:11
Her Ecog score was three. She had limited activity mostly confined to a wheelchair or the bed. She was a single mother of a 14-year-old and had been terminated from her employment because she had been on sick off for about two months. The employer gave her termination on sick grounds. She was mostly worried about the fact that she had received treatment the treatment had not worked. She was a single mother of a 14-year-old. She did not know who was going to provide for her child after she died, in case she was going to die with the illness. She was preoccupied with thoughts of dying, and she could barely sleep because every time she went to sleep, she thought she might die in her sleep. Then being the sole breadwinner for her child, and without a job, she was financially constrained.

Cancer treatment is expensive and had taken a toll on her. Her major caregiver was her sister who lived about 25 kilometers away and could not be present all times, which meant that most of the time she was at the mercy of her house girl.

The patient's worries were death, the financial constraints, and disease progression. She was worried about her son and she had not revealed her diagnosis to her son.

She wanted the hospital to help reveal the diagnosis to her son. The doctors emphasized to her the importance of disclosing her diagnosis to her son because of the issues that were happening around her and especially because of her poor prognosis. It was important that her son starts to psychologically prepare that the mom is not going to be around for so long and to know that his fears were valid.

**Results/findings**
Many patients have increased psychological distress. Symptoms can present as poor appetite, insomnia, fatigue, and in some patients, depression that will require them to see a psychiatrist.

Overall patients get decreased quality of life because of this anxieties and fears that go through their mind.

**Recommendations**
This patient was helped to understand the nature of her illness, her diagnosis, her prognosis, her treatment plan. The goals of care had changed to be palliative care and the patient was not going to be cured because the treatment had been tried and failed.
To bring the expectations to reality, the first strategy was to have effective communication of the diagnosis and prognosis. Educate the patient, let the patient understand what they're suffering from, what treatment options are there, what the prognosis is, and try to reassure them. Without telling the patient that she was going to die soon, she was informed that her illness was at a bad stage, and that she was getting into end-of-life phase, thus she needed to have realistic expectations.

The patient is then given follow up treatment plan and necessary psychological support. This patient was initiated opioid analgesic to manage her pain. She was linked up to a counselor so that she could be able to explore her fears and to be able to effectively communicate with her child that she was going to die soon.

Spikes model is used when communicating with patients, to be able to communicate effectively.

First is to organize for a meeting in a quiet place in a room with minimal interruptions and at a time that is suitable for both you and the patient. The counselor is dealing with anxiety and fear, hence should be relaxed and not to rush through the information.

Second, look at the perception. What does the patient understand about their illness? What have they been told so far? An invitation is where the counselor asks the patient the unknown and try to gauge their level of understanding of their illness and prognosis.

Next is to share the knowledge with them. Share the scientific knowledge about the illness, without using medical jargon. The explanation is made simple in a way that the patient can understand.

The counselor should empathize with the patients, by putting him/herself in the shoes of the patient. Thus, he will acknowledge the reaction of the patient. If a patient gets angry, if they break down into tears, their emotions are acknowledged, and the patient is given time to deal with the emotion before the end of the meeting.

Last step is to sum up the meeting, by finding out what the patient understood about the discussion, do they have any questions, do they have any clarifications. Then they are given recommendation.

Since chemo and radiotherapy were not working for this case, the focus was on comfort care, which means managing her symptoms as they come, and managing her pain. The patient was kept as comfortable as possible, around her family and to address any fears that the family might also have. A family conference was organized for her sister and her mother because she identified them as the important people in her life. The situation was explained to the family.

Finally, the patient was asked to repeat what they had learnt.

**4. Dr Sayed Karar Ali**  
**Vice-Chair, Department of Medicine**  
**Aga Khan University, Nairobi, Kenya**  
**Topic: Consent and Disclosure – how much is too much?**

Informed consent is at the heart of shared decision making or recommended approach to medical treatment decision in which patients actively participate with their doctors. Patients must have adequate information if they are to play a significant role in making decisions that reflect their own values and preferences. Physicians play a key role as educators in this
Informed consent is based on the principle of autonomy whereby the patient if well educated, and is able to make a decision based on their preferences.

The legal doctrine of informed consent can be traced back to the post world war two Nuremberg Code, where a set of guidelines was drafted to ensure that unethical medical experiments were no longer carried out in the name of science. The doctrine is founded on a general principle that a person of the age of majority and sound mind has the legal right to determine what may be done to his or her body.

What does one disclose and what are the patient’s choices about a medical treatment or procedure, made after a physician or healthcare provider discloses?

A provider in the medical community should give a patient information regarding the risks involved in the proposed treatment or procedure. This is according to Black’s Law Dictionary, ninth edition 2009.

A landmark case that defined informed consent was the Canterbury versus Spence case in the 1960s, where a gentleman presented to the hospital with back pain and was seen by a neurosurgeon. The neurosurgeon decided to take him for a laminectomy but did not disclose the risks of the procedure. The procedure went well, but when the patient came back in his bed, he fell off the bed and became paralyzed post the waist. He sued the neurosurgeon for lack of informed consent, and from this case came critical things that we should look at:

1. The condition being treated.
2. The nature and character of the proposed treatment or surgical procedure
3. Anticipated results,
4. Recognize possible alternative forms of treatment
5. Recognize serious possible race complications and anticipated benefits involved in the treatment of surgical procedure.

In a nutshell, what should be disclosed to the patient is the nature of the proposed procedure of treatment, what procedure treatment will be performed in the patient, the purpose of the procedure, the medical necessity of the procedure, potential risks and complications, the likelihood of success impacts on the surgery or the procedure, availability of safe and effective alternatives and a right to the second opinion.

There are two exceptions to this:
When a patient is unconscious or otherwise incapable of consenting and the benefit of treating the patient outweighs any potential harm of the treatment. Under these circumstances, the physician is not required to obtain informed consent before treating but must do so as soon as it is possible when the patient is medically able to do so.

And the second exemption applies when disclosing medical information would pose a threat to a patient. For example, disclosing an HIV diagnosis knowing that the patient will possibly commit suicide.

**Take home message**
The requirement for informed consents is relatively vague and undefined, and the exemptions are few.
It is in the physician’s best interest to inform patients thoroughly about proposed treatment. Doing so will help provide quality patient care and avoid exposure to legal actions.

It is imperative to document the conversation because if it’s not documented, it did not happen. If possible, consent should be sought in the native language to take care of language barriers.

**SURVIVORSHIP**

1. **Ms. Benda Kithaka**  
Health Advocate, Kilele Health  
*Topic: Addressing Quality of Life in Cancer Survivorship as a Bridge to Improve Health Literacy in Africa*

Benda has worked in advocacy for the last 9 years. She works in cervical cancer space and is also a survivor.

There is a need to improve the quality of the life of cancer survivors after undergoing treatment.

Beginning from January this year (2020) an initiative to recruit survivors to work with was taken. In that journey, four parameters that measure the quality of life were highlighted. These include the:

- Physical well-being of a patient
- Psychological or mental well-being of a patient
- Social community or spiritual well-being of a patient
- Financial well-being of a patient

After treatment, management of the patients could potentially improve their quality of life and increase the likelihood of the patients to engage in advocacy for cancer prevention. It is important to consider the physical and the spiritual well-being and a community sense where we were working towards a common goal.

Including old females for advocacy would bring inclusive and equitable experiences to drive positive change in the community towards adoption of survivorship. We looked at cancer as yet another challenge to be overcome not as a dead sentence. Benda together with experts in the field including the likes of international cancer institute inuka which is an online mentoring and mental coaching platform actress Safaris who are also our partners in the Mount Kenya region came up with a physical experience that would be to climb Mount Kenya.

The participants were required to participate in 9 months of preparation before climbing the mountain for physical wellness. They focused on various activities including going to the gym. Some participants had never been to a gym so didn’t even know how to dress for the gym or how to behave in a gym, but they were taken through various elements of physical fitness sessions. The team also embraced fitness as a lifestyle with regular hikes up various hills in Kenya.

Various hills were selected because of their hardship and difficulty in climbing so that we could measure progress of the physical well-being as we went along between the periods of April all the way to August. During the covid-19 period, they were still climbing and mentoring the participants. The survivors undertook advocacy training so that they could gain skills in Storytelling for impact skills in advocating. They were taught how to craft their stories to make them more relevant towards advocacy.
The team recognized that covid-19 would not let them travel hence they started a 2.5-hour online platform across Sub-Saharan Africa to participate in a health symposium that was addressing challenges of cancer survivorship in Africa. There were 12 presenters drawn from the international community, with an oversubscription of 350 people from Sahara Africa. The participants were survivors, caregivers, clinicians and even policymakers. One of the success measures was that 195 participants logged in and 145 stayed on for the full period of the symposium. The team had 5 days of intense working, hiking, and participating hard to overcome such issues as mental exhaustion, physical fatigue. 5 survivors reached the peak of the summit of Mount Kenya at Point Lenana, and all participants were able to improve on their quality of life and were feeling more in control, less anxious and more equipped to deal with life. They were also motivated to inspire others towards taking an active role in prevention of cancer. The financial wellness pillar was not measured because regrettably resources were not enough.

Achievements In Media and Advocacy

Equipping survivors with better quality of life so that they feel more in control and become agents of change in their community. This can significantly improve the four parameters to help in cancer control programs. We've seen the survivors more actively engaged in community education for cancer.

2. Tayreez Muchani, Tayreez Mushani RN, MHS
Palliative Pain and Symptom Management Consultant
South East Local Integrated Health Network from the city of Kingston, Ontario.

Topic: Palliative Sedation, What It Is and What It Is Not

Tayreez Muchani thanked the organizers for asking her to present. She thanked the technical team and the organising committee for all the work that they've done to make the symposium possible. She was making her presentation from Kingston Ontario airport, and observed that it was winter, thus the leaves have changed Colour and would be shed off soon.

Palliative sedation (controlled sedation) is the intentional induction of sedation to relieve intractable symptoms when all other symptom control measures have failed, and death is imminent. It's also defined as monitored use of medication intended to induce a state of decreased or absent awareness unconsciousness in order to relieve the burden of otherwise intractable suffering in a manner that is ethically acceptable to the patient, family and health care providers.

Indications For Palliative Sedation

- It's an ethical way to relieve suffering
- It improves the quality of life
- Relieve intractable symptoms
- Intractable symptoms occur when all symptom control measures have failed.

The common ones involve agitated dyspnoea, refractory seizures. Intractable pain is uncommon.

The goal of palliative sedation is to bring comfort at the lowest dose and the lightest level of sedation possible.

Palliative Sedation Criteria

From the Canadian Society, palliative care physicians before palliative sedation are given the opportunity to withdraw from the patient's case and another staff member can be brought.
The selection of medication must be based on what's available in your region and standard practice. Therefore, when doing light sedation, the person is mostly awake and dozing in and out with intermediate solicitation. The patient can be awakened with stimuli. A deeply sedated patient does not awaken. The situation really depends on the symptom severity and a response to sedation.

The goal is to keep the patient comfortable. When there is distress and when the patients are dying, try to pay attention to the patient. Sedation will take away the patient's ability to tell you what to pay attention to, so that they do not die in pain. Opiates for sedation should be used with caution. If we start using them for sedation, we’re going to end up with toxicity which is going to be extremely stressful for the patient and family and very difficult to control the coordination and level of discomfort.

3. Pamela Were  
Community Chief Outreach Coordinator at International Cancer Institute (ICI)  
Topic: Challenges and survivorship strategies post cancer treatment; experiences from international cancer institute

International Cancer Institute is a not-for-profit organization, based in Western Kenya region specifically Uasin Gishu county.

Pamela shared the experiences from International Cancer Institute. She observed that the new advances of cancer management in the low- and middle-income countries have led to the improvement in survival rates. Globally about 18 million people have survived cancer treatment, and the number is projected to reach 30 million people by 2022.

The process of cancer diagnosis and treatment is expensive and affect families whose breadwinner has cancer. Survivors face many challenges that, if well documented, and solution suggested, can be helpful in their integration into society.

International Cancer Institute has supported the formation of breast, cervical and other cancer support groups.

Patients are drawn from 10 counties partnering with ICI, including Kakamega, Bungoma, Migori, Kisumu, Vihiga, Nandi, Meru, Makueni and Homa Bay.

The partnership is expected to help reduce the cost and to provide basic oncological services in some of the hard-to-reach areas.

Objective

To highlight the challenges faced by cancer survivors during their integration back into the society post active treatment.

Specific objective

To investigate the challenges faced by cancer survivors during their integration back into the community post active treatment and to identify survivorship strategies that can help survivors adapt and integrate back into the society.

Content analysis and thematic coding were used to analyse the collected data.
Results

The challenges faced were summarized into the following things.

Psychologically there's there is depression, low self-esteem, post treatment, and feeling of helplessness.

Socially many cancer survivors are faced divorce, some are not sexually appealing after treatment due to the post treatment challenges or effects.

Physically, others have reduced physical strength and cannot work as previously used to. Some are affected by side effects of treatment.

Financially, some patients are constrained, with some selling their property to cater for treatment. Some patients have no source of steady income.

This is a quote from one of the survivors.

“I am feeling very idle. I sold the only cow I had to treat my wife. This cow could give me milk that I would sell to the neighbours. Then in the afternoon, I would go to look after the cow, now I have no cow and I have no meal. I have no money because of this cancer.

Suggested strategies.

Provision of socio-economic support during treatment, counselling and financial support. Also, skills development as an empowerment tool for reintegration back to their society, including training or knitting, or recycling, tailoring, cookery and cake baking.

Provision of financial support to start up some income generating activities would be very helpful to these cancer survivors. One of the survivors said “I am a tailor by profession, but I sold my single machine to cater for cancer treatment. As the sole breadwinner, if I can be helped to acquire another sewing machine, I will be able to provide for my children who have been reduced to beggars.

The support group allows members to give their views, their challenges and try to come up with some aligned strategies of which can be incorporated in their support so that they can be able to reintegrate back.

Conclusion

Cancer survivors face a lot of challenges because active cancer treatment can strip off their identity due to the complications associated with cancer and stigma. Especially when somebody is going through breast cancer treatment where mastectomy is done, there is that body image disturbance whereby one has one breast. Young adults, who get osteogenic sarcoma after amputation, have a lot of stigma and body image disturbance. This demonstrates the need for integration measures for cancer survivors.

TRACK 5

NURSING CARE IN ONCOLOGY

1. Mustapha Aliyu, Nigeria, RN, BNSc, Dipl. (Oncology Nursing), MIL Cert.
Federal Teaching Hospital, Gombe, Nigeria
Topic: Intracavitary Brachytherapy for Gynaecological Malignancies: The Nursing Perspective
Gynaecological malignancies are one of the most common cancers of women, contributing to significant mortality. In many developing countries, they are diagnosed at late stages, hence radiotherapy is a common treatment modality.

Brachytherapy is an important tool for both definitive and adjuvant treatment of cervical and endometrial concerns.

The word brachytherapy is derived from a Greek word “brachy” meaning “short distance”. The term brachytherapy was coined by a Swedish Professor of Radiology and radiotherapy Abrahamson Forsell in 1931. It is an optimal tool for delivering a very high dose of radiation to the tumour focally, while minimizing the probability of normal tissue complications. It is also called internal radiotherapy, curietherapy or endo curietherapy.

Types of brachytherapy

They are characterized according to

- Method of source loading which can be preloading, after loading
- Source placement (interstitial, intracavitary, intraluminal, intravascular, surface)
- Treatment duration (temporary or permanent).
- Dose rate given (low dose rate, medium dose rate, high dose rate and post dose rate).

Clinical applications of medical brachytherapy

Based on high-level evidence from randomized controlled trials? Gynaecological brachytherapy is mainly indicated in the following things.

As standard in combination with chemo-radiation in patients with locally advanced cervical cancers.

Uterine endometrial cancer for decreasing risk of vaginal vault recurrence.

It is fundamental in the treatment of both primary and recurrent vaginal cancers.

Basic components of gynaecological brachytherapy

Both 2D and 3D planning system are required.

Different types of applicators such as the vaginal applicator, cervical applicator, endometrial applicators. You need imaging devices such as CM, in case of 3D you may need a CT simulator and a brachytherapy machine. Mustapha explained that in their facility, they have a high dose rate, Iridium 192 remote after loading.

The teams involved in gynaecological brachytherapy include, radiation oncologists, oncology nurses, medical physicist, anaesthetists, radiographers, biomedical engineers, as well as supportive staff such as security personnel.

Although Mustapha uses a high dose rate brachytherapy machine, low dose rate machine is also used in gynaecological brachytherapy. However, the nursing demands for patients undergoing either low dose rate Brachytherapy and or high dose rate brachytherapy are different now.

The low dose rate brachytherapy has higher demands because the patient will be confined to bed for almost three days and all the nursing care must be attended to by the nurse. If there is any need for any intervention, the medical officer's attention must be called upon to come
and interrupt the treatment so that nursing care can be given. On the other hand, high dose rate brachytherapy is a day procedure and doesn't take much time, (10 to 15 minutes) and the treatment is over.

**Pre-treatment assessment**

All patients should have a thorough nursing assessment undertaken to assess their suitability for the treatment.

Nurses use scientific and evidence-based tools to assess patients for suitability and this could be physical examination to assess if there is any side effect from previous radiotherapy or history-taking as well as a psychological preparation, removing fear and anxiety. The pre-treatment investigation group includes pelvic imaging.

Patients are counselled and provided with information on the benefits of the treatment, the prognosis after treatment and the possible side effects as well as complications. They are educated on the steps involved in the treatment, including catheterization, and the need for the patient to remain still so as to prevent the dislodgement of applicators.

Informed consent is generally obtained by the radiation oncologists. The nurses ensure that the information is well passed across. Nurses clarify any grey areas before the patient signs the consent.

**Nursing intervention during treatment**

The oncology nurse serves as a perioperative nurse and therefore carries out all the necessary nursing care throughout the treatment.

Patients are asked to change into a clean gown. The nurse checks the vital signs e.g., blood pressure and the patient positioning on a table.

Depending on the level of cooperation of the patient, they may be given conscious sedation or general anaesthesia. Cleaning, draping, and catheterization are carried out.

Applicators are inserted under ultrasound-guided, and packing is done anteriorly and posteriorly to push the bladder and the rectum respectively. Images are acquired using any available imaging device.

Treatment planning and delivery are carried out by the medical physicists, but the nurses stay with the patients to provide support and care.

Patients are monitored during treatment on CCTV and audio communication systems are available if there is a need to communicate with the patients.

**Post-treatment care**

 Once treatment is completed, the nurse removes the applicator and the packing, clean the patient and do vaginal packing and douching if required.

There are two schools of thoughts here:

1. Some are of the opinion that the patient should start douching right during the treatment and continue after the treatment. This is to prevent infection.
2. Some recommend that it shouldn't be carried out, as it may facilitate the transfer of cancer cells to other parts of the cervix or vagina.
Management of side effects

The nurse should observe the patient for immediate side effects as a result of sedatives use or general anaesthesia, such as vomiting and dizziness, dysuria, diarrhoea fatigue.

Complications

One should emphasize the importance of vaginal dilatation to prevent vaginal stenosis. The effects of radiation on the vaginal mucosa include vaginal mucositis, fibrosis, loss of elasticity as well as decreased lubrication. The nurse needs to inform the patient about this, and encourage the patient to resume sexual intercourse two weeks after treatment.

Patients without partners are encouraged to use dildo, 5 to 10 minutes and 3 to 4 insertions in a day.

Care of the applicator is very important, because any damaged applicator can prevent further treatment. The nurses ensure that the applicants are clean and stored in a dry, cold place.

Sterilization could be carried out on those parts of the applicators that can be sterilized. While those that cannot be autoclaved can be disinfected using a very good disinfectant. Patients are advised on discharge to report any side effects., such as bleeding, discomfort, and episodes of diarrhoea.

Management of side effects include the following.

Pain and vomiting are normally immediate side effects and can be taken care of by pain control. Proctitis, dysuria and diarrheal are also side effects of chemo-radiation on the bladder and the rectum as well as the intestines and therefore necessary care should be given.

The nurse encourages fluid intake, potassium citrate is also administered. Patients with diarrhoea are encouraged to take fluids and avoid spiced foods, they should be hydrated and avoid high fibre diets. Complications include vaginal stenosis, vaginal fistula, rectovaginal fistula bowel and bladder strictures.

Conclusion

Brachytherapy is one of the cornerstones of treatment for gynaecological malignancies. Nurses play a critical role in ensuring patients receive quality and evidence-based care including management of side effects during therapy.

2. Ms. Roselyne Anyago Okumu
Oncology Nurse, Chair of the Oncology Nurses Chapter
AND
Faith Fidelma
Radiation therapy therapist (RTT) BSC radiography (therapy) - JKUAT
Kenyatta National Hospital
Topic: Radiotherapy treatment process and care of childhood medulloblastoma at the Kenyatta National Hospital

Medulloblastoma is a highly aggressive malignant tumour of the cerebellum. It's the most common brain tumour in children, accounting for 20% of all central nervous system tumours in children. Conventional treatment involves a combination of maximal resection surgery, craniospinal irradiation and cytotoxic chemotherapy. They presented a case of a child that had been sick since February 2020, complaining of vomiting, headache, staggering gait, squint eyes for three months. Investigations were done, where craniotomy and tumour excision were
done, and VP shunting was put. Nursing care post-surgery was provided, and the child recovered well. Histology reports revealed a classical medulloblastoma, WHO grade IV. The patient recovered 30 days later, and after a review, she was scheduled for a 2D radiotherapy alongside vincristine weekly. The radiotherapy focused on the craniospinal area, and the child was under sedation during the procedure. The child developed side effects of treatment including mucositis, vomiting and poor feeding. Radiotherapy was withdrawn for a week, and the child was put on antifungal, antibiotics and mouthwash. She recovered and radiotherapy was continued.

Cranial spinal radiation is a technique used in radiation therapy to deliver a prescribed amount of radiation to the entire cranial spinal axis, to achieve curative measures, in the treatment of intracranial tumours. Cranial spinal irradiation treats anywhere the cranial spinal fluid flows. Treatment fields typically include the brain to the thecal sac. There are several indications for cranial spinal irradiation, and one is medulloblastoma, pineoblastoma, intracranial germ cell, tumour (germinoma), leukaemia/lymphoma with CNS axis met, supratentorial PNET.

The treatment for this child started with planning radiotherapy depending on the history and previous images of the CT and MRI scans. The aim was to maximize tumour control with minimized normal tissue toxicity especially to the serial organs like the spinal cord and taking care of the parallel organs, part of the brain, parotid glands and other organs at risk. We

Proper immobilization for dose homogeneity in the planning target volume and reduce the dose to organs at risk. They evaluated the integral dose received by normal tissues, and reduced the planning time and waiting time for the child to start their radiotherapy course, since it was a priority case.

**Challenges Experienced:**

**Positioning and demobilization of the child,** the child required anaesthesia to immobilize and protect critical structures.

Problems matching junctions between the divergent brain and spinal cord fields.

The advantage of the prone position is direct visualization of the field’s junction and good alignment of the spine. The disadvantage with prone position is that it is uncomfortable, technically difficult to reproduce in difficult anaesthetic movements.

The simulation had two phases for the treatment.

1. **The first phase was cranial spinal radiotherapy.** That is the two parallel opposite lateral cranial fields orthogonally matched with the posterior spinal field to cover the entire length of the spinal cord.
2. **Phase Two was the posterior boosts of the fossa,** the whole posterior fossa irradiation all confirm or boost the tumour.

**Simulation**

The first simulation was the spine of fields to know its divergence. Two posterior spinal fields were used because the length of the spine was larger than 36 centimetres.

The superior border of the posterior spinal field was between the C2 and C3. The inferior border went through to the bottom to cover the terminal of the spinal cord, the thecal sac.

The width was 7cm, in order to cover the intervertebral for its foramina, and the interface of the peripheral nerves and the spinal cord.
The cranium

Lateral cranium of the opposing fields’ lateral fields was done. Anterior- posterior field width covers the whole cranium with a 1cm clearance.

The superior beam will leave a clearance as well.

Inferior beam edge match with a superior beam edge of the spine of field at C2/C3.

Shielding

Shielding of organs at risk in the cranium and the spinal fields was done. The organs include the pituitary gland, the eyes/lens, the cochlea/inner ear, parotid/oral cavity, thyroid, larynx. Along the spine, the organs at risk include the heart, lungs, oesophagus, kidney, gonads, breasts and pelvis marrow.

The cribriform plate and temporal regions should not be shielded, since bar orange shield 15%-20% of recurrence medulloblastoma occur in this region due to overzealous shielding, because of its proximity to ocular structure. The recommended placement of blocks is 0.5 centimetres below the orbital roof. One centimetre below and one centimetre anteriorly to the lower part of the temporal fossa.

Radiotherapy Treatment Delivery

The child was scheduled for radiotherapy treatment, starting at 8am, due to fasting sessions, because of anaesthetic use. The treatment was scheduled at 8am each day for 31 days to avoid long fasting hours for the child.

For the cranium a total of 55.8Gys for 31 days and 1.8 Gys daily.

For the spine, the child received 27Gys for a total of 15 fractions and a daily fraction of 1.8 Gys. The whole cranium was treated with 36Gys and the child developed mucositis and other radiation effects. She was reviewed and prescribed rest from radiation for one week with management drugs.

Moving Junction

During treatment, there were craniospinal junction movements. The spinal Posterior fields shifted by 0.5cm inferiorly or superiorly. Feathering was done in alternate days for homogeneity. The lateral fields of the cranium remained static.

The spinal-spinal junction fixed the gap and moved simultaneously and maintained the calculated fixed gap dose.

A posterior fossa boost was done after 36 Gys. To achieve this, they coined down the beam of the cranium maintaining the inferior border at C2/C2 interface.

Previous MRI images showing the tumour were reviewed. For the field arrangement, two lateral opposing fields were used.

Medulloblastoma is a radiosensitive tumour, cured up to 70% by radiotherapy that is curative in up to 70% of every high-risk patient.

Other techniques to treat medulloblastoma include 3D-CRT, IMRT, VMAT, TOMOTHERAPY, PROTON THERAPY.
The nursing role in the management of the child was enormous and the nursing team applied the nursing process to assess the patient at every step to make a nursing diagnosis that informed the nursing plan. Nurses were intervening, implementing, and evaluating the care done. Interdisciplinary nursing care was applied because the patient was being seen by the surgery nursing team initially, then handed over to the paediatric nursing team. During radiotherapy, the child was interacting with the oncology nursing team and radiotherapy nursing team as well.

Care plans were developed for the continuous flow of care within the various interdisciplinary teams. Pain management was being handled by the nurses and the palliative care team. The side effects identified were managed. Supportive care was offered to the family, and the mother was engaged, and her concerns addressed throughout the entire process.

There was coordination of care in the nursing team because they required the anaesthetist to come during the sedation session, the oncologist to review, and the therapy team, as well. This made the patient’s journey easier through the navigation process. Nurses documented every activity for ease of follow-up.

**Conclusion**

Multidisciplinary management is very important for a good outcome for patients. And as the patient was discharged through the radiotherapy, they went back to the ward and were discharged home.

On discharge, follow-up, physical, and emotional support to the entire family were emphasized.

Nursing assessment and the health care assessment are very important in the management of children because sometimes they may not speak it but from their behaviour, you can pick it quickly and tackle the case before it worsens. Because if it is not assessed, it will not be measured and if it is not, it will not be treated. The treatment process was easy for the patient and the entire team due to constant communication that helped to build trust between the parents, the child, and the healthcare team.

**Recommendation**

Roselyn emphasized the need to invest in distraction therapy, for example, the use of video and games sedating the child, if they can settle down.

**3. Dr. Primus Ochieng**  
**Lecturer and Consultant Clinical Oncologist at Kenyatta National Hospital.**  
*Topic: Management of Radiation Toxicity in Head and Neck Cancers*

Head and neck cancers are those cancers that occur in the tonsils, the mouth, the nose, throat, the larynx. They do not include the skin and the brain itself. H and N cancers account for about 9% of all cancers in Kenya. The treatment of these cancers involves the use of radiation chemotherapy, and surgery. Definitive radiotherapy can be used alone, or it can be used after surgery and adjuvant setting or in the palliative setting. Because of the complex anatomy of the head and neck region, there are several critical structures that are normal but are quite close to the area of radiation and so they end up receiving significant radiation during treatment. Most of the treatment doses used are quite high, and critical structures e.g., left parotid which is very close to the structures only can receive 26 grades.

The process of radiation starts with the simulation. The neck and the shoulder require a rigid immobilization, and this usually involves the use of a thermoplastic cast which is usually quite
uncomfortable. It has holes which when one breathes through it's a little not very comfortable. It is used to keep the head and the neck quite firmly on the couch, to allow treatments.

Treatment of the head and neck is one of the areas in the body where radiation causes a lot of toxicity, which can be divided into

1. Acute toxicity also called early effects
2. Late toxicity, also called late effects.

The toxicities occur a few weeks after the onset of treatment, continue a couple of weeks after treatment, and then eventually they stop. Most acute toxicity occurs in the mucosa area of the membranes and the area of the skin. These toxicities are self-limiting and disappear after treatment. Their severity depends on the total dose so that an individual getting 60 grades has less toxicity than one getting 70 grades.

Examples of toxicity include skin reaction, oral mucositis, dryness of the mouth, xerostomia, and difficulty in swallowing. Since vital structures of a body are involved, including the face which is used for facial expression, and the tongue and the mouth, which are used for speech and for swallowing, many patients get depressed, once they get the toxicity. The toxicity occurs months after treatment and often tends to be persistent. This depends not on the total dose as the acute toxicity but on the dose given during treatment. For example, a patient getting 2.5 grades gets more toxicity than one getting 2 grades.

The toxicity tends to be persistent and progressive and affects the face. This can lead to changes in the facial physical appearance and could in turn cause psychological trauma, due to interference with speech and swallowing. These functions are usually very important in day to day, human life. And this can escalate to serious emotional effects.

The late side effects cause skin fibrosis, permanent dryness of the mouth, and may get strictures in the apparel, and osteoradionecrosis. The early toxicity usually is on the skin called dermatitis, and usually occurs from the second to the third week after the onset of treatment. They resolve three to four weeks, roughly a month after completion of treatment and that tends to be cumulative. Usually, they start to the milder edema, skin gets hyperpigmented, it gets dry, dry pigmentation, and then eventually they can become too serious to get moist desquamation.

There is no standard treatment for acute skin reaction due to radiation, but general skincare is recommended. The use of antibiotic cream and steroid cream is recommended when there is desquamation. In case there is severe wound formation, use analgesic if indicated. After completion of the treatment, some patients get late skin effects, including the thinning of the skin, telangiectasia, and severe skin fibrosis. Some patients get hyper or hypopigmentation in the area of radiation, especially ladies who have a lot of psychological issues because it interferes with their natural beauty.

Oral mucositis tends to occur after the third to fourth week after getting treatment and this is the most severe form of acute toxicity that occurs during treatment. It presents with very severe sores and pain in the mouth. This may lead to severe dysplasia, severe renal failure, and loss of weight. This causes treatment interruption in the head and neck. For head and neck tumours, by virtue of the way the squamous cells interact with radiation, treatments should not be interrupted, as it can end up with accelerated repopulation, which can lead to poor treatment outcomes. Usually, the mucositis starts with edema and then ulceration, where the ulcer becomes very big, gets septic and one may not be able to feed at grade four. A lot of head and neck cancers require chemo radiation at stage three and four. Combined treatment leads to early onset of mucositis, leading to severe grade of mucositis, which take longer to resolve after six weeks. Smoking should be avoided in radiation because it could
worsen mucositis. Complications of mucositis can cause severe oral infection which becomes complicated with systemic infection. The mucositis gets worse until one gets oral bleeding, a very dry mouth, and xerostomia. The patient can have problems with nutrition, can get dehydrated, thus leading to treatment interruption. There are no standard ways of treating mucositis in the acute phase, but it's recommended that oral hygiene is very important. One should avoid any chemical irritants like spicy food, alcohol, smoking, physical irritants, like dry food. It is important to have dietary changes, like avoiding extreme cold or extreme hot foods. Mild mucositis can be treated with saline or bicarbonate rinse. If it gets worse and painful, one can use mouth spray which is available in our market. Extremely painful mucositis can be treated with opiates like morphine. Prophylactic antifungal, oral antifungal, and any other antibacterial solution are recommended. As treatment continues the parotid function gets affected, roughly after the third week. This dryness of the mouth initially starts with the saliva getting very thick, leading to impairment of speech. The mouth becomes painful, chewing and swallowing become difficult and the dryness in the mouth is not relieved. Most of the time, after treatment, xerostomia tends to be persistent. This toxicity starts in the acute phase and tends to persist, never to be resolved. Long term toxicity of xerostomia could lead to very severe dental and periodontal issues because saliva is known to maintain the health of the oral cavity. It also increases the risk of necrosis and other complications which come with a very dry mouth. These have a negative impact on the quality of life that can get difficult in speech, halitosis, altered speech, and sleep disturbances.

Head and neck cancers must be treated to reduce mortality and to improve the quality of life. Treatment should aim to improve on swallowing and improve skin toxicity. Dental preparation to improve dental health before initiation of treatment is recommended. Prophylactic alternative feeding routes like the use of PEG tubes are recommended. A British trial called the parasport trial, looked at parotid sparing intensity modulated radiotherapy and conventional radiotherapy in the treatment of head and neck cancer. The aim of the study was to see if by use of this improved technology, the parotid could be spared. The findings from this study revealed that patients who had an IMRT radiotherapy treatment for head and neck had less xerostomia post treatment, less mucositis and thus improved quality of life post treatment. In Kenya, the old technique of treatment but IMRT is recommended, because it improves the quality of life during survivorship.

Oral cavity tumours are common, they occur close to the parotid, and occupy a big mucosal surface, thus mucositis during treatment becomes a big problem. Brachytherapy treatment is highly commended because it could reduce the surface, which is getting radiation and hence reducing mucositis. It also fairly spares the parotid.

4. Naomi Oyoe Ohene Oti
Oncology Nurse Specialist and Accra Cancer Registry Manager
Korle Bu Teaching Hospital
Vice President, Nursing, AORTIC. ISNCC, Regional Ambassador for Africa

Topic: Status of Oncology Nursing Education and Training in Africa

The cancer burden is quite grievous and is becoming a public health menace worldwide. We have over 18 million new cases by 2018 according to Globocan. Out of that 5.8% cases are in Africa. A total of 9.6 million cancer deaths occur in a year, and about 7.3% are from Africa. There are 40 million people living with cancer within the five years of diagnosis, out of this 48% are in Africa. Therefore, there is a very huge problem with cancer in Africa. Irrespective of the burden, Africa is facing scarcity of resources to help in cancer control. Control of this burden can only be achieved with the involvement of competent and knowledgeable oncology nurses, who remain to be a key position in engaging with patients and their communities. Health professionals are needed to address disparities in cancer care to achieve the goal in cancer control.
Nurses deliver more than 90% of the healthcare services, forming the largest group of health professionals. Research shows that a competent and skilled nurse provides quality care thus reducing patient mortality.

Africa is faced with a growing cancer burden and few cancer nurses.

**Who Is an Oncology Nurse?**

The US Oncology Nursing Society defines oncology nursing as a specialty that looks at reduction risks, incidence, and burden of disease. By the encouragement of a healthy lifestyle, also promotion of early detection and improvement of cancer symptoms and side effects throughout the cancer disease registry.

The European Oncology Nursing Society defines oncology nursing as a registered nurse who has the mandate and the full responsibility to provide crucial nursing care to people affected by cancer based on his/her evidence-based, specialized ethical, and personal knowledge and skills.

**The Role of The Oncology Nurse**

The oncology nurse is crucial, right from prevention to the end-of-life care and survivorship. They include:

- Creating awareness of the cancer risks factors
- Planning and implementation of early detection programs,
- Patient, family, community education and counselling,
- Genetic counselling, all embodied in care provision, education, advocates, manager, collaboration, leadership, and research.
- Assessment of nursing diagnosis will guide the care
- Oncology nurses coordinate care given by various team members.
- Implementation of direct patient care
- Palliative care
- Pain assessment and management

**The oncology nurse practitioner/specialist**

- Is usually a postgraduate prepared person (masters or doctoral level) in oncology nursing
- They prescribe and formulate symptom management strategies
- Manage side effects of this treatment
- Organize refers to other health care providers.
- They also lead and collaborate on oncology nursing research to provide evidence-based practice Participate in policy decision-making regarding cancer care.

**The Emergence of Oncology Nursing in High-Income Countries**

This came about in the 1940s in the US. It gained momentum after President Nixon passed the National Cancer Act in 1971.

Surgery was the mainstay of treatment, until the 1940s, if the disease was diagnosed early and in localized stages.
Oncology nursing consisted mostly of bedside care and comfort measures directed to those with advanced stages of the disease and treatment-related complications.

Radiotherapy also emerged in the 1900s and it was mainly for palliative and sometimes curative potential.

Nurses were routinely involved in the care of patients with radiation sickness and in pain from X-ray burns. In some instances, they were delivering the radiotherapy itself, or later they were asked to become part of the source of information about prevention and recognition and cure of cancer diseases.

In the 1940s and 1950s, new drug development programs like drug advancement, new chemotherapy became common. Venepuncture became a nursing procedure, drugs were administered by nurses, who also managed side effects, though through the trial-and-error process.

In the 1970s, Specialists nursing courses were focused on understanding cancer and its treatment. With advances in oncology, the patient's needs became complex, hence there was a need for nursing educators to recognize gaps in the available curricula.

In 1948, the nursing session of the NCI developed some courses to enhance the nursing knowledge in cancer care. This was spearheaded by Dr. Catharine Nelson and Ms Ann Ferris who developed a postgraduate program, and this was a big breakthrough for nursing in cancer.

**Evolution Of Oncology Nursing in Africa**

In the 19th and early 20th century, surgery became the main treatment for cancers. Chemotherapy was added and was being reconstituted and administered by physicians. There were few drugs available. Patients who failed treatment were left to their fate. There were no oncologists or radiotherapy in some countries.

Patients presented in late stages of the disease. Nurse role was limited to caring for inpatients and terminally ill patients.

Nursing visibility increased in the 70s and 80s when they joined administration of chemotherapy. Nurses trained in the UK and North America started the trainer of trainee’s initiative (TOT), to administer chemotherapy, manage side effects and educate patients and families on disease processes.

In 1980, nurses from Egypt and South Africa held their first meeting in cancer care.

In 1990, Egypt and South Africa started formal training of oncology nurses from other African countries.

**Current Status of Oncology Nursing in Africa**

Over the years, other African countries have made strides in oncology nursing and education training. However, due to shortage of specialized nurses and training institutions, some patients receive care from general nurses.

**Mode of Education, Admission, Program**

Nurses are required to receive education and training for advanced knowledge and skills in the principles and practice on oncology nursing, combined with internship for a certain period
of time. They received certification and license to practice in a specific country. Formal education was done by universities and post graduate colleges.

Practical were done at various hospitals with cancer care. Although training varies between countries, there is a requirement for specialized oncology focused training after basic nursing training. Postgraduate oncology nursing graduates may become advanced practice nurses or educators.

**Challenges**

- Lack of nursing leadership representation to influence policy.
- Lack of funding for oncology nursing training program
- Dominance of medical profession
- Creation of professional silos
- Poor wages and lack of exposure to professional development and shared global learning.
- Lack of recognition of oncology nursing as a specialty.
- Lack of training facilities
- Shortage of nursing trainers.
- Paucity of research to support the role and practice of oncology nursing in cancer care.
- Limited opportunities for nurses to train and engage in health services and clinical trials.
- Health institutions do not recognize nurses in leadership and planning positions.
- Historically nurses have a low social status in the society because of the ways that it started.
- It is not lucrative to increase knowledge because the wages are low.
- There's lack of exposure to professional development.
- Lack of shared global learning
- Weak traditions of interprofessional education.
- Existing training lacks harmonization of curriculum in content and in delivery.

Since a nurse who is well skilled and knowledgeable can provide optimum care, which will also lead to better patient outcomes. There is a need for stakeholders to come together to push oncology nursing education training forward.

**Recommendations**

- The government should fund oncology nursing training, as they do for other health professionals, and provide adequate remuneration to nurses with oncology specialty.
- There's a need for integral components of oncology, health force capacity development in all national cancer control plans.
- There should be the provision of inclusion of oncology nurses and cancer control expertise positions in order to influence development of policy.
- To improve cancer care, there is a need to increase the training of oncology nurses to ensure safe and high-quality holistic care and evidence-based practices.
- The need to advocate for policy formation and the sense of nurses' role in cancer treatment.
- We need to develop faculties to help train a specialist on cogenesis at the highest level.
There is a need to also establish partnerships between high income countries and among us Africans, especially those who have existing programs to help create a sustainable educational program.

In this COVID era, technology has proven to be able to make up for shortage of nursing faculty.

Need to develop regional and national oncology nursing associations to be the voice for oncology nursing.

Need to develop regional standards of practice across oncology nursing specialty to unify implementation and promote safe practice.

Aortic competency is to develop regional priorities for oncology nursing research in Africa to inform policy, strengthen the nursing knowledge base, advance culturally appropriate evidence-based practice.

Education is the most powerful weapon you can use to change the world. Thus, oncology nursing education is the most powerful weapon we can use to change the world of oncology to have a better patient outcome.

5. Dr. Fatuma Aden AFFEY, PHD, MSCN
Dean, School of Nursing & Midwifery, Umma University
Topic: ‘Xannun’ nursing care model for cancer pain management among adult patients at Garissa County Referral Hospital (GCRH), Kenya
Dr. Fatma Faye presented a model known as “Xannun” nursing care model for cancer pain management among adult patients at Garissa County referral hospital. This was the second part of her thesis, where the first part had already been published.

Why do we need the model?
Cancer pain is complex, subjective and is associated with a decline in human physical health, functional, emotional and quality of life. Despite an effectiveness of 70 to 90% on pain control, and an increase of global prevention of cancer pain, the cancer pain remains high. A systematic review of 10 years between 2005 to 2014, and that was published in 2016, reported that 64% of patients with advanced cancer have pain, with a preference of 64%, and 59% on those already on anti-cancer treatment. Moderate to severe pain has already been reported by patients with a numerical rating scale of more than five. Globally, the preference of cancer pain is 8%.

A study done in a referral hospital in Kenya on cancer patient and patients with HIV reported pain preference of 66% due to under treatment. A study done in 2013 reported negative score on pain management index. Another study carried out in a national hospital outpatient oncology clinic, revealed pain preference of 8.5%. Our published study revealed the preference of cancer pain was 78% with intensity ranging from moderate to severe. This high prevalence of pain necessitated the need for a model or a strategy to overcome pain.

Nursing care model has considerably enhanced patient outcome in the aspect of pain control, anxiety reduction, reduced hospital readmission and patient suffering. Nursing models are tailored for different settings and are part of care for oncology patients.

There are increasing cases of cancer at Garissa County referral hospital. There is no model to care for this pain in this hospital, hence the need to develop a model that is tailored for pastoral community that considers the WHO guidelines for treatment of pain by nurses. The nurses will implement the model and appreciate the cultural perspective of the community.

Study objectives
1. To develop appropriate Xannun (Xannun means pain in the Somali language, thus the model was named so because it was dealing with pain), nursing care model for cancer pain management of adult patients seeking for health services at Garissa referral hospital.

2. To test the applicability of the model within the health care centers.

The model was developed in two phase studies. Phase one used triangulation method approach that is mixed method, using a modified brief pain inventory. We modified it for the setting, and we also used a focus group discussion in office one which has already been published in various journals.

Phase two is the actual development of the model and testing of xannun nursing care model using Delphi method. Various sampling procedures, random sampling, purposive snowball was used to recruit the participants voluntarily.

Ethical approval was sought from NACOSTI through Mount Kenya University.

The study population was the patient with cancer who was inpatient and outpatient and those on follow up. Also included in the study were the key informant comprising of health workers and people who manage pain care treatment, the pharmacists, the doctors, the nurses, and the clinical officers.

Phase one mainly involved making study initiatives, by finding out the problem. Phase two involved making a diagnosis, by identifying the exact problem in summary, and finding a possible solution to this problem. Next, we subjected these solutions to the implementation phase by getting more input from people, and then we evaluated the model using questionnaires which were administered to nurses and consultant expert and nurse managers from various universities.

The questions included:

1. Has the model captured the challenges of consumption?
   80% agreed that it captured the challenges of cancer pain.
2. Will this model bring any change to the care of cancer pain?
   100% felt that it will bring enough change for the patients who are suffering from cancer pain.
3. Can the model be implemented at Garissa County referral hospital?
   100% felt it can
4. Will the model face any potential challenges in implementation?
   90% felt that the model will face challenges.

Study findings

Pain care can be implemented by nurses.

There is a need for cancer care centers to perform early screening, train nurses to become prescribers because nurses are the majority in health care services, and they are the ones who are with the patient throughout.

There is need to overcome this high prevalence of pain.
There’s a cultural sensitivity, also of pain management, which nurses need to understand in terms of the attitude.

Funds are required to implement the model, so that it can improve the pain care for the larger population.

Limitations

1. Limited knowledge of nurses on cancer pain management.
2. Negative attitude among the nurses in the care of this patient with pain,
4. The nomadic pastoral lifestyle is also a challenge in accessibility of palliative care
5. Lack of knowledge on cancer by patient because the patient would not even openly tell us they have cancer during our focus group discussion.
6. Inconsistent supply of pain medication
7. Socio cultural dynamic and alternative way of managing pain.

Solution

1. Train palliative care trained nurses on cultural perspective in terms of the cultural pain dynamics
2. Establish mobile clinics and lobby for nursing prescribers because currently nurses are not legally allowed to prescribe medication like morphine.
3. Setting up cancer wards and cancer centers at Garissa County referral hospital for early screening
4. Initiating multidisciplinary palliative care centers.
5. Creating awareness by providing civil education to the community, improving and upgrading cancer pain management facility and improving supply and availability.

Why do we control pain?
1. To improve the quality of life.
2. To improve the rate of survivors
3. To be able to use a model that’s acceptable and accessible to all centers within that area.
4. To improve knowledge on cancer pain.

The current study used the input process system and output system model.

Conclusion
There is a high prevalence of cancer pain, which is 78% with intensity ranging from moderate to severe pain.

Majority of nurses demonstrated deficit knowledge on cancer pain management in line with WHO recommendation.

The socio-cultural perspective of the use of herbs and the Quran for healing which is grounded in the Islamic faith came up very strongly.

The new nursing care model provides positive impact on cancer pain management. However, it faces some potential challenges, including language barrier, inadequate training,
inhibitive community cultural practices, limited resources, inadequate knowledge and inadequate staffing.

The study therefore emphasizes the need of using the model in such centers.

6. Dr. Lister Onsongo
Lecturer, Kenyatta University School of Nursing

*Topic: Facilitators to Cancer Pain Management Among Nurses in Kenya - A Focused Ethnography*

Dr. Lister Onsongo explained that 80% of cancer patients experience untreated moderate to severe pain, especially in developing countries. The prevalence of cancer pain in developed developing countries is higher as compared to developed countries, possibly since patients in developing countries present at an advanced stage of the disease.

Cancer pain has been acknowledged by the Government of Kenya as a public health problem, thus morphine was included in the essential drug list. Additionally, the government included palliative care in the mainstream healthcare system.

Culture and pain management practices have a connection, where culture can influence how people behave when they are in pain or how nurses practice pain management. Depending on their setting, nurses can respond to patients either negatively or positively.

The study aimed to explore the perceptions of Kenyan nurses caring for oncology patients as facilitators of cancer pain management. The study was an extract from a larger study and has not been published anywhere or submitted for publication elsewhere.

**Methodology**

The study used focused ethnography approach, that enables one to investigate specific beliefs and practices in a particular context and was carried out in a large referral hospital in Kenya. The study was purposively done in oncology unit or an oncology ward, which is a general ward in this particular hospital. The practices of nurses in the private unit or the private ward, where some cancer patients were admitted were compared. The study recruited 25 nurses through snowballing sampling method.

**Data collection**

The study conducted observations, especially when the nurses were providing direct patient care and when giving medications or doing wound care. Each observation took about four hours. Thereafter, an appointment with the nurses was made, and interviews were conducted for about 45 minutes each, within the unit for most of the nurses while for some nurses, interviews were conducted outside the facility.

**Data analysis**

Content analysis was done transcribing all the data and determining the means. Comprehensive categories were done by classifying initial codes that were similar, followed by determining the means of categories.

**Results**

In the oncology unit, opioids, especially morphine, were a facilitator to cancer pain management. This was not the case in the private unit, probably due to the fact that most of the oncology obviously had only cancer patients, thus the supply was constant, unlike the palliative care and private unit where a mixture of patients were admitted including cancer patients.

The second facilitator that was identified by the nurses was the fact that they were aware of the WHO cancer pain management guidelines, which were useful resource for them.
However, the nurses acknowledged that they never refer to the guidelines because they at least believe they know what they're doing. But in case they needed to refer, or if they have a new staff member, they can refer them to the guidelines.

The third facilitator is that the unit was staffed with experts specifically oncologists, and so whenever the nurses had a problem with a problematic patient whose pain was not well managed, the oncologist were able to intervene and so this made the nurses work easier.

The fourth facilitator is the fact that out of the 12 nurses interviewed and observed, 11 of them had formerly undergone palliative care training. This made a difference in how they practice pain management.

The fifth facilitator was the multidisciplinary collaboration, where patients in the general unit were treated by a team, unlike in the private unit, where patients were admitted by specific doctors and the primary doctor in the private unit will decide who part of their team in their oncology units is. Therefore, all disciplines work together, including the physiotherapist, the nurses and the oncologist and other health care providers. The nurses acknowledged teamwork as a facilitator to their practice in managing pain.

Nurses indicated that the unit is always sufficiently supplied with whatever they needed. This saved them time from running around to look for supplies if they needed to provide care. This improved their pain management practices. However, in the private unit, the nurses were going around looking for morphine from other units or going around looking for supplies so that they can provide patient care.

The availability of the palliative care team was identified as an additional facilitator to cancer pain management. However, there is a small difference in how this was a facilitator to both teams. In the private unit, the nurses felt comfortable that the team existed and that they could call them anytime. Therefore, they would call them regardless of the level of pain. However, the oncology nurse, working in the oncology unit said they knew the team was available and they would only involve them if the case is severe and they were unable to manage.

The last facilitator that was highlighted was the experience and knowledge of most of the nurses. Nurses who participated in this study had between two years and 36 years of experience in nursing practice. The private units reported only two facilitators when compared to the oncology unit that reported eight facilitators.

**Conclusion**

The study recommended that interventions should streamline palliative care training and implementation of pain management guidelines in both units and consider the influence of different units of cultures while implementing pain management policies and training.