Introduction and overview
Nixon Niyonzima – Uganda Cancer Institute
• Studies have shown that patients treated according to evidence-based standard treatment guidelines have better outcomes than patients who are not.

• Standardization of treatment within and across countries in the region:
  • Improves quality of treatment
  • Creates opportunities for regional collaborations around research, training, and program scale-up
  • Simplifies procurement planning

• Emergence of malpractice litigation in the region is creating interest in documenting evidence for treatment decisions

• Emergence of health insurance coverage in the region is creating interest in defining the scope of appropriate cancer treatment
**African Cancer Coalition**

- **Formation:** Led by Honourable Minister Isaac Adewole, Nigeria Health Minister, and Dr. Jackson Orem, Director of the Uganda Cancer Institute
- **Purpose:** To work together to standardize and improve cancer treatment in Sub-Saharan Africa
- Includes 70+ cancer experts from 13 countries in Africa
- Survey indicated that NCCN guidelines were the most widely used by African oncologists, so they were chosen as the basis
- Coalition meets twice yearly with a team of NCCN experts to do the adaptation
- American Cancer Society, Clinton Health Access Initiative, and IBM Foundation provide logistics support
Available on NCCN Website

- www.nccn.org/harmonized
- Access is free with registration

NCCN Harmonized Guidelines™ for Sub-Saharan Africa

- Adult Cancer Pain
- Breast Cancer
- Cervical Cancer
- Chronic Lymphocytic Leukemia/Small Lymphocytic Lymphoma
- Kaposi Sarcoma
- Non-Hodgkin's Lymphomas
  - B-cell Lymphomas
- Palliative Care
- Prostate Cancer
Together, these guidelines will cover 82% of estimated cancer incidence in Sub-Saharan Africa
The guidelines aim to reflect the heterogeneity of resource availability across Africa

Principle of adaptation:

Collectively, we aspire to, and will continue to advocate for, the highest standard of care for our patients, reflecting up-to-date science and practice. We also recognize the imperative to expand access to effective, affordable care in settings where those standards are not yet attainable.
The Coalition identified several principles in care that guide the harmonization process:

- Patients should be referred to centers that provide the highest level of care for a given clinical presentation
- Added lower level care options should be considered only when referral or access to higher levels is not possible
  - Standards of care are based on best reported achievable outcomes. Issues of cost, regulatory environment, and medical education and training are considerations that may affect treatment selection
  - Multidisciplinary care is always recommended
- Delays in treatment reduce the effectiveness of treatment, so efforts should be made to expedite investigations and referrals to reduce waiting time before treatment initiation
Three levels of recommendations:

- **Generally available standard of care** (Black text): refers to investigations and treatments that are usually available in cancer treatment centres.

- **Added options for the region** (Blue text): alternative investigations and treatments that have been added by African experts.

- **Highly advanced/optimal** (Gray text): refers to investigations and treatments that may only be available in advanced care settings. These should be used if they are available, but care should not be delayed or withheld if they are not.
**NCCN Harmonized Guidelines™ for Sub-Saharan Africa**

**Version 2.2017**

**Invasive Breast Cancer**

**Preoperative Systemic Therapy for Inoperable or Locally Advanced Breast Cancer (Non-Inflammatory): Workup**

### Clinical Stage

#### Stage IIIA
- T0, N2, M0
- T1, N2, M0
- T2, N2, M0
- T3, N2, M0

- History and physical exam
- Diagnostic bilateral mammogram; ultrasound as necessary
- Chest x-ray and ultrasound
- Pathology review
- Determination of tumor ER/PR status and HER2 status,
  - Genetic counseling if patient is high risk for hereditary breast cancer,
  - Breast MRI (optional), with special consideration for mammographically occult tumors
- Fertility counseling if premenopausal
- Assess for distress

#### Stage IIB
- T4, N0, M0
- T4, N1, M0
- T4, N2, M0

- Additional studies consider:
  - CBC
  - Comprehensive metabolic panel, including liver function tests and alkaline phosphatase
  - Chest diagnostic CT with contrast
  - Abdominal or pelvic diagnostic CT with contrast or MRI with contrast
  - Bone scan or sodium fluoride PET/CT (category 2B)
  - FDG PET/CT (optional)

#### Stage IIC
- Any T, N3, M0

- If HER2 status unknown, follow the negative path

**See Preoperative Systemic Therapy For Inoperable or Locally Advanced Breast Cancer (Non-Inflammatory) (BINV-15)**

### Highly-advanced:

- HER2 status determination
- Genetic counseling
- Breast MRI
- Bone scan or sodium fluoride PET/CT
- FDG PET/CT

**Contacts**

- Nixon Niyonzima
  - Head, Research and Training
  - Uganda Cancer Institute
  - nixon.niyonzima@uci.or.ug

- Meg O'Brien
  - American Cancer Society
  - Meg.Obrien@cancer.org
Using digital tools to support expansion of effective cancer care and research

*IBM Cancer Guidelines Navigator*

Joel Mangan  
Global Health Leader, IBM Corporate Citizenship  
World Cancer Congress, Oct 3rd 2018
The working principles of the partnership with the American Cancer Society and CHAI

1. Co-create and deliver with our partners

2. Agile and bias toward action to activate further momentum

3. Focus on user outcomes
The challenge that our oncologists face in the treatment assessment journey:

- Most oncologists in sub-Saharan Africa are treating up to 10 cancers.
- They have to make additional decisions based on resources.
- They can’t keep up with changes and research in every disease type.
- They don’t always have systems and time to gather and consolidate information to help patients understand their treatment.
The IBM **Cancer Guidelines Navigator** is a workflow driven application to support oncologists in guidelines reference and treatment options assessment and provide additional value in context for the oncologists in one place.
It can take as little as 45 seconds to get to the relevant part of the guidelines for your patient case. It asks for more information based on what has been selected.
### NCCN Harmonized Guidelines™ for Sub-Saharan Africa

**Version 2.2017**

**Invasive Breast Cancer**

#### Preoperative Systemic Therapy for Inoperable or Locally Advanced Breast Cancer (Non-Inflammatory): Workup

<table>
<thead>
<tr>
<th>Clinical Stage</th>
<th>Workup</th>
</tr>
</thead>
</table>
| **Stage II A** | - History and physical exam  
- Diagnostic bilateral mammogram; ultrasound as necessary  
- Chest x-ray and ultrasound  
- Pathology review  
- Determination of tumor ER/PR status and HER2 status  
- Genetic counseling if patient is high risk for hereditary breast cancer  
- Breast MRI (optional), with special consideration for mammographically occult tumors  
- Fertility counseling if premenopausal  
- Assess for distress |
| **Stage II A patients with T3, N1, M0 disease, see BINV-1** |
| **Stage II B** | Additional studies consider:  
- CBC  
- Comprehensive metabolic panel, including liver function tests and alkaline phosphatase  
- Chest diagnostic CT with contrast  
- Abdominal pelvic diagnostic CT with contrast or MRI with contrast  
- Bone scan or sodium fluoride PET/CT (category 2B)  
- FDG PET/CT (optional) |
| **Stage II C** | |

---

*If HER2 status unknown, follow the negative path.
*At a basic level, have a discussion with patient and family members.
*See Principles of HER2 Testing (BINV-A).
*See NCCN Guidelines for Genetic/Familial High-Risk Assessment: Breast and Ovarian.
*See Principles of Dedicated Breast MRI Testing (BINV-B).
*See Fertility and Birth Control (BINV-C).
*See NCCN Guidelines for Distress Management.

---

**Note:** This is the NCCN Harmonized Guideline™ for Sub-Saharan Africa. For definitions, see page DEF-1. All recommendations are category 2A unless otherwise indicated. Clinical Trials: NCCN believes that the best management of any cancer patient is in a clinical trial. Participation in clinical trials is especially encouraged.
It presents the treatment options as recommended by the NCCN Harmonized Guidelines.
The Oncologist can compare treatments side by side as they consider what is best for that particular patient.
For each treatment option it provides the relevant published evidence on that treatment from pubmed.
For each treatment option, the oncologist is also provided with the recommended administration details from NCCN
... and recommended supportive care

NCCN Supportive Care Info

PACLitaxel/CISplatin + Bevacizumab (CRV10 2018-01-26)

Chemotherapy Regimen

Emetic Risk

Febrile Neutropenia Risk

Monitoring and Hold Parameters

- CBC with differential should be monitored as clinically indicated for potential dose modification.
- For bevacizumab:
  - Serious hemorrhagic events can occur with therapy. Signs or symptoms of bleeding should be monitored as clinically indicated for potential discontinuation.
  - Hypertension may occur with therapy. Blood pressure should be monitored prior to each dose and as clinically indicated for potential dose modification.
  - Urinalysis and urine protein by dipstick should be monitored as clinically indicated for potential dose modification or discontinuation. Review drug package insert for specific recommendations.
  - An increased risk of deep venous thrombosis or pulmonary embolism may occur with therapy. Patients should be monitored for signs and symptoms of thromboembolism. Thromboembolic prophylaxis should be considered when clinically warranted. Review drug package insert and NCCN Guidelines for Venous Thromboembolic Disease for risk assessment, monitoring, and prophylaxis recommendations.
  - Serious gastrointestinal events including perforation and/or fistula can occur with therapy. Signs or symptoms should be monitored as clinically indicated for potential discontinuation.
  - Hypersensitivity reaction may occur with administration. Monitor for and treat hypersensitivity reactions per institutional standard. Initiation and/or adjustment of premedications should be considered. Infusion rate changes may be warranted.
  - An increased risk of arterial thrombotic events, such as myocardial infarction, angina, ischemic stroke, and transient ischemic attack may occur with therapy. Use with caution in patients who are at increased risk for or have a history of these events.
- For PACLitaxel:
  - Liver function should be monitored prior to each cycle for potential dose modification or discontinuation.
The oncologist can also see the drug information from Elsevier Gold Standard.
… with contraindications and precautions
... and they can also compare side-by-side the associated side-effects to discuss with the patient.
When they have chosen the treatment, they press a button to generate patient education material that can be printed or sent to the patient by email.

Patient Education Materials
Copyright © 2018 Elsevier/Gold Standard

Bevacizumab Solution for injection

**Trade Names:**
Avastin
The list of names may not include all products that are available on the market.

**What is this medicine?**
BEVACIZUMAB (be va SIZ yoo mab) is a monoclonal antibody. It is used to treat many types of cancer.

**What should I tell my health care provider before I take this medicine?**
They need to know if you have any of these conditions:

- diabetes
- heart disease
- high blood pressure
- history of coughing up blood
- prior anthracycline chemotherapy (e.g., doxorubicin, daunorubicin, epirubicin)
- recent or ongoing radiation therapy
- recent or planning to have surgery
- stroke
- an unusual or allergic reaction to bevacizumab, hamster proteins, mouse proteins, other medicines, foods, dyes, or preservatives
- pregnant or trying to get pregnant
- breast-feeding

**How should I use this medicine?**
This medicine is for infusion into a vein. It is given by a health care professional in a hospital or clinic setting.

Talk to your pediatrician regarding the use of this medicine in children. Special care may be needed.
The IBM Cancer Guidelines Navigator

Phase 1: Zambia and Nigeria

Phase 2: Available for Oncologists in the African Cancer Coalition in April 2019

Cancer Coverage
• Breast Cancer
• Cervical Cancer
• B-Cell
• Prostate Cancer
• Kaposi Sarcoma
ChemoFinder: Improving Private Sector Chemotherapy Access for Patients

World Cancer Congress
October 2018
Patients face several challenges accessing medicines in the private sector

Drug stock outs at public cancer treatment centers are common

- Patients are referred to private pharmacies

- Patients do not know:
  - Which pharmacies have the products
  - How much the medicines should cost
  - Whether the drugs are of good quality

- Prescribers lack key information to effectively refer patients

- Private pharmacies do not have good demand information:
  - Holding excess stock → increased prices
  - Stockouts → sub-optimal treatment for patients
ACS, CHAI and IBM have developed ChemoFinder, a data tool to help navigate the private sector chemotherapy market

- ChemoFinder tracks data from hospitals and pharmacies to improve visibility on price, availability and quality of chemotherapies.
- Empowers prescribers with real time data to help patients get the right drugs at the right price.
How it works

Start

Private Pharmacies

Upload list of stocked out drugs

Public Center Center

Upload stock list (price, SRA approvals, volumes)

Validates pharmacy stock against SRA/NDA database to ensure quality

Matches stocked out drugs in public with availability in private

Displays drug availability, with price and quality info, to enable informed referral

Prescribers search for drugs and make informed referrals

Oncologists, Pharmacists, Patient Navigators

ChemoFinder

USERS
Treatment centers upload stock data, to identify which products are not available
Private pharmacies upload stock availability, pricing and quality data, to receive referrals

## My Stock

### Add New Medicine

### Add New Approved Medicine

### Upload Stock List

### Download Stock Template

### Download My Last Stock

### Medicines in Stock

Show entries

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ChemoFinder generates a referral form (SMS or paper print), so patients can use to make informed decisions.

### ChemoFinder Shopping List

Your treatment center is KT hospital
For Patient ID: MK1234/18

#### x1 Bicalutamide Casodex Tablets 50 mg AstraZeneca UK Ltd

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<th>Open To</th>
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#### x1 Anastrozole Arimidex Tablets 1 mg AstraZeneca UK Limited

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<td>21:30:00</td>
<td>31/07/2018</td>
<td>28</td>
<td>5000</td>
</tr>
</tbody>
</table>
# ChemoFinder provides benefits across stakeholders

| Patients                  | Easier to navigate the private market  
|                          | • Get the right medicines  
|                          | • Informed decisions on price and quality |
| Prescribers (Pharmacists, Oncologists) | Empowered with real-time data to direct patients to pharmacies with the most affordable, quality chemotherapies  
|                          | • Standardized referral process |
| Hospitals, gov’ts, policymakers | Better understanding of demand, consumption and pricing:  
|                          | • Informs budgeting and forecasting processes  
|                          | • Greater transparency in market leads to more price competition, fewer stock-outs, & a shift towards quality |
| Private pharmacies       | Opportunity to capture more of the market (for those with quality, affordable products)  
|                          | • Larger customer base for other products  
|                          | • Receive market reports & procure based on demand |
ChemoFinder is data-driven, which can create operational challenges

**Hospitals**
- Recurring data entry for pharmacy department
- Willingness to prescribe according to CF recommendations
- Prescribing and patient navigation systems varies by hospital

**Pharmacies**
- Recurring data entry for private pharmacies
- Willingness to use and share consistent pricing, and honor prices when patients present
- Challenges with internet connections for uploading data

**Patients**
- Willingness to follow CF/prescriber recommendations
  - Patient loyalty to particular pharmacies
  - Participating pharmacies may not be as close/convenient
We are now thinking about where to implement and potential partners.

IBM has developed the software and is committed to providing ongoing technical support for implementation.

Stakeholder Engagement & Buy-In

Piloting

Roll out

Success factors

- Private sector pharmacies play a significant role in provision of chemotherapy
- Challenges / lack of transparency around pricing, quality and/or availability
- Buy-in from referring hospitals and private pharmacies
- Willingness to conduct recurring data entry at both hospitals and private pharmacies
Thank You
Rethinking Cancer Information Dissemination in a Digitally-Connected World

Lakshmi Grama, MA, MLS
Associate Director, Dissemination & Digital Communications
Office of Communications & Public Liaison
Twitter - @lgrama
US National Cancer Institute

- NCI leads, conducts, and supports cancer research across the United States to advance scientific knowledge and help all people live longer, healthier lives.

- NCI leads the US National Cancer Program and supports international cancer research activities
National Cancer Act, 1971

Collect, analyze, and disseminate all data useful in the prevention, diagnosis, and treatment of cancer, including the establishment of an international cancer research data bank to collect, catalog, store, and disseminate insofar as feasible the results of cancer research undertaken in any country for the use of any person involved in cancer research in any country.
The World is Increasingly Digital, Mobile, & Connected

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**Sources:** Population data from the United Nations, digital usage data from various sources including Facebook, Twitter, and other social media platforms.
The World is Increasingly Digital, Mobile, & Connected
The World is Increasingly Digital, Mobile, & Connected
# International Audiences Find Us – On Google

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</table>
International Audiences Find Us – On Cancer.gov

- 15.1 million international visits to English content in last 12 months
  - United Kingdom – 2.4 million visits
  - India – 1.9 million visits
  - Canada – 1.4 million visits
  - Australia – 980k visits

- 18.6 million visits to Spanish content in the last 12 months
  - Mexico – 4.4 million visits
  - Spain – 4.2 million visits
  - Colombia – 1.9 million visits
  - Argentina – 1.7 million visits
Hi I'm in TREAT CANCER

Bom dia

Hi I'm in TREAT CANCER

No Brasil, é possivel fazer o exame TAYLOR X ?

Hi I'm in TREAT CANCER

Excuse me, I understood, I would like to know if here in Brazil have how to take the TAYLOR X exam?

Hi Again, As the United States principle agency for cancer research we do not have information about diagnostic tests in Brazil. It may help to know that the TAILORx Breast Cancer Trial was evaluating the use of a test called the Oncotype DX. You can ask the doctor about the availability of this test in Brazil. You can also use the following resources to search for cancer information and support organizations in Brazil: http://nci.org/membership/membership-list/; http://www.ucc.org/membership. Information about the TAILORx Breast Cancer Trial can be found here: https://www.cancer.gov/types/breast/research/tailorx. Take care.
What Makes Us Findable on Digital Platforms

- Good content
- User-friendly
- Mobile-friendly
- Search engine-friendly
- Syndication-friendly

Four Major Rule Areas for Google SEO

For optimal results, start with a solid base and then work your way up.
Suggestions For Providers of Digital Content

- Make your information and website mobile accessible
- Take care of easy technical fixes to ensure Google finds and values your content
- Build linkages with other reputable resources in country and internationally
- Keep content updated regularly
- Follow simple SEO rules
  - Good titles
  - Metadata
# How to Search Engine Optimize Content & Metadata

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<td>• High ranking signal. The most important field for SEO after the page content itself!</td>
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<tr>
<td><strong>Page Title</strong></td>
<td>75</td>
<td>• Title for the content of the page – receives the H1 heading tag.</td>
<td>• High ranking signal.</td>
</tr>
<tr>
<td><strong>Subtitles</strong></td>
<td></td>
<td>• Subtitles on the page – receive the H2 heading tag.</td>
<td>• Medium ranking signal.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Use primary keyword in one or two subtitles</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Should be unique and descriptive</td>
<td></td>
</tr>
<tr>
<td><strong>Meta Description</strong></td>
<td>Varies.</td>
<td>• Google displays this text as the description on their search results pages. Also displays in cancer.gov</td>
<td>• Directly impacts click-through rates (# of people clicking on the headline in the search results page), which is a high ranking signal.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Most important information should be in the first 160 characters.</td>
<td>• It is important to have the keywords in the meta description, in part b/c engines apply boldface to the words that match the query. Increases visibility &amp; click-through rates.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Don't exceed 300 characters.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Must include primary keyword in the beginning of the first sentence!</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Used as succinct advertisements/teasers to entice searchers to click on your page! Should be compelling</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• and include a call to action like &quot;Learn more about...&quot; or &quot;Get more information on...&quot;</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Descriptive &amp; accurate so that the user doesn't hit the &quot;Back&quot; button</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Must be unique to that page</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Example:</td>
<td></td>
</tr>
<tr>
<td><strong>Anchor Text</strong></td>
<td></td>
<td>• Visible, clickable text in a hyperlink. It is oftentimes blue and underlined.</td>
<td>• Medium ranking signal. Help search engines determine what the &quot;linked-to-page&quot; is about</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Should be succinct and relevant to the target page (the page it's linking to)</td>
<td>• While we often can’t control how other sites link to ours, we can make sure that our internal anchor text is done properly.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Primary keyword for the target page should be in the Anchor Text</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Exact-match: the anchor text can be just the primary keyword</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Phrase-match: the anchor text can include the primary keyword in a longer string of text</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Avoid generic words or phrases like &quot;click here&quot; and &quot;learn more.&quot;</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Example:</td>
<td></td>
</tr>
</tbody>
</table>

You can find more information in the 508 compliance section of this guide.
African Cancer Coalition/NCCN
Harmonized Cancer Treatment Guidelines for Sub-Saharan Africa

Introduction and overview
Nixon Niyonzima – Uganda Cancer Institute
Studies have shown that patients treated according to evidence-based standard treatment guidelines have better outcomes than patients who are not.

Standardization of treatment within and across countries in the region:
- Improves quality of treatment
- Creates opportunities for regional collaborations around research, training, and program scale-up
- Simplifies procurement planning

Emergence of malpractice litigation in the region is creating interest in documenting evidence for treatment decisions.

Emergence of health insurance coverage in the region is creating interest in defining the scope of appropriate cancer treatment.
African Cancer Coalition

- **Formation:** Led by Honourable Minister Isaac Adewole, Nigeria Health Minister, and Dr. Jackson Orem, Director of the Uganda Cancer Institute

- **Purpose:** To work together to standardize and improve cancer treatment in Sub-Saharan Africa

- Includes 70+ cancer experts from 13 countries in Africa

- Survey indicated that NCCN guidelines were the most widely used by African oncologists, so they were chosen as the basis

- Coalition meets twice yearly with a team of NCCN experts to do the adaptation

- American Cancer Society, Clinton Health Access Initiative, and IBM Foundation provide logistics support
Available on NCCN Website

- [www.nccn.org/harmonized](http://www.nccn.org/harmonized)
- Access is free with registration

**NCCN Harmonized Guidelines™ for Sub-Saharan Africa**

- Adult Cancer Pain
- Breast Cancer
- Cervical Cancer
- Chronic Lymphocytic Leukemia/Small Lymphocytic Lymphoma
- Kaposi Sarcoma
- Non-Hodgkin’s Lymphomas
  - B-cell Lymphomas
- Palliative Care
- Prostate Cancer
<table>
<thead>
<tr>
<th>Completed 2017</th>
<th>In preparation 2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>B-cell lymphomas</td>
<td>Antiemesis</td>
</tr>
<tr>
<td>Breast cancer</td>
<td>Colon cancer</td>
</tr>
<tr>
<td>Cervical cancer</td>
<td>Esophageal cancer</td>
</tr>
<tr>
<td>Kaposi sarcoma</td>
<td>Gastric cancer</td>
</tr>
<tr>
<td>Pain treatment</td>
<td>Head/neck cancers</td>
</tr>
<tr>
<td>Palliative care</td>
<td>Myeloid growth factors</td>
</tr>
<tr>
<td>Prostate cancer</td>
<td>Rectal cancer</td>
</tr>
<tr>
<td>Chronic lymphocytic leukaemia/</td>
<td>Survivorship</td>
</tr>
<tr>
<td>small lymphocytic lymphoma</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Together, these guidelines will cover 82% of estimated cancer incidence in Sub-Saharan Africa</td>
<td></td>
</tr>
</tbody>
</table>
Resource-integrated guidelines

- The guidelines aim to reflect the heterogeneity of resource availability across Africa
- Principle of adaptation:

  Collectively, we aspire to, and will continue to advocate for, the highest standard of care for our patients, reflecting up-to-date science and practice. We also recognize the imperative to expand access to effective, affordable care in settings where those standards are not yet attainable.
The Coalition identified several principles in care that guide the harmonization process:

- Patients should be referred to centers that provide the highest level of care for a given clinical presentation.
- Added lower level care options should be considered only when referral or access to higher levels is not possible.
  - Standards of care are based on best reported achievable outcomes. Issues of cost, regulatory environment, and medical education and training are considerations that may affect treatment selection.
  - Multidisciplinary care is always recommended.
- Delays in treatment reduce the effectiveness of treatment, so efforts should be made to expedite investigations and referrals to reduce waiting time before treatment initiation.
Resource-integrated guidelines

Three levels of recommendations:

- **Generally available standard of care (Black text)**: refers to investigations and treatments that are usually available in cancer treatment centres.

- **Added options for the region (Blue text)**: alternative investigations and treatments that have been added by African experts.

- **Highly advanced/optimal (Gray text)**: refers to investigations and treatments that may only be available in advanced care settings. These should be used if they are available, but care should not be delayed or withheld if they are not.
Added:
- Chest x-ray and ultrasound
- If HER2 status is unknown, follow the negative path
- Patient and family discussion if genetic counseling is not an option

Highly-advanced:
- HER2 status determination
- Genetic counseling
- Breast MRI
- Bone scan or sodium fluoride PET/CT
- FDG PET/CT

Contacts
- Nixon Niyonzima
  Head, Research and Training
  Uganda Cancer Institute
  nixon.niyonzima@uci.or.ug
- Meg O’Brien
  American Cancer Society
  Meg.Obrien@cancer.org