

African Cancer Coalition/NCCN Harmonized Cancer Treatment Guidelines for Sub-Saharan Africa

Introduction and overview

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Background

- 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

- HAR** Adult Cancer Pain
 - HAR** Breast Cancer
 - HAR** Cervical Cancer
 - HAR** Chronic Lymphocytic Leukemia/Small Lymphocytic Lymphoma
 - HAR** Kaposi Sarcoma
 - HAR** Non-Hodgkin's Lymphomas
 - HAR** B-cell Lymphomas
 - HAR** Palliative Care
 - HAR** Prostate Cancer
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Guidelines

Completed 2017	In preparation 2018	
B-cell lymphomas	Antiemesis	Bladder cancer
Breast cancer	Colon cancer	Kidney cancer
Cervical cancer	Esophageal cancer	Liver cancer
Kaposi sarcoma	Gastric cancer	Lung cancer
Pain treatment	Head/neck cancers	Ovarian cancer
Palliative care	Myeloid growth factors	Pancreatic cancer
Prostate cancer	Rectal cancer	Uterine cancer
Chronic lymphocytic leukaemia/ small lymphocytic lymphoma	Survivorship	Gestational trophoblastic neoplasms

Together, these guidelines will cover 82% of estimated cancer incidence in Sub-Saharan Africa

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.

Principles of care

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

THE NCCN HARMONIZED GUIDELINES™ FOR SUB-SAHARAN AFRICA ARE REPRESENTED AS FOLLOWS:
Black Text: Generally available standard of care
Gray Text: Highly advanced/optimal care that may be costly, technically challenging, and/or have a lesser impact on oncologic outcome
Blue Text: Regional options that may be considered when availability precludes general standard of care

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

PREOPERATIVE SYSTEMIC THERAPY FOR INOPERABLE OR LOCALLY ADVANCED BREAST CANCER (NON-INFLAMMATORY): WORKUP

CLINICAL STAGE

WORKUP

<p>Stage IIIA T0, N2, M0 T1, N2, M0 T2, N2, M0 T3, N2, M0</p> <p>Stage IIIA patients with T3, N1, M0 disease, see BINV-1</p>	<p>• History and physical exam • Diagnostic bilateral mammogram; ultrasound as necessary • Chest x-ray and ultrasound • Pathology review^a • Determination of tumor ER/PR status and HER2 status^{b,*} • Genetic counseling if patient is high risk for hereditary breast cancer^{c,**} • Breast MRI^d (optional), with special consideration for mammographically occult tumors • Fertility counseling if premenopausal^e • Assess for distress^f</p>
<p>Stage IIIB T4, N0, M0 T4, N1, M0 T4, N2, M0</p>	<p>Additional studies consider:^g</p> <p>• 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^h (category 2B) • FDG PET/CT^{i,j} (optional)</p>
<p>Stage IIIC Any T, N3, M0</p>	

[See Preoperative Systemic Therapy For Inoperable or Locally Advanced Breast Cancer \(Non-inflammatory\) \(BINV-15\)](#)

* If HER2 status unknown, follow the negative path.

**At a basic level, have a discussion with patient and family members.

^aThe panel endorses the College of American Pathologists Protocol for pathology reporting for all invasive and noninvasive carcinomas of the breast. <http://www.cap.org>.

^bSee [Principles of HER2 Testing \(BINV-A\)](#).

^cSee [NCCN Guidelines for Genetic/Familial High-Risk Assessment: Breast and Ovarian](#).

^dSee [Principles of Dedicated Breast MRI Testing \(BINV-B\)](#).

^eSee [Fertility and Birth Control \(BINV-C\)](#).

^fSee [NCCN Guidelines for Distress Management](#).

^hIf FDG PET/CT is performed and clearly indicates bone metastasis, on both the PET and CT component, bone scan or sodium fluoride PET/CT may not be needed.

ⁱFDG PET/CT can be performed at the same time as diagnostic CT. The use of PET or PET/CT is not indicated in the staging of clinical stage I, II, or operable III breast cancer. FDG PET/CT is most helpful in situations where standard staging studies are equivocal or suspicious, especially in the setting of locally advanced or metastatic disease.

^jFDG PET/CT may also be helpful in identifying unsuspected regional nodal disease and/or distant metastases in locally advanced breast cancer when used in addition to standard staging studies.

Note: This is the NCCN Harmonized Guidelines™ for Sub-Saharan Africa. For definitions, see page DEF-1.

Note: 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.

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

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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 we work work 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

The screenshot displays the IBM Cancer Guidelines Navigator interface. At the top, the title 'IBM Cancer Guidelines Navigator' is on the left, and navigation links for 'Unknown', 'Information', and 'Notices' are on the right. A dark sidebar on the left contains icons for 'Home', 'Patient Info', 'Treatment Plans', and 'Comments'. The main content area is divided into sections: 'Demographics' (Age: 40), 'Disease Status' (Cancer type: Cervical Cancer, Disease Extent: Metastatic (Stage IVB)), and 'Treatment History' (Prior therapies for this cancer: Brachytherapy). Below these is the 'Clinical Information' section, which includes a search bar for attributes and 'Save' and 'Show Treatments' buttons. The 'Summary' tab is active, showing 'Required Attributes' for 'Patient characteristics' (Age: 40 years old), 'Staging characteristics' (Disease Extent: Metastatic (Stage IVB)), and 'Prior treatments' (Prior therapies for this cancer: Brachytherapy). The 'Disease status' section is partially visible at the bottom.

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

IBM Cancer Guidelines Navigator Unknown Information Notices

Demographics Age: 40 Disease Status Cancer type: Cervical Cancer Treatment History Prior therapies for this cancer: None

Clinical Information

Summary All Attributes

Required Attributes:

Patient characteristics

Age *
40 years old

Staging characteristics

Disease Extent *
Primary Local/Regional (Stage I - IVA)

FIGO stage *
IIA1 - Clinically visible lesion 4.0 cm or less in greatest dimension. Cervical carcinoma invades beyond uterus but not to pelvic wall or to lower third of vagina

Prior treatments

Prior therapies for this cancer *
None

Incidental finding after simple hysterectomy *

PREOPERATIVE SYSTEMIC THERAPY FOR INOPERABLE OR LOCALLY ADVANCED BREAST CANCER (NON-INFLAMMATORY): WORKUP

CLINICAL STAGE	WORKUP
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[See Preoperative Systemic Therapy For Inoperable or Locally Advanced Breast Cancer \(Non-Inflammatory\) \(BINV-15\)](#)

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ⁱFDG PET/CT can be performed at the same time as diagnostic CT. The use of PET or PET/CT is not indicated in the staging of clinical stage I, II, or operable III breast cancer. FDG PET/CT is most helpful in situations where standard staging studies are equivocal or suspicious, especially in the setting of locally advanced or metastatic disease.

^jFDG PET/CT may also be helpful in identifying unsuspected regional nodal disease and/or distant metastases in locally advanced breast cancer when used in addition to standard staging studies.

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Note: 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 screenshot displays the IBM Cancer Guidelines Navigator interface. At the top, the title 'IBM Cancer Guidelines Navigator' is on the left, and navigation links for 'Unknown', 'Information', and 'Notices' are on the right. Below the title bar, patient information is shown: 'Patient Case 123456', 'Demographics Age: 40', 'Disease Status Cancer type: Cervical Cancer', and 'Treatment History Prior therapies for this cancer: Brachytherapy'. A left sidebar contains navigation icons for Home, Patient Info, Treatment Plans, and Comments. The 'Treatment Plans' section is active, showing 'Chemotherapy' (NCCN Recommended) and 'Best Supportive Care' (NCCN Recommended). The main content area is titled 'Chemotherapy' and includes a 'Print' icon. Below this is the 'Saved Treatment Selections' section, which contains a message: 'No selections have been made for this plan. Please select from below.' and a warning: 'Please select an option from all modalities to build a complete treatment plan. See the following tab(s) below: Chemotherapy.' The 'Treatment Options' section follows, with a 'Save Selections' button. It lists 'Chemotherapy 12' and 'NCCN Recommended' with an information icon. At the top right of this section are 'Expand All' and 'Compare' buttons. Three treatment options are listed, each with a radio button, a right-pointing arrow, and a dropdown arrow: 1. 'Cisplatin / paclitaxel / bevacizumab' (NCCN Category 1 | CERV-12) 2. 'Cisplatin / paclitaxel' (NCCN Category 1 | CERV-12) 3. 'Topotecan / paclitaxel / bevacizumab' (NCCN Category 1 | CERV-12)

The Oncologist can compare treatments side by side as they consider what is best for that particular patient

The screenshot displays the IBM Cancer Guidelines Navigator interface. At the top, the title 'IBM Cancer Guidelines Navigator' is on the left, and navigation links for 'Unknown', 'Information', and 'Notices' are on the right. Below this is a patient information header with fields for 'Patient Case' (123456), 'Demographics' (Age: 40), 'Disease Status' (Cancer type: Cervical Cancer), and 'Treatment History' (Prior therapies for this cancer: Brachytherapy). A central search bar contains 'Cisplatin / paclitaxel / bevacizumab' and 'Topotecan / paclitaxel / bevacizumab', both marked as 'NCCN Recommended'. A 'Cancel' button is on the right. Below the search bar are tabs for 'Evidence', 'Administration', and 'Drug Information'. The main content area is titled 'Administration Options' and is split into two columns. The left column shows a 21-day cycle with Bevacizumab 15 mg/kg IV on Day 1, followed by PAclitaxel 135 mg/m² IV continuous infusion over 24 hours on Day 1, followed by CISplatin 50 mg/m² IV over 60 minutes on Day 2. The right column shows a 21-day cycle with Bevacizumab 15 mg/kg IV on Day 1, followed by PAclitaxel 175 mg/m² IV over 3 hours on Day 1, followed by Topotecan 0.75 mg/m² IV over 30 minutes daily on Days 1-3. A 'Chemotherapy Order Template CRV26 2018-01-26' link is at the bottom of the right column. A vertical sidebar on the left contains icons for Home, Patient Info, Treatment Plans, and Comments.

IBM Cancer Guidelines Navigator

Unknown Information Notices

Patient Case: 123456 Demographics: Age: 40 Disease Status: Cancer type: Cervical Cancer Treatment History: Prior therapies for this cancer: Brachytherapy

Cisplatin / paclitaxel / bevacizumab NCCN Recommended

Topotecan / paclitaxel / bevacizumab NCCN Recommended Cancel

Evidence Administration Drug Information

Administration Options

21-day cycle until disease progression or unacceptable toxicity

- **Bevacizumab** 15 mg/kg IV on Day 1
 - See *Safety Parameters and Special Instructions* for recommended infusion rate.
- **PAclitaxel** 135 mg/m² IV continuous infusion over 24 hours on Day 1

followed by

- **CISplatin** 50 mg/m² IV over 60 minutes on Day 2
 - Hydration is required with supplemental electrolytes pre- and post-administration of CISplatin.
See *Other Supportive Therapy* for example of recommended hydration.

OR

21-day cycle until disease progression or unacceptable toxicity

- **Bevacizumab** 15 mg/kg IV on Day 1
 - See *Safety Parameters and Special Instructions* for recommended infusion rate.
- **PAclitaxel** 175 mg/m² IV over 3 hours on Day 1

followed by

- **CISplatin** 50 mg/m² IV over 60 minutes on Day 1
 - Hydration is required with supplemental electrolytes pre- and post-administration of

Chemotherapy Order Template CRV26 2018-01-26

For each treatment option it provides the relevant published evidence on that treatment from pubmed

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For each treatment option, the oncologist is also provided with the recommended administration details from NCCN

The screenshot displays the IBM Cancer Guidelines Navigator interface. At the top, there is a navigation bar with 'Unknown', 'Information', and 'Notices' dropdown menus. Below this is a patient information header with four tabs: 'Patient Case' (123456), 'Demographics' (Age: 40), 'Disease Status' (Cancer type: Cervical Cancer), and 'Treatment History' (Prior therapies for this cancer: Brachytherapy). A left sidebar contains icons for Home, Patient Info, Treatment Plans, and Comments. The main content area shows a search for 'Cisplatin / paclitaxel / bevacizumab', which is marked as 'NCCN Recommended' (NCCN Category 1 | CERV-12). Below the search results are tabs for 'Evidence', 'Administration', and 'Drug Information'. The 'Administration' tab is active, showing 'Administration Options' with a 'Print' icon. Two treatment options are listed, both as '21-day cycle until disease progression or unacceptable toxicity'. The first option details: Bevacizumab 15 mg/kg IV on Day 1 (with a note to see safety parameters), followed by PACLitaxel 135 mg/m² IV continuous infusion over 24 hours on Day 1, followed by CISplatin 50 mg/m² IV over 60 minutes on Day 2 (with a note on hydration and other supportive therapy). The second option details: Bevacizumab 15 mg/kg IV on Day 1 (with a note to see safety parameters), followed by PACLitaxel 175 mg/m² IV over 3 hours on Day 1, followed by CISplatin 50 mg/m² IV over 60 minutes on Day 1 (with a note on hydration and other supportive therapy).

IBM Cancer Guidelines Navigator Unknown ▾ Information ▾ Notices ▾

Patient Case: 123456 Demographics: Age: 40 Disease Status: Cancer type: **Cervical Cancer** Treatment History: Prior therapies for this cancer: **Brachytherapy** ▾

← Cisplatin / paclitaxel / bevacizumab ▾ Compare to Another Treatment

● NCCN Recommended NCCN Category 1 | CERV-12 ⓘ

Evidence **Administration** Drug Information

Administration Options Print

21-day cycle until disease progression or unacceptable toxicity

- **Bevacizumab** 15 mg/kg IV on Day 1
 - See *Safety Parameters and Special Instructions* for recommended infusion rate.
- **PACLitaxel** 135 mg/m² IV continuous infusion over 24 hours on Day 1

followed by

- **CISplatin** 50 mg/m² IV over 60 minutes on Day 2
 - Hydration is required with supplemental electrolytes pre- and post-administration of CISplatin. See *Other Supportive Therapy* for example of recommended hydration.

OR

21-day cycle until disease progression or unacceptable toxicity

- **Bevacizumab** 15 mg/kg IV on Day 1
 - See *Safety Parameters and Special Instructions* for recommended infusion rate.
- **PACLitaxel** 175 mg/m² IV over 3 hours on Day 1

followed by

- **CISplatin** 50 mg/m² IV over 60 minutes on Day 1
 - Hydration is required with supplemental electrolytes pre- and post-administration of CISplatin. See *Other Supportive Therapy* for example of recommended hydration.

... and recommended supportive care

IBM Cancer Guidelines Navigator Unknown ▾ Information ▾ Notices ▾

Home	Patient Case 123456	Demographics Age: 40	Disease Status Cancer type: Cervical Cancer	Treatment History Prior therapies for this cancer: Brachytherapy
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Patient Info

NCCN Supportive Care Info ⓘ Expand All

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

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IBM Cancer Guidelines Navigator Unknown Information Notices

Patient Case: 123456 Demographics: Age: 40 Disease Status: Cancer type: Cervical Cancer Treatment History: Prior therapies for this cancer: Brachytherapy

Evidence Administration **Drug Information**

Drug Information from Elsevier Gold Standard Expand All Print

Possible match to known patient attributes Black Box Warning Adverse Reaction Incidence All additional information

Bevacizumab View Adverse Reaction Incidence

Contraindications/Precautions

Adverse Reactions

Interactions

Cisplatin View Adverse Reaction Incidence

Contraindications/Precautions

Adverse Reactions

Interactions

Paclitaxel View Adverse Reaction Incidence

... with contraindications and precautions

IBM Cancer Guidelines Navigator

Unknown Information Notices

Patient Case: 123456 Demographics: Age: 40 Disease Status: Cancer type: Cervical Cancer Treatment History: Prior therapies for this cancer: Brachytherapy

Evidence Administration **Drug Information**

Drug Information from Elsevier Gold Standard

Possible match to known patient attributes Black Box Warning Adverse Reaction Incidence All additional information

[Expand All](#) [Print](#)

Bevacizumab [View Adverse Reaction Incidence](#)

Contraindications/Precautions

Contraindications
There are no known contraindications for this drug.

Precautions

GI perforation **B** **bleeding** **B** impaired wound healing **B**

Serious **bleeding** events (e.g., hemoptysis, GI bleeding, hematemesis, CNS hemorrhage/intracranial bleeding, epistaxis, and vaginal bleeding) have been reported with bevacizumab therapy; some cases were fatal. Discontinue bevacizumab in patients who develop grade 3 or 4 bleeding; do not administer bevacizumab in patients who have a history of hemoptysis with 1/2 teaspoon or more of red blood.^[60402]

[60402] Avastin (bevacizumab) IV package insert. South San Francisco, CA: Genentech, Inc.; 2016 Dec.

surgery B	GI bleeding	GI obstruction
angina	breast-feeding	contraception requirements
dental work	diabetes mellitus	encephalopathy
fistula	heart failure	hypertension
hypertensive crisis	infertility	infusion-related reactions

... and they can also compare side-by-side the associated side-effects to discuss with the patient

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IBM Cancer Guidelines Navigator

Unknown Information Notices

Home

Patient Case 123456

Demographics Age: 40

Disease Status Cancer type: Cervical Cancer

Treatment History Prior therapies for this cancer: Brachytherapy

Paclitaxel [View Adverse Reaction Incidence](#)

Topotecan [View Adverse Reaction Incidence](#)

Contraindications/Precautions

Contraindications

- neutropenia ^B
- polyoxyethylated castor oil hypersensitivity

Precautions

- bone marrow suppression ^B
- requires a specialized care setting ^B
- requires an experienced clinician ^B
- serious hypersensitivity reactions or anaphylaxis ^B
- AV block
- Kaposi's sarcoma
- accidental exposure
- alcoholism
- angina
- bradycardia
- breast-feeding
- cardiac arrhythmias
- cardiac disease
- dental disease
- dental work
- driving or operating machinery
- extravasation
- heart failure
- hepatic disease
- herpes infection
- infection
- intramuscular administration

Contraindications/Precautions

Contraindications

- serious hypersensitivity reactions or anaphylaxis

Precautions

- bone marrow suppression ^B
- abdominal pain
- anemia
- breast-feeding
- chronic lung disease (CLD)
- colitis
- contraception requirements
- diarrhea
- extravasation
- fever
- herpes infection
- infection
- infertility
- lung cancer
- male-mediated teratogenicity
- neutropenia
- pneumonitis
- pregnancy
- pregnancy testing
- pulmonary disease
- pulmonary fibrosis
- radiation therapy
- reproductive risk
- thrombocytopenia

Home

Patient Info

Treatment Plans

Comments

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

Cisplatin / paclitaxel / bevacizumab

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

African Cancer
Coalition

IBM



NCCN
National
Comprehensive
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Network®



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

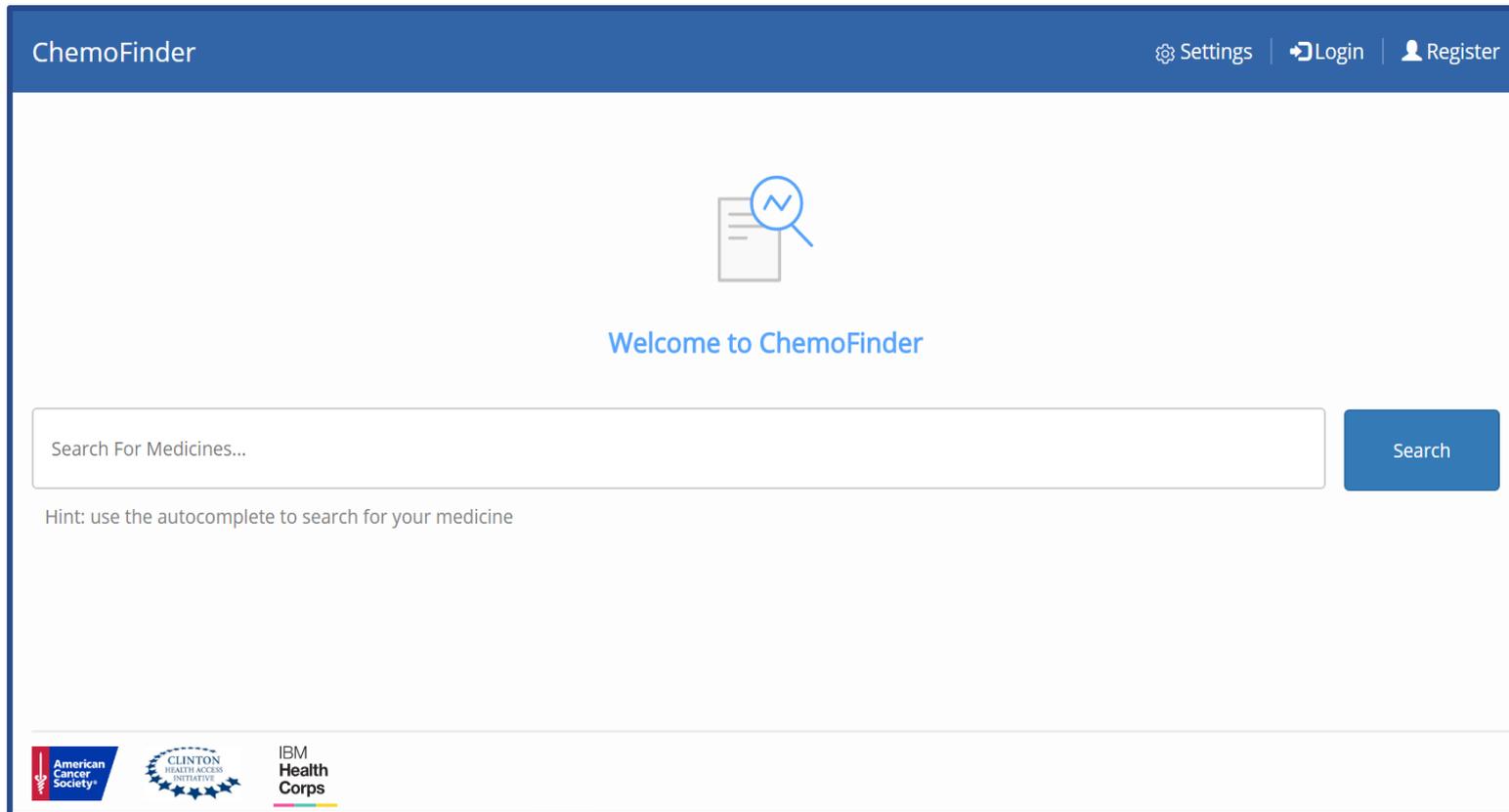
- Patients do not know:
 - Which pharmacies have the products
 - How much the medicines should cost
 - Whether the drugs are of good quality

- Prescribers lack key information to effectively refer patients

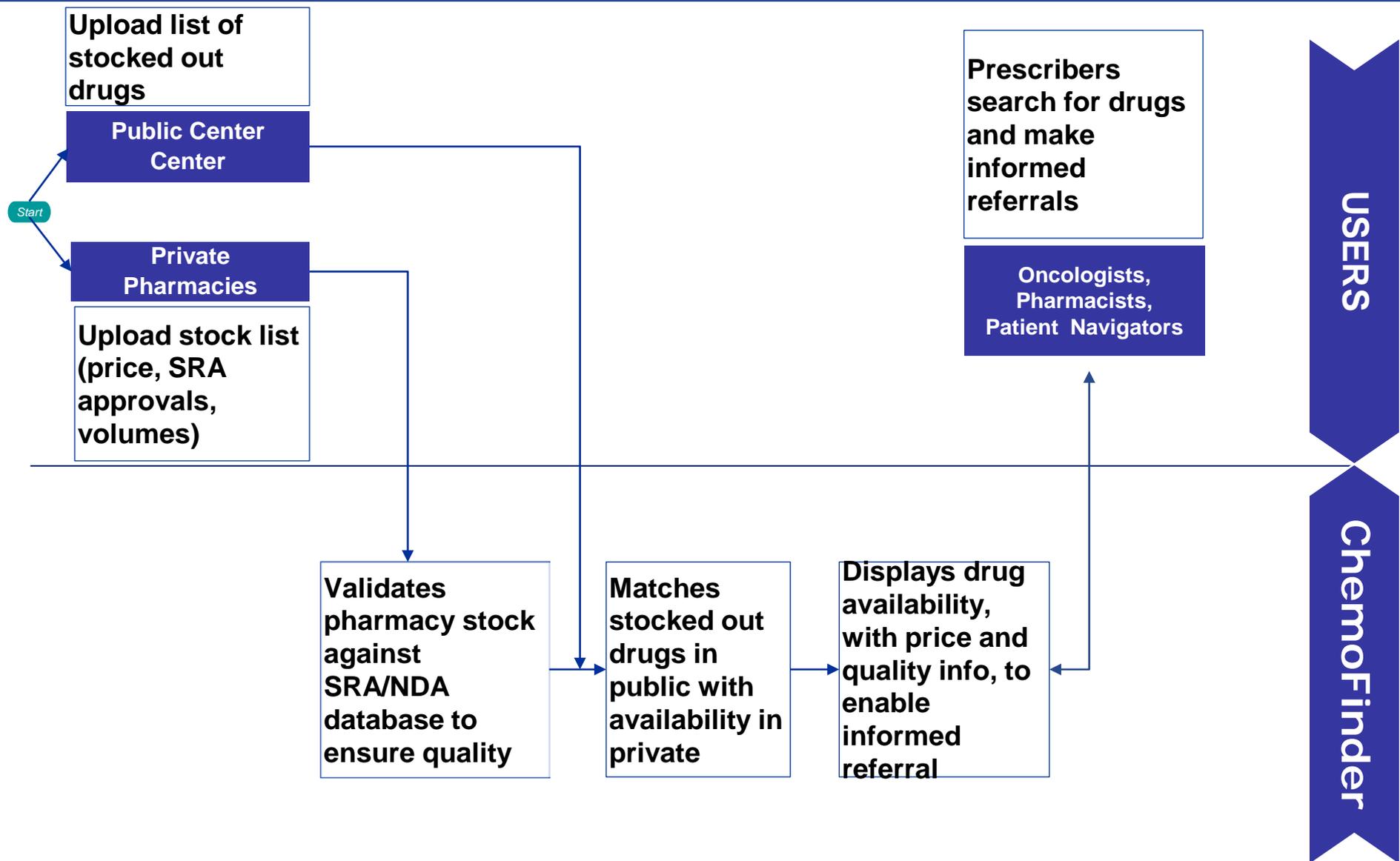
- Private pharmacies do not have good demand information:
 - Holding excess stock → increased prices
 - Stockouts → sub-optimal treatment for patients

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



Treatment centers upload stock data, to identify which products are not available

Buttons for stock management:

- Add New Medicine
- Add New Approved Medicine
- Upload Stock List
- Download Stock Template
- Download My Last Stock
- Upload out of Stock List
- Download out of Stock List
- Download out of Stock Template

Medicines In Stock

Show 10 entries

Search:

Update	Delete	Details	Generic Name	Form	Strength	Strength Unit	Brand Name	Manufacturer	SRA Approving Body
Update	Delete	Show Details	Bleomycin sulfate	vial	15000	IU	BLEO 15K	Amneal Pharma Australia Pty Ltd	Approved

Medicines Out Of Stock

Show 10 entries

Search:

Update	Delete	Details	Generic Name	Form	Strength	Strength Unit	Brand Name	Manufacturer	SRA Approving Body
Update	Delete	Show Details	Anastrozole	Tablets	1	mg	Anastrozole	Accord Healthcare	Approved
Update	Delete	Show Details	Bicalutamide	Tablets	50	mg	Bicalutamide	Sandoz	Approved

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 10 entries

Search:

Update	Delete	Details	Generic Name	Form	Strength	Strength Unit	Brand Name	Manufacturer	SRA Approving Body
Update	Delete	Show Details	gemcitabine hydrochloride	vial	1	g	Gemcitabine	Accord Healthcare Limited	Approved
Update	Delete	Show Details	Goserelin Acetate	Syringe	3.6	mg	Zoladex	AstraZeneca UK Limited	Approved
Update	Delete	Show Details	Methotrexate	Tablets	2.5	mg	Methotrexate	Remedica Limited	Approved
Update	Delete	Show Details	Zoledronic acid	vial	0.8	mg/ml	Zoledro-Denk	Hameln Pharmaceuticals GmbH	Approved
Update	Delete	Show Details	Anastrozole	Tablets	1	mg	Arimidex	AstraZeneca UK Limited	Approved
Update	Delete	Show Details	Bicalutamide	Tablets	50	mg	Casodex	AstraZeneca UK Ltd	Approved

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

ChemoFinder Shopping List

1. Treatment Center



2. Select Medicine



3. Select Pharmacy



4. Shopping List

Your treatment center is KT hospital

For Patient ID: MK1234/18

x1 Bicalutamide Casodex Tablets 50 mg AstraZeneca UK Ltd

Name	Phone	Email	Address	City	Country	Open From	Open To	Expiry Date	Pack Size	Price/Pack
Strauss Pharmacy	15552698982	dan4ragnar@gmail.com	3605 HWY 25 N	Rochester	USA	16:30:00	21:30:00	31/07/2018	28	10900
KT Pharmacy	9908898989	fha13mlu@student.lu.se	Kampala	Kampala	Uganda	06:00:00	23:30:00	31/07/2018	28	10900

x1 Anastrozole Arimidex Tablets 1 mg AstraZeneca UK Limited

Name	Phone	Email	Address	City	Country	Open From	Open To	Expiry Date	Pack Size	Price/Pack
KT Pharmacy	9908898989	fha13mlu@student.lu.se	Kampala	Kampala	Uganda	06:00:00	23:30:00	31/07/2018	28	5000
Strauss Pharmacy	15552698982	dan4ragnar@gmail.com	3605 HWY 25 N	Rochester	USA	16:30:00	21:30:00	31/07/2018	28	5000

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

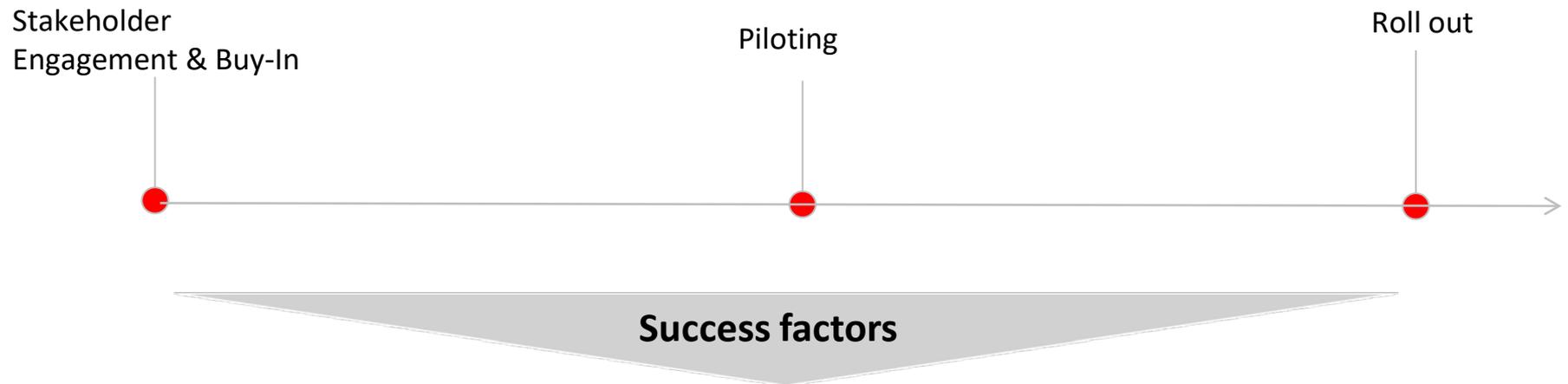


Patients

- 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



- 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.**



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6 hrs

The most common types of cancer that affect young people are leukemias, brain and lymphomas. Informaticians are using the latest treatment information about cancer. <https://www.cancer.gov>



Childhood Cancer
Information and understanding the cancers.

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National Cancer Institute
Images from the U.S. government's lead agency for cancer research. Please try our "Where's NCI?" quiz on Fridays. Privacy <http://1.usa.gov/1O5MzXG> www.cancer.gov

Followed by lolarc4607 and papabroun

#NCIFuture Childhood Emergency Exosomes Currents Immunoth... GIST

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EL CÁNCER TIPOS



El NCI es el líder nacional de investigación de cáncer



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Tweets **3,011** Following **234** Followers **3,674** Likes **51**

NCI en español @NCIespanol

Cuenta oficial del Inst. Nacional del Cáncer de EE. UU. Agencia federal dedicada de la investigación del cáncer. Política de privacidad: go.usa.gov/TIC9

Bethesda, MD

cancer.gov/espanol

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www.cancer.gov/espanol

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Hours 9:00 AM - 9:00 PM
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★★★★★

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-  **Infomed**
Medical & Health
-  **Endocrinología su consulta gratis**
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NCI en español @NCIespanol ·  · 

Los tipos más comunes de cáncer. #infomas. Más información aquí: cancer.gov/Espanol

Translate Tweet



Elisabet Tuama, Mardenti Osgu, Gus Sims and 16 others like this.

11 Shares

Instituto Nacional del Cáncer de EE. UU.

September 24 at 10:01 AM · 

Hoy, el Instituto Nacional del Cáncer publicó su plan anual y la propuesta de presupuesto para el año fiscal 2020. Aprenda cómo el NCI está invirtiendo en el futuro de la investigación del cáncer: <https://go.usa.gov/xPYRH>

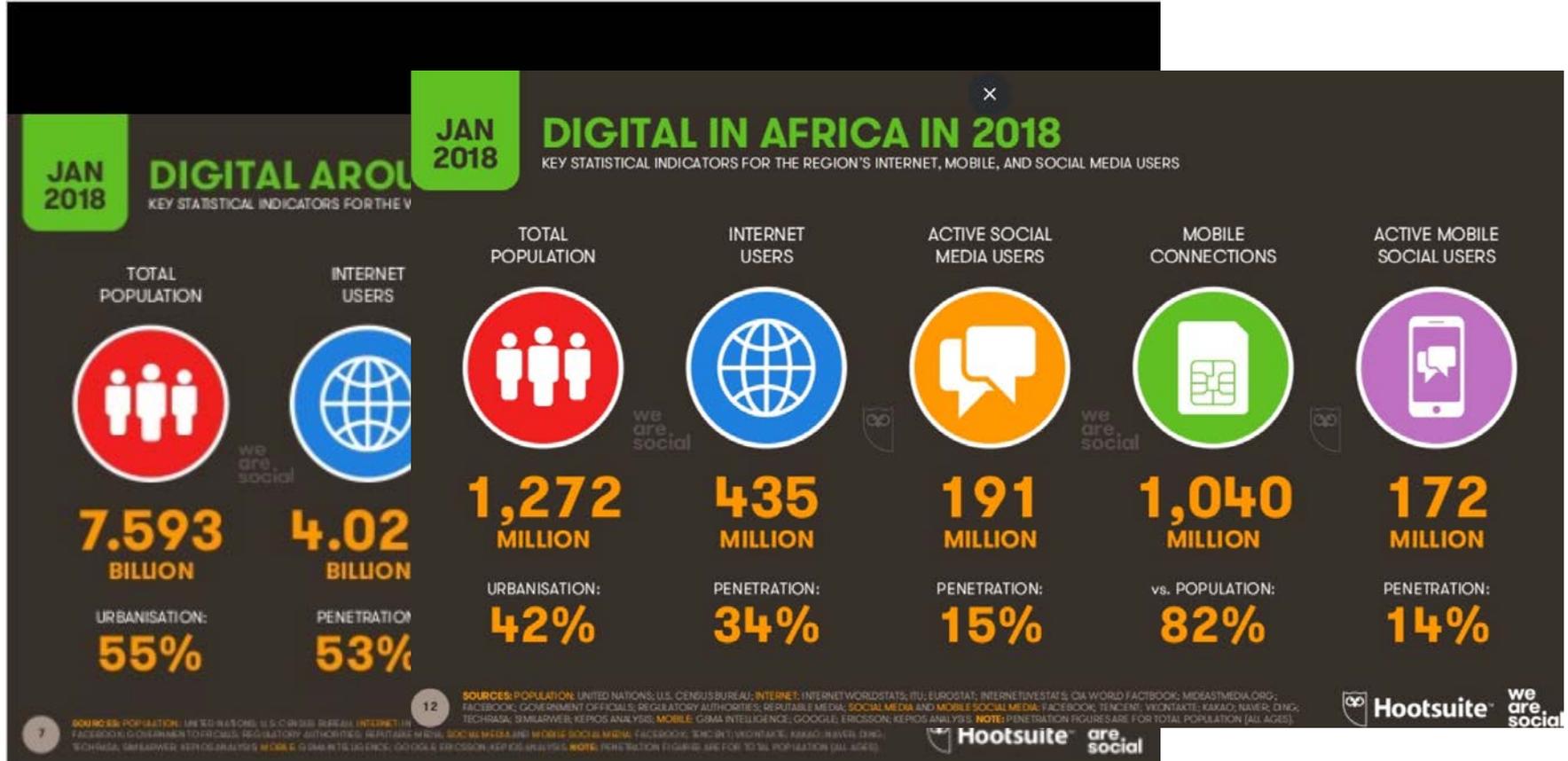


Cánceres infantiles

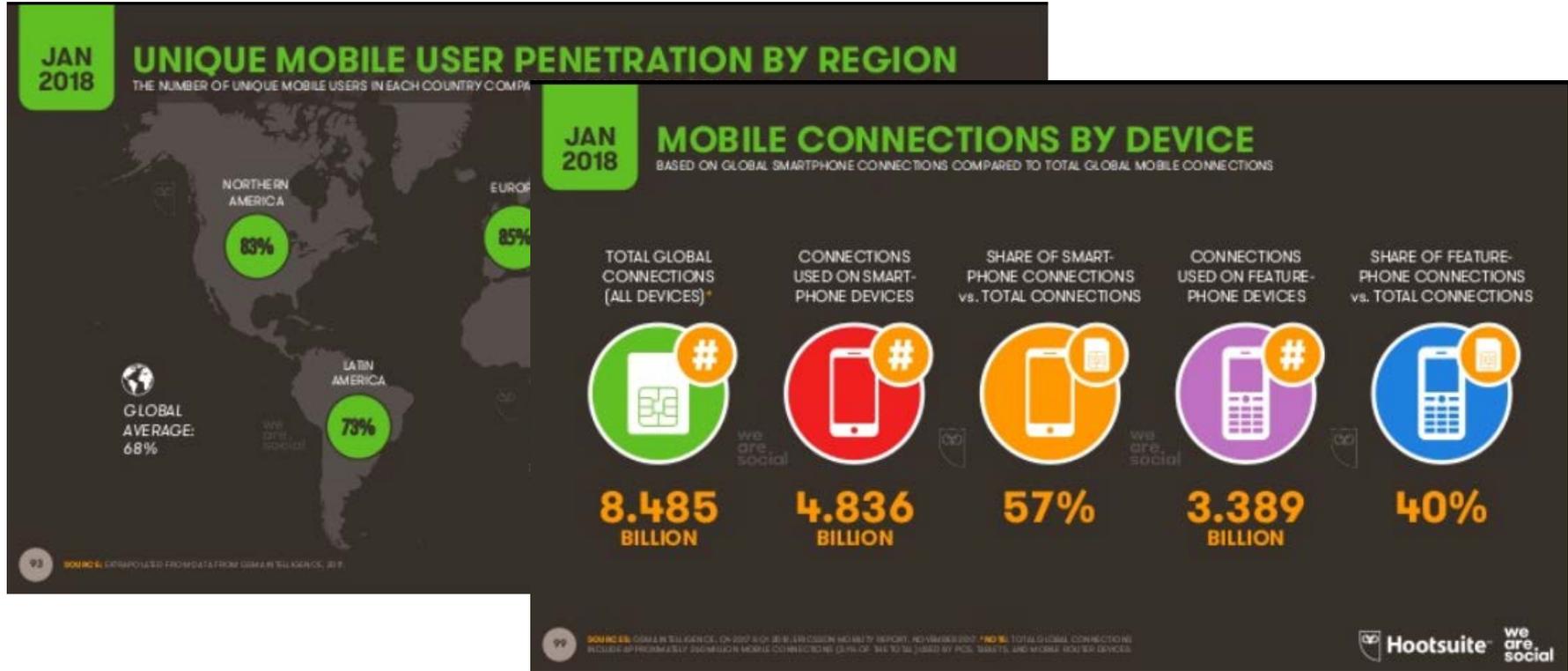
Información y recursos para responder a las preguntas básicas de los niños.

Información para niños y sus familias sobre las subvenciones y el personal del NCI.

The World is Increasingly Digital, Mobile, & Connected



The World is Increasingly Digital, Mobile, & Connected



International Audiences Find Us – On Google

Search results		GOOGLE-INDIA	AR ⁱ	DR ⁱ	UR ⁱ	Backlinks ⁱ	Domains ⁱ	
Search results ⁱ	GO	Search results ⁱ	GOOGLE-MALAYSIA	AR ⁱ	DR ⁱ	UR ⁱ	Backlinks ⁱ	Domains ⁱ
▶ 1 adword top		1 Treatment Options for Cervical Cancer https://www.cancer.org/cancer/cervical-cancer/treating/by-stage.html	1 Treatment Options for Cervical Cancer, by Stage https://www.cancer.org/cancer/cervical-cancer/treating/by-stage.html	878	90	28	168	39
1 Treatment Options for Cervical Cancer https://www.cancer.org/cancer/cervical-cancer/treating/by-stage.html		2 Treating Cervical Cancer - American Cancer Society https://www.cancer.org/cancer/cervical-cancer/treating.html	2 Treating Cervical Cancer - American Cancer Society https://www.cancer.org/cancer/cervical-cancer/treating.html	878	90	25	43	28
2 Treating Cervical Cancer - American Cancer Society https://www.cancer.org/cancer/cervical-cancer/treating.html		3 Cervical Cancer Treatment (PDQ®)—Patient Version - ... https://www.cancer.gov/types/cervical/patient/cervical-treatment-pdq	3 Cervical Cancer Treatment (PDQ®)—Patient Version - ... https://www.cancer.gov/types/cervical/patient/cervical-treatment-pdq	1.2K	90	43	6,431	379
3 Cervical Cancer: Treatment Options https://www.cancer.net/cancer-types/cervical-cancer/treatment		4 Cervical Cancer: Causes, Symptoms, Diagnosis, Treatment ... https://www.webmd.com/cancer/cervical-cancer/cervical-cancer	4 Cervical Cancer: Causes, Symptoms, Diagnosis, Treatment ... https://www.webmd.com/cancer/cervical-cancer/cervical-cancer	262	92	42	1,086	376
4 Cervical Cancer: Causes, Symptoms, Diagnosis, Treatment ... https://www.webmd.com/cancer/cervical-cancer/cervical-cancer		5 Cervical Cancer Symptoms & Signs CTCA - Cancer ... https://www.cancercenter.com/cervical-cancer/symptoms/	5 Cervical Cancer Symptoms & Signs CTCA - Cancer ... https://www.cancercenter.com/cervical-cancer/symptoms/	33.1K	75	27	67	46
5 Cervical Cancer Treatment (PDQ®) https://www.cancer.gov/types/cervical/patient/cervical-treatment-pdq		6 Patient education: Cervical cancer treatment; early-stage cancer beyond the basics ... https://www.uptodate.com/contents/cervical-cancer-treatment-early-stage-cancer-beyond-the-basics	6 Patient education: Cervical cancer treatment; early-stage cancer beyond the basics ... https://www.uptodate.com/contents/cervical-cancer-treatment-early-stage-cancer-beyond-the-basics	7.8K	82	16	11	7
6 Patient education: Cervical cancer treatment; early-stage cancer beyond the basics ... https://www.uptodate.com/contents/cervical-cancer-treatment-early-stage-cancer-beyond-the-basics		7 Treatment for cervical cancer - Cancer Council Victoria https://www.cancervic.org.au/cancer-information/cancer-types/cancer_types/cervical_cancer/treatment_for_cervical_cancer.html	7 Treatment for cervical cancer - Cancer Council Victoria https://www.cancervic.org.au/cancer-information/cancer-types/cancer_types/cervical_cancer/treatment_for_cervical_cancer.html	64.6K	72	16	9	3
7 Cervical Cancer Treatment & Management: Approach ... https://www.cancervic.org.au/cancer-types/cancer_types/cervical_cancer/treatment_for_cervical_cancer.html		8 Cervical cancer - Treatment - NHS https://www.nhs.uk/conditions/cervical-cancer/treatment/	8 Cervical cancer - Treatment - NHS https://www.nhs.uk/conditions/cervical-cancer/treatment/	569	91	24	3,452	638
8 Treatment for cervical cancer - Cancer Council Victoria https://www.cancervic.org.au/cancer-types/cancer_types/cervical_cancer/treatment_for_cervical_cancer.html		9 Cervical cancer: Symptoms, causes, stages, and treatment https://www.medicalnewstoday.com/articles/159821.php	9 Cervical cancer: Symptoms, causes, stages, and treatment https://www.medicalnewstoday.com/articles/159821.php	1.5K	90	36	518	121
9 Cervical cancer - Diagnosis and treatment https://www.mayoclinic.org/diseases-conditions/cervical-cancer/symptoms-causes/syc20051177		10 Cervical Cancer Treatment & Management: Approach ... https://www.uptodate.com/contents/cervical-cancer-treatment-early-stage-cancer-beyond-the-basics	10 Cervical Cancer Treatment & Management: Approach ... https://www.uptodate.com/contents/cervical-cancer-treatment-early-stage-cancer-beyond-the-basics	1.4K	90	17	16	8
10 Cervical cancer - Treatment - NHS https://www.nhs.uk/conditions/cervical-cancer/treatment/								

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

International Audiences Find Us – On Facebook

The screenshot shows a Facebook Messenger chat interface. At the top, there are two tabs for conversations, both labeled 'Unassigned'. The main chat area shows a conversation with a contact named 'Marcos'. The messages are as follows:

- 1:31** (User): Hi. I'm f TREATI CANCE
- 1:31** (User): Bom dia
- 1:31** (User): No Brasil, é possível fazer o exame TAYLOR X ?
- 1:30** (AI Assistant): Marcos Thank you for messaging NCI. Our Contact Center is currently closed. If your message requires a response, we will reply as quickly as possible the next business day.
- 1:30** (AI Assistant): Hi [User], We hope you will understand that we are only able to respond to questions in English and Spanish. If you would like, you are welcome to translate your question and contact us again. We are sorry for any inconvenience. Take care.
- 1:30** (User): Excuse me, I understood, I would like to know if here in Brazil have how to take the TAYLOR X exam?
- 1:30** (AI Assistant): 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://icisg.org/membership/membership-list/>, <http://www.uicc.org/membership>. Information about the TAILORx Breast Cancer Trial can be found here: <https://www.cancer.gov/types/breast/research/tailorx>. Take care.

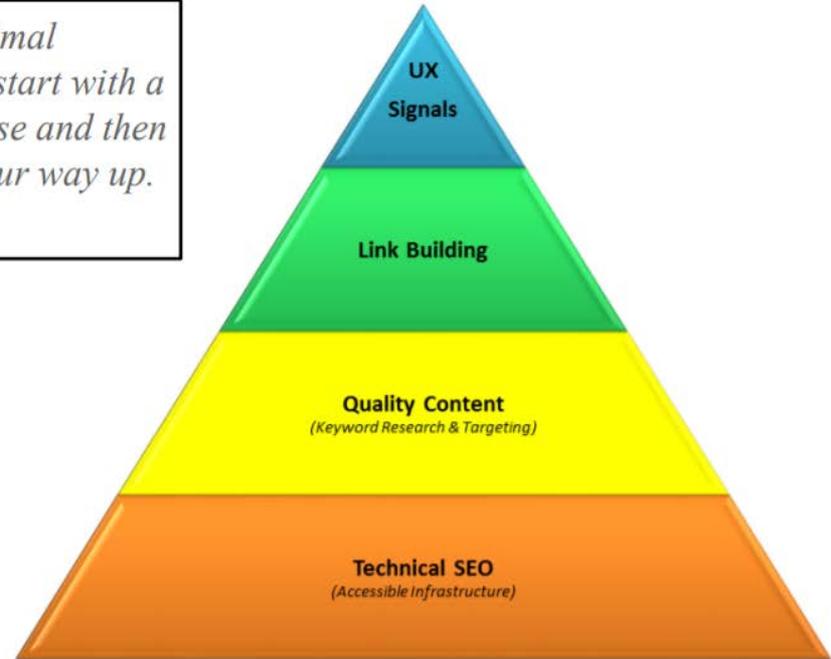
On the right side of the chat, there is a profile card for 'Daniel Kenton Trautvetter' with a 'View Profile' link. Below the profile card, there are sections for 'About' (Local time 4:06 PM, Works at [redacted], From São Paulo, Brazil), 'Labels' (Manage Labels), and 'Your Notes' (Add Notes).

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

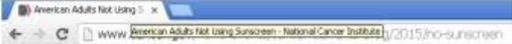
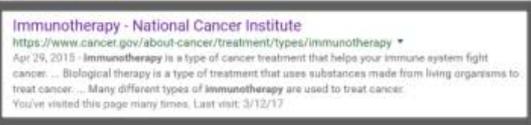
For optimal results, start with a solid base and then work your way up.



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

Field	Character Limits	Definition, Guidelines & Use on Cancer.gov	SEO Importance
Browser Title (aka Title Tag)	50-60	<ul style="list-style-type: none"> Displayed as: (1) the clickable headline in search results & (2) the Browser Title Place primary keyword toward beginning of the tag Should be unique and descriptive Example:  	<ul style="list-style-type: none"> High ranking signal. The most important field for SEO after the page content itself! Google only displays about 50-60 characters. After that, it will be truncated.
Page Title (aka H1)	75	<ul style="list-style-type: none"> Title for the content of the page – receives the H1 heading tag. Should be unique and descriptive Primary keyword should be placed toward beginning 	<ul style="list-style-type: none"> High ranking signal.
Subtitles (aka H2s)		<ul style="list-style-type: none"> Subtitles on the page – receive the H2 heading tag. Use primary keyword in one or two subtitles 	<ul style="list-style-type: none"> Medium ranking signal.
Meta Description	<ul style="list-style-type: none"> Varies. Most important information should be in the first 160 characters. Don't exceed 300 characters. 	<ul style="list-style-type: none"> Google displays this text as the description on their search results pages. Also displays in cancer.gov search results. Must include primary keyword in the beginning of the first sentence! Used as succinct advertisements/teasers to entice searchers to click on your page! Should be compelling and include a call to action like "Learn more about..." or "Get more information on..." Descriptive & accurate so that the user doesn't hit the "Back" button Must be unique to that page Example:  	<ul style="list-style-type: none"> Directly impacts click-through rates (# of people clicking on the headline in the search results page), which is a high ranking signal. 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 & click-through rates.
Anchor Text		<ul style="list-style-type: none"> Visible, clickable text in a hyperlink. It is oftentimes blue and underlined. Should be succinct and relevant to the target page (the page it's linking to) Primary keyword for the target page should be in the Anchor Text Exact-match: the anchor text can be just the primary keyword Phrase-match: the anchor text can include the primary keyword in a longer string of text Avoid generic words or phrases like "click here" and "learn more." Example:  <p>You can find more information in the 508 compliance section of this guide</p>	<ul style="list-style-type: none"> Medium ranking signal. Help search engines determine what the "linked-to-page" is about While we often can't control how other sites link to ours, we can make sure that our internal anchor text is done properly.



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www.cancer.gov

www.cancer.gov/espanol

African Cancer Coalition/NCCN Harmonized Cancer Treatment Guidelines for Sub-Saharan Africa

Introduction and overview

Nixon Niyonzima – Uganda Cancer Institute

Background

- 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

- HAR** Adult Cancer Pain
 - HAR** Breast Cancer
 - HAR** Cervical Cancer
 - HAR** Chronic Lymphocytic Leukemia/Small Lymphocytic Lymphoma
 - HAR** Kaposi Sarcoma
 - HAR** Non-Hodgkin's Lymphomas
 - HAR** B-cell Lymphomas
 - HAR** Palliative Care
 - HAR** Prostate Cancer
-

Guidelines

Completed 2017	In preparation 2018	
B-cell lymphomas	Antiemesis	Bladder cancer
Breast cancer	Colon cancer	Kidney cancer
Cervical cancer	Esophageal cancer	Liver cancer
Kaposi sarcoma	Gastric cancer	Lung cancer
Pain treatment	Head/neck cancers	Ovarian cancer
Palliative care	Myeloid growth factors	Pancreatic cancer
Prostate cancer	Rectal cancer	Uterine cancer
Chronic lymphocytic leukaemia/ small lymphocytic lymphoma	Survivorship	Gestational trophoblastic neoplasms

Together, these guidelines will cover 82% of estimated cancer incidence in Sub-Saharan Africa

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.

Principles of care

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

THE NCCN HARMONIZED GUIDELINES™ FOR SUB-SAHARAN AFRICA ARE REPRESENTED AS FOLLOWS:

Black Text: Generally available standard of care

Gray Text: Highly advanced/optimal care that may be costly, technically challenging, and/or have a lesser impact on oncologic outcome

Blue Text: Regional options that may be considered when availability precludes general standard of care

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

PREOPERATIVE SYSTEMIC THERAPY FOR INOPERABLE OR LOCALLY ADVANCED BREAST CANCER (NON-INFLAMMATORY): WORKUP

CLINICAL STAGE

WORKUP

<p>Stage IIIA T0, N2, M0 T1, N2, M0 T2, N2, M0 T3, N2, M0</p> <p>Stage IIIA patients with T3, N1, M0 disease, see BINV-1</p>	<ul style="list-style-type: none"> • History and physical exam • Diagnostic bilateral mammogram; ultrasound as necessary • Chest x-ray and ultrasound • Pathology review^a • Determination of tumor ER/PR status and HER2 status^{b,*} <ul style="list-style-type: none"> • Genetic counseling if patient is high risk for hereditary breast cancer^{c,**} • Breast MRI^d (optional), with special consideration for mammographically occult tumors • Fertility counseling if premenopausal^e • Assess for distress^f
<p>Stage IIIB T4, N0, M0 T4, N1, M0 T4, N2, M0</p>	<p>Additional studies consider:^g</p> <ul style="list-style-type: none"> • 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 <ul style="list-style-type: none"> • Bone scan or sodium fluoride PET/CT^h (category 2B) • FDG PET/CT^{i,j} (optional)
<p>Stage IIIC Any T, N3, M0</p>	

[See Preoperative Systemic Therapy For Inoperable or Locally Advanced Breast Cancer \(Non-Inflammatory\) \(BINV-15\)](#)

* If HER2 status unknown, follow the negative path.

**At a basic level, have a discussion with patient and family members.

^aThe panel endorses the College of American Pathologists Protocol for pathology reporting for all invasive and noninvasive carcinomas of the breast. <http://www.cap.org>.

^bSee Principles of HER2 Testing (BINV-A).

^cSee NCCN Guidelines for Genetic/Familial High-Risk Assessment: Breast and Ovarian.

^dSee Principles of Dedicated Breast MRI Testing (BINV-B).

^eSee Fertility and Birth Control (BINV-C).

^fSee NCCN Guidelines for Distress Management.

^hIf FDG PET/CT is performed and clearly indicates bone metastasis, on both the PET and CT component, bone scan or sodium fluoride PET/CT may not be needed.

ⁱFDG PET/CT can be performed at the same time as diagnostic CT. The use of PET or PET/CT is not indicated in the staging of clinical stage I, II, or operable III breast cancer. FDG PET/CT is most helpful in situations where standard staging studies are equivocal or suspicious, especially in the setting of locally advanced or metastatic disease.

^jFDG PET/CT may also be helpful in identifying unsuspected regional nodal disease and/or distant metastases in locally advanced breast cancer when used in addition to standard staging studies.

Note: This is the NCCN Harmonized Guidelines™ for Sub-Saharan Africa. For definitions, see page DEF-1.

Note: 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.

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

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