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African Access Initiative Annual Report

#### Dear Friends of AAI,

Without action, cancer mortality in Africa is expected to double by 2040. With this growing cancer crisis in mind, BIO Ventures for Global Health (BVGH) launched the African Access Initiative (AAI) in the summer of 2017. Since then, we have seen incredible progress toward our goals of establishing sustainable access to oncology medicines and technologies; strengthening healthcare infrastructure; building oncology capacity; and addressing the cancer data gap in Africa through clinical trials. AAI now includes 40 partner hospitals across our member countries: Cameroon, Côte d'Ivoire, Kenya, Nigeria, Rwanda, and Senegal.

In a little over two years, BVGH is already impacting the African cancer landscape. We have collected data with our hospital needs assessments, listened to our country partners, mapped country-wide healthcare systems, and organized and implemented programs to address identified needs. Sustainable access to quality, affordable cancer drugs is a universal priority of our member countries. As part of AAI in Nigeria, international pharmaceutical companies have offered their life-saving cancer drugs at affordable prices. Eight hospitals in northern Nigeria will be the first hospitals to purchase cancer medicines through AAI. Beyond Nigeria, BVGH is pushing to make these same medicines available in our other member countries.

Enabled by our sponsors — Takeda Pharmaceutical Co., Ltd., Pfizer, Inc., and Faber Daeufer & Itrato PC — and a global network of strategic partners, we have trained hundreds of medical professionals, improved the performance and safety of laboratories, and matched AAI hospitals with resources, mentors, and funding opportunities. Our programs support African medical professionals — who touch the lives of thousands of patients every year across the spectrum of cancer care — from detection and diagnosis, to treatment and research.

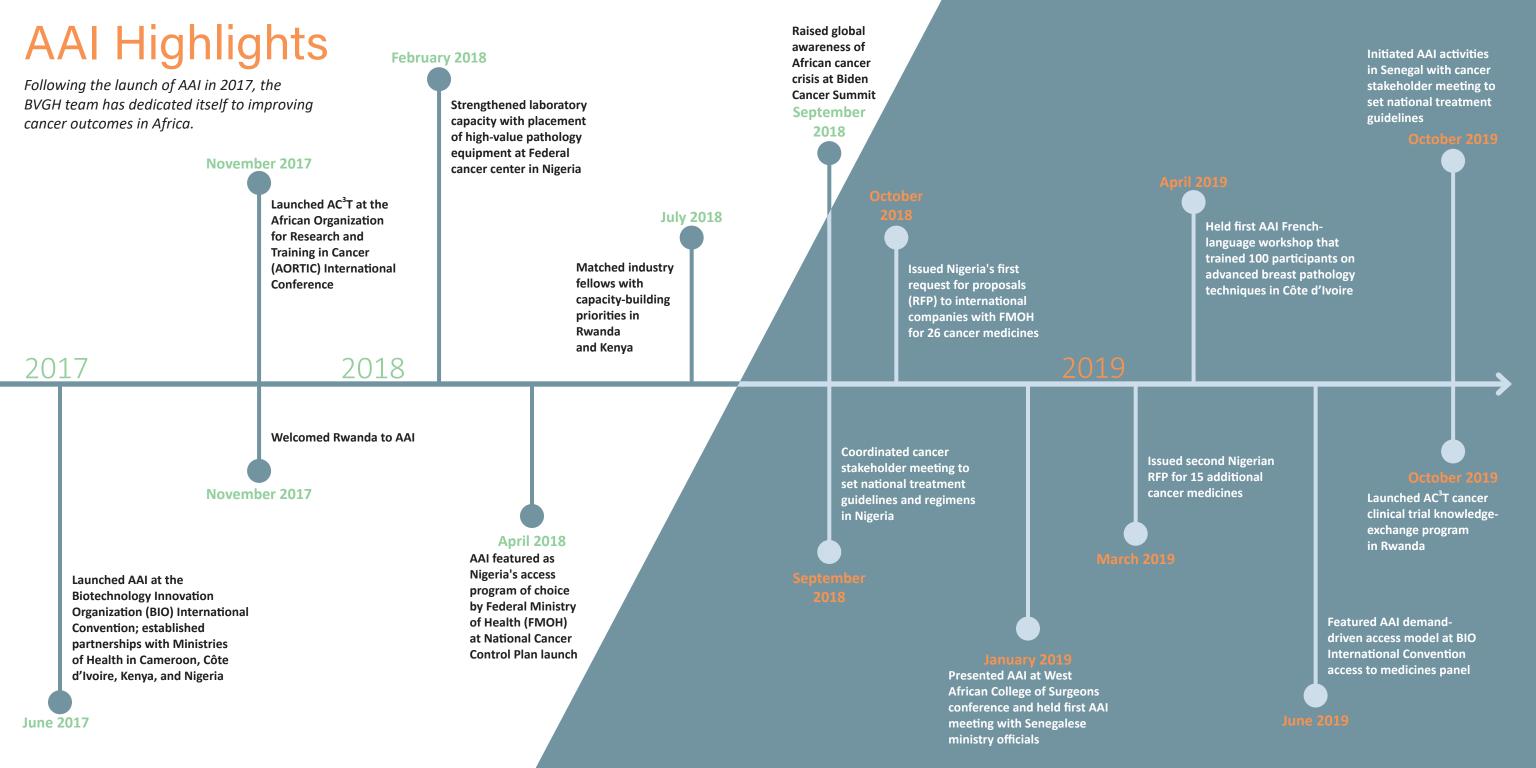
Through the African Consortium for Cancer Clinical Trials (AC<sup>3</sup>T), we are evaluating cancer hospitals' clinical trial capacities and promoting these capabilities to an international network of trial sponsors. Our bold vision is to catalyze a community of sites in sub-Saharan Africa that can conduct high-quality cancer clinical trials.

This report describes how AAI is disrupting the cancer crisis in Africa through its sustainable approach and network of partners.

Sincerely,

Jennifer Dent

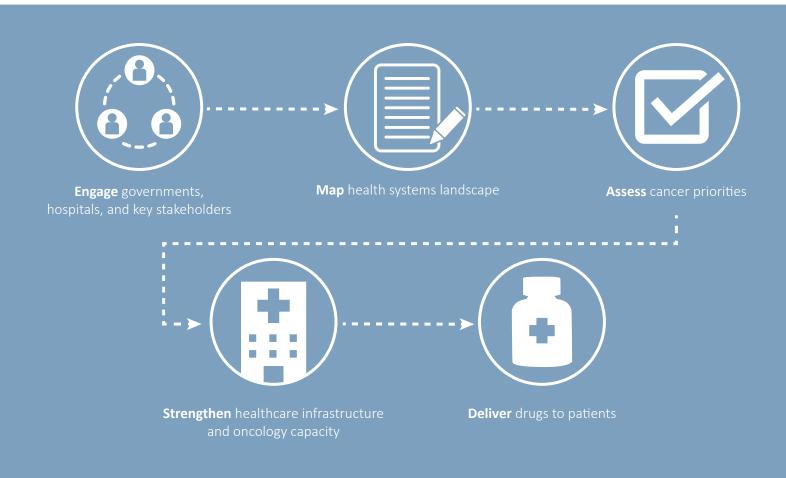
President & CEO, BVGH





## The AAI Approach

BVGH launched AAI in June 2017 as a public-private partnership that targets the growing cancer crisis in Africa. AAI is focused on (1) establishing sustainable access to oncology medicines and technologies, (2) strengthening healthcare infrastructure, (3) building clinical oncology capacity, and (4) addressing the cancer data gap in Africa through clinical trials.





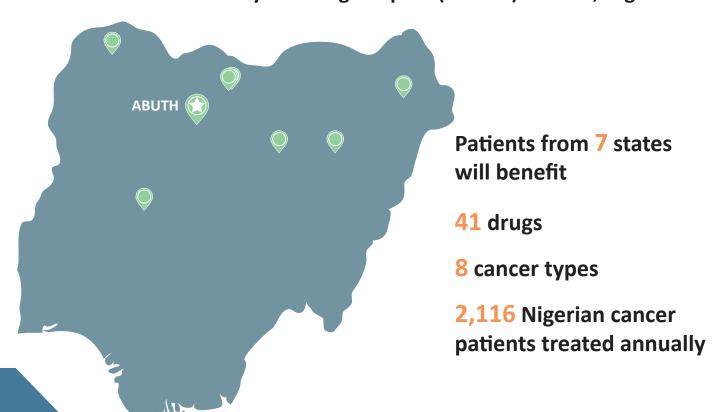
BVGH with ABUTH oncology leadership team, Vice Chancellor, and Chief Medical Director

"Cost of treatment is an enormous barrier to patients in northern Nigeria and beyond. Our partnership with BVGH has allowed us to mobilize investments from many sectors to purchase highly-needed medicines for our patients. Most importantly, BVGH's drug access model will be sustainable for our hospital and for Nigeria as a whole."

— Dr. Faruk Mohammed, Cancer Scientsist at ABUTH

## AAI Impact - Nigeria

Responsible and sustainable drug access program in northern Nigeria, led by the Ahmadu Bello University Teaching Hospital (ABUTH) in Zaria, Nigeria



#### Making Sustainable Cancer Drug Access a Reality

Nigeria has the highest number of annual deaths due to cancer of any country in sub-Saharan Africa. As part of its national control efforts, Nigeria joined AAI in 2017 with the goal to gain sustainable access to high-quality, essential cancer medicines. Following a BVGH-coordinated cancer stakeholder meeting in 2018, BVGH and the FMOH issued the country's first RFP to international pharmaceutical companies. Companies responded with deep discounts and commitments to making their cancer medicines available to Nigerian patients. The chemotherapy drugs, hormonal therapies, and targeted therapies cover breast, cervical, colorectal, head and neck, hematological, pediatric, and prostate cancers.



- Multi-sector funding from federal government, northern Nigerian governors, emirates, and philanthropists
  - Fiscal oversight by the Central Bank of Nigeria
    - Capacity-building activities planned to coincide with drug access



## Professor Tajudeen Olasinde at a BVGH-coordinated side meeting at the 2019 AORTIC International Conference in Maputo, Mozambique.

### Forging Connections to Drive Access

"Cancer is real in Africa. There are certain cancers whose incidence has been increasing on the continent, such as cervical cancer. Cervical cancer is preventable, but it affects those of low socioeconomic status. Why? The majority of African patients cannot afford the cost of cancer drugs. BVGH is responding to this challenge by bringing African governments, like Nigeria, and hospitals together with pharmaceutical companies to provide affordable access to life-saving medicines."

 Professor Tajudeen Olasinde, Professor of Radiation and Clinical Oncology at ABUTH

## AAI Impact - Côte d'Ivoire

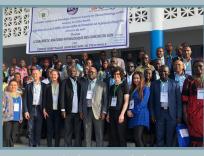
#### Côte d'Ivoire AAI Program Partners

- Abidjan, Côte d'Ivoire: Ministry of Health and Public Hygiene; National Cancer Control Program; Ivorian Society of Pathology Alexandria, USA: American Society of Clinical Oncology
- <u>Beirut, Lebanon</u>: Balsam, The Lebanese Center for Palliative Care
- <u>Boston, USA</u>: Men of African Descent and Carcinoma of the Prostate Network
- <u>Chicago, USA</u>: American Society for Clinical Pathology (ASCP)
- <u>Cleveland, USA</u>: Cleveland Clinic Taussig Cancer Center
- Dakar, Senegal: Cheikh Anta Diop University
- <u>Dar es Salaam, Tanzania</u>: Muhimbili University of Health and Allied Sciences
- <u>Denver, USA</u>: University of Colorado Medical Center
- London, UK: Guy's and St. Thomas' NHS Foundation Trust
- Montreal, Canada: University of Montreal;
   Maisonneuve-Rosemont Hospital
- Paris, France: Institut Curie
- Rabat, Morocco: National Oncology Institute
- <u>Seattle, USA</u>: PhenoPath Laboratories; Quest Diagnostics
- <u>Sharjah, UAE</u>: Ameera Fund, Friends of Cancer Patients

### BVGH's network of partner organizations spans the globe. In Côte d'Ivoire, BVGH has coordinated connections between Ivorian leaders and oncology healthcare professionals from more than 20 institutes across 17 countries. Denver Mauritania Senegal Burkina Faso Abidjan, Côte d'Ivoire Funding & Equipment Donation Workshop Participants Republic of Fellowship Destinations — Completed Program

#### Breast Pathology Workshop, April 2019

Breast cancer is the most common cancer among Ivorian women. In response to the need for better breast cancer patient diagnosis and outcomes, BVGH partnered with ASCP, Côte d'Ivoire's Ministry of Health and Public Hygiene, and the Ivorian Society of Pathology to organize a three-day pathology training workshop in Abidjan, Côte d'Ivoire. Three expert trainers from Montreal, Canada led the workshop sessions in French. The workshop trained participants on advanced pathology techniques and best practices in collecting samples, diagnosing and sub-typing breast cancers, and improving laboratory efficiency.



Breast Pathology Workshop participants in Abidjan

#### Breast Pathology Workshop by the Numbers

Dar es Salaam

---- Upcoming Program

AAI Programs 2018-2020

- 3 expert trainers from Montreal, Canada
- 10 francophone African countries represented
- **100** participants trained
- 13,000 breast cancer patients to benefit annually





### Spreading Awareness and Mobilizing Resources

"There is a tremendous need for pathology training in Côte d'Ivoire. Moreover, what we see in everyday practice is that the modern techniques of anatomic pathology are not well known and very few (immunohistochemistry) are available. AAI is helping us spread awareness and improve our ability to provide accurate and optimal diagnoses for cancer patients."

Professor Mohenou Diomande, Professor of Anatomic
 Pathology at the University of Abidjan and President of the Ivorian
 Society of Pathology



Professor Mohenou Diomande at the April 2019 Breast Pathology Workshop, coordinated by BVGH and supported by ASCP, held at the University Hospital Center of Treichville in Abidjan, Côte d'Ivoire.

### The Path to Lab Accreditation

Deaths due to cancer in Rwanda have doubled since 1990. With 50 times fewer pathologists per capita than the USA, it is no surprise diagnosis is one of the important factors influencing patient outcomes. The pathology laboratories at the University Teaching Hospital of Kigali (CHUK) have been working toward achieving laboratory accreditation through the World Health Organization (WHO) since 2011. To accelerate this important effort, BVGH coordinated the placement of industry fellows with pathology and laboratory management expertise; arranged for the integration and operationalization of critical laboratory equipment; facilitated professional accreditation testing; and arranged necessary laboratory support.



Pathologists reviewed materials at CHUK during BVGH-organized accreditation competition

"For us, accreditation means the recognition of CHUK as a pathology center of excellence.

A five-star score will facilitate future international partnerships, research, and resources to diagnose cancer patients in Rwanda."

Dr. Gervais Ntakirutimana,
 Head of CHUK Department
 of Pathology



#### **CHUK Lab Achievements Since Joining AAI**

- Received a **perfect score** on a pre-accreditation exam performed by South African accreditation body
- Improved its WHO pre-accreditation evaluation score from **1 to 3 stars** (out of 5)
- Decreased patient specimen turnaround time from 4 weeks to 10 days

## AAI Impact - Rwanda

#### **BVGH's Partnership with ASCP in Rwanda**

BVGH and ASCP are working together to assist Rwanda's pathologists through a range of programs:

- Lab capacity building training led by American doctors
- Equipment placement, repair, and training
- External quality assurance program
- Telepathology

ASCP Fellow Dr.
Kelsey McHugh
trained Rwandan
pathology residents
on the country's
first cryostats



"Through my fellowship, I had the opportunity to shape and educate burgeoning Rwandan pathologists who will then go on to have productive decades-long careers for their country and their fellow citizens." — Dr. Kelsey McHugh, ASCP Fellow and Cytopathologist at the Cleveland Clinic

#### Women's Cancer Education, Screening, and Treatment

In response to cancer's ongoing threat to the health of Rwanda's women, Dr. Diane Gashumba, Rwanda's Minister of Health, asked BVGH to organize and implement a multi-stakeholder education, screening, and treatment (EST) initiative focused on women's cancers. BVGH and the Ministry of Health will jointly conduct EST programs in five Rwandan districts. Each district EST program will span three years and screen as many as 35,000 eligible women. This women's cancer initiative has been made possible by the generous in-kind contributions from GardaWorld Corporation and through funding from Johnson & Johnson Global Public Health and Faber Daeufer & Itrato PC.

In each Rwandan district, BVGH and the Ministry of Health will:

- Coordinate cervical cancer screening and treatment equipment placement at district health centers
- Organize ten-day trainings for community health professionals
- Develop and launch media campaigns to raise awareness and promote EST events
- Prepare and produce educational materials for breast and cervical cancer patients
- Support district hospitals in providing cervical cancer screening, breast health services, and triage for women with advanced cervical lesions and breast abnormalities



## Strengthening Healthcare Together

"Rwanda was one of the early adopters of the human papillomavirus (HPV) vaccine, and today, 95% of young girls have been vaccinated. We have two cancer centers in Burera district, Northern province and the Rwandan Military Hospital in Kigali. There is now a major radiotherapy center completed, and we have healthcare providers across the districts trained on basic screening of cervical cancer. Yet, we still have a long way to go to achieve our goals, and BVGH is a valued partner to help us get there."

— Dr. Diane Gashumba, Honorable Minister of Health of Rwanda

Honorable Minister of Health Dr. Diane Gashumba with BVGH President & CEO Jennifer Dent at the ceremonial launch of AAI in Rwanda.

## AAI Impact - Kenya



#### **Industry Fellowships**

Through collaboration with Kenyan government and hospital leaders, BVGH's AAI activities in Kenya have advanced the Ministry of Health's vision for an efficient and effective network of laboratories and hospitals to improve cancer diagnosis — and thereby patient outcomes.

BVGH coordinated three-month fellowships for six international experts who:

- Assessed and advised on the processes for specimen handling and transport, diagnostic reporting, and guideline development and implementation
- Trained 25 histo-technologists, operating theater nurses, and surgeons from four Kenyan counties on cancer specimen collection and handling, research, and laboratory processes
- Conducted workshop to train more than 30 clinicians and students from two Kenyan hospitals on phase III clinical trial management and grantwriting skills



Dr. Mary Nyangasi represented Kenya and AAI at the BIO International Convention

"AAI's model — using the needs assessment at partner hospitals and finding out what the issues and gaps are in those facilities — aligns well with our strategy. Once BVGH has identified gaps, they have a targeted approach to building capacity, and this is important for cancer control in Kenya."

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

## AAI Impact - Senegal

### **Expanding Access to Medicines for Women's Cancers**

Senegal officially joined AAI as the 6<sup>th</sup> member country in October 2019. Representatives from BVGH traveled to Dakar for a launch ceremony with Ministry of Health and Social Action (MSAS) officials. BVGH then held a meeting of 35 cancer stakeholders from across the country, including oncologists, pathologists, surgeons, and officials from MSAS, to set national treatment guidelines. Following this meeting, BVGH launched an access program at the national level for priority cancer drugs covering breast and cervical cancers. BVGH's access program aligns with Senegal's National Cancer Control Plan and supports MSAS's program to completely subsidize the cost of standard treatments for breast, cervical, and other women's cancers.

"The Ministry of Health and Social Action is taking bold steps to address cancer in Senegal. BVGH shares our sense of urgency to improve cancer patient outcomes and deliver quality cancer medicines."

 Dr. Amadou Doucoure, Head of the Department of Disease Control at MSAS





BVGH President & CEO Jennifer Dent with pharmacy experts from Senegalese hospitals and MSAS at the BVGH- and MSAS-organized cancer stakeholder meeting at MSAS headquarters in Dakar, Senegal

### African Consortium for Cancer Clinical Trials

#### **Empowering African Scientists to Study Cancer in African Populations**

The progress made against cancer mortality in high-income countries can be attributed, in part, to advances in medicines emerging from clinical trials. Yet the vast majority of cancer clinical trials take place in North America or Europe with Caucasian patients. BVGH launched AC<sup>3</sup>T to foster and implement cancer clinical trials led by African investigators with African cancer patients. AC<sup>3</sup>T is a first-of-its-kind initiative building clinical trial capacity and addressing the cancer data gap in Africa. This program will increase access to prioritized cancer diagnostics, medicines, quality treatment and improve cancer patient outcomes.

Building on the foundation of AAI, AC<sup>3</sup>T has three pillars. BVGH will execute activities under each pillar to fill hospital competency gaps in clinical trial management and achieve the standards necessary for the conduct of cancer clinical studies.

#### Pillar I

Design and launch an online database that profiles African clinical trial sites





### Pillar II

Build capacity at sites that are nearly ready to conduct a clinical trial

#### Pillar III

Create a pool of funds to support investigator-initiated cancer feasibility studies in Africa



### **AC<sup>3</sup>T Program Accomplishments**

- Issued a request for interest to gather information on cancer clinical trials prioritized by African investigators and study funding requirements
- Collaborated with the Men of African Descent and Carcinoma of the Prostate Network to train investigators from AAI hospitals in Côte d'Ivoire and Rwanda in essential data collection, clinical trial administration, and research skills
- Developed, in consultation with experts, a comprehensive questionnaire (the AC<sup>3</sup>T Checklist) to evaluate and profile sites' clinical trial capabilities
- Created online platform to publicly showcase sites' profiles
- Obtained completed AC<sup>3</sup>T Checklists from 29 institutions across 15 countries with permission to publish

# Takeda Invests in AC<sup>3</sup>T to Build Cancer Clinical Trial Capacity in sub-Saharan Africa

BVGH and Takeda launched a new knowledge-exchange program focused on building clinical trial capacity in Rwanda. Takeda research and development employees will partner with Rwandan clinicians and researchers through customized virtual and on-site sessions to:

- Improve basic research capabilities
- Establish protocols to conduct clinical trials
- Connect hospital data to Rwanda's National Cancer Registry
- Analyze clinical data to produce new research questions

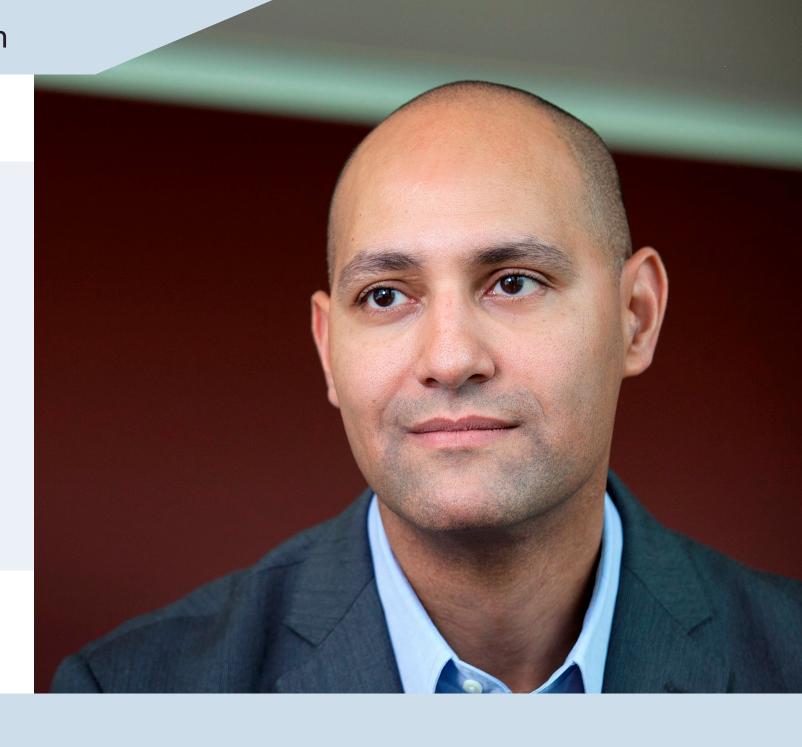


BVGH and Takeda in Kigali, Rwanda at the launch of the AC<sup>3</sup>T knowledge-exchange program

Improving Access and Supporting Data Generation

"Through our participation in AC<sup>3</sup>T, we are helping to build clinical trial capacity in sub-Saharan Africa, specifically around cancer, with the goals of improving access to medicines through patient participation and, importantly, supporting high-quality data generation needed to better guide the application of cancer treatments in African patients."

— Dr. Chris Reddick, Vice President of Global Patient & Scientific Affairs at Takeda Pharmaceutical Co., Ltd.



## People Are Talking About AAI



**Biden Cancer Summit:** "We are at an inflection point in the understanding and treatment of cancer and are starting to break down barriers and change the culture in ways that are needed to deliver what patients deserve – a cancer research and care system that puts saving lives above all else. The commitments we have received, including AAI, bring us closer to developing the right systems, the right culture to get us there." — Vice President Joe Biden

Nigeria Is Buying Radiotherapy Machines but Most Patients Cannot Afford Cancer Drugs: "The result of [BVGH's] Needs Assessments represent the first comprehensive dataset on cancer medication usage by Nigerian oncologists."





Patients of African Descent are Being Denied the Benefits of Cancer Breakthroughs. We're Changing That: "AC<sup>3</sup>T seeks not only to eliminate existing disparities in our current understanding of cancer but also close the growing cancer mortality gap."

A Sustainable Movement to Curb Cancer in Africa: "BVGH understands that prompt, coordinated responses by governments, private industry, and experts are critical to stemming the tide of the cancer epidemic and scaling the benefit of life-saving cancer medicines across the globe."

BIOtechNOW.



African Access Initiative: Improving Patient Outcomes in Africa: "Ultimately [BVGH's] measure of success in this program is seeing patients cured, seeing those success stories of patients being cured, and really changing the complete paradigm of cancer in Africa as it is today."

Seattle Nonprofit to Battle Cancer in Africa with Help from Biotech Industry: "The global health community has made important headway in tackling infectious diseases such as malaria in Africa, yet we are seeing an alarming rise in cancer and other non-communicable diseases."





**Things Have Turned Serious in Africa:** "By engaging leading biotechnology and pharmaceutical companies, AAI is working to make cancer drugs and technologies available, accessible, and affordable to patients in Africa."

How the African Access Initiative Plans to Mitigate Africa's Cancer Burden: "...AAI [is] a cancer-focused program that brings together oncology companies with African governments and hospitals to enhance healthcare capacity, foster cancer research, and increase the availability of life-saving cancer medicines."





**BVGH Conducts Needs Assessments on Cancer in 15 Hospitals:** "[AAI Partner Companies] are committed to ensuring that drugs and equipment provided are affordable and safe."