Exploring Cancer

Exploring the Role of Biology, Race, Class, and Socioeconomics

Live Lecture

Welcome to the
UNC Lineberger Cancer Network's
live webinar

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Exploring Cancer

Exploring the Role of Biology, Race, Class, and Socioeconomics

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www.exploringcancer.org

A collaboration between

NCCentral University | UNC Lineberger Comprehensive Cancer Center | North Carolina Agricultural and Technical State University

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Exploring the Role of Biology, Race, Class, and Socioeconomics

Fridays
11:00 - 11:50 AM EST/EDT

August 30
Welcome to Cancer(s) and Health Disparities 101 - The Introduction

September 6
Reassessing Tumor Biology through the Lens of African Ancestry and Health Equity

September 13
Global Cancer Health

September 27
ACCURE: A Systemic Approach to Eliminating Racial Disparities in Cancer Care and Beyond

October 4
Breast Cancer health disparities

November 1
Lung Cancer/Clinical Trial Enrollment

November 8
Precision medicine

November 15
International Collaborations to Improve Pharmacy-Driven Initiatives

November 22
Basic Science (3 dimension protein studies)

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Exploring Cancer

Exploring the Role of Biology, Race, Class, and Socioeconomics

November 15, 2024

International Collaborations to Improve Pharmacy-Driven Initiatives

Benyam Muluneh, PharmD

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Benyam Muluneh, PharmD

Dr. Benyam Muluneh is an assistant professor at UNC Eshelman School of Pharmacy. His ongoing research endeavors include: 1) Develop strategies to improve medication adherence in clinical practice; 2) Optimize tolerability and safety of chemotherapy in cancer patients; and 3) Promote chemotherapy access and affordability to underinsured and uninsured cancer patients in the United States and beyond.

He also teaches in the PharmD curriculum and has a passion for international health. He is the co-director of the UNC-Ethiopia Alliance and serves as a preceptor for one of the Global Pharmacy Scholar (GPS) experiences in Ethiopia.

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Professional Highlights

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Professional Highlights

3. Dr. Benyam Muluneh is an assistant professor at UNC Eshelman School of Pharmacy.

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Why I picked pharmacy…

Focused expertise

Many options after degree

Most accessible healthcare professional

275,000

530,000,000,000

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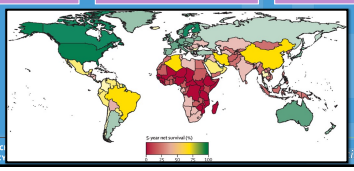
Why I picked cancer…

Novel drugs

Role for pharmacists

The patients!



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How to integrate global health into your career…

- Pursue post-graduation fellowship/training in global health
- Perhaps consider an MPH
- Search for full time positions (universities, public health agencies, abroad…)

- Once you have established your career in a clinical or industry setting, express to your employer of your global health interest
- Identify partners through professional organizations
- Over the long term, work to align your "day job" with your global health interests over time.

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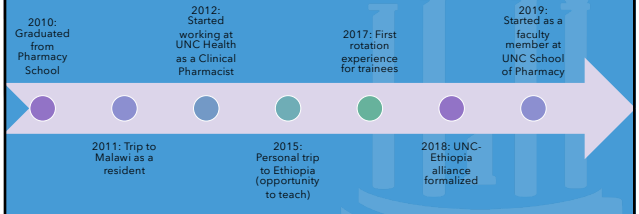
My Path…

Less straightforward



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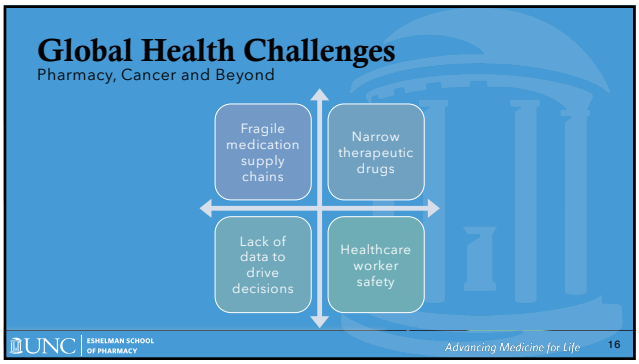
Global Health Challenges
Pharmacy, Cancer and Beyond
Fragile medication supply chains
Narrow therapeutic drugs
Lack of data to drive decisions
Healthcare worker safety
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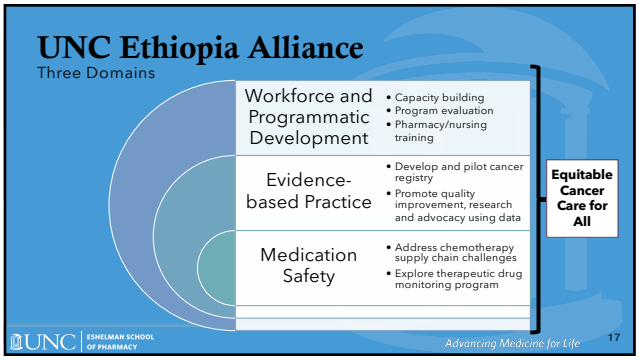
UNC Ethiopia Alliance
Three Domains
Workforce and Programmatic Development
• Capacity building
• Program evaluation
• Pharmacy/nursing training
Evidence-based Practice
• Develop and pilot cancer registry
• Promote quality improvement, research and advocacy using data
Medication Safety
• Address chemotherapy supply chain challenges
• Explore therapeutic drug monitoring program
Equitable Cancer Care for All
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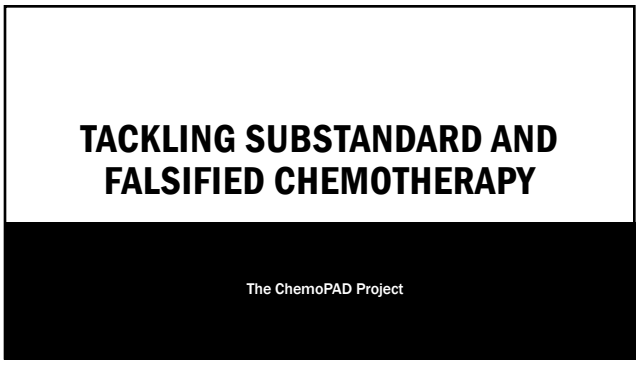
TACKLING SUBSTANDARD AND FALSIFIED CHEMOTHERAPY
The ChemoPAD Project

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TRENDS OF SUBSTANDARD AND FALSIFIED MEDICATIONS

- WHO states **10% of medications** in low- and middle-income (LMIC) countries are either substandard or falsified
- In 2017, WHO discovered that **33.6% of the anticancer drugs** and other drug classes to be substandard or falsified in 75 LMIC

An Example with SF Avastin (bevacizumab) in the United States

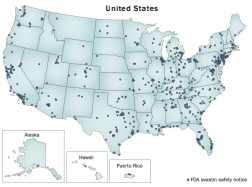

Figure 1 | Visual depiction of a total of 949 FDA safety notifications that were sent to 932 physicians and/or clinics in 795 *zip* codes from 2012 to 2013. These are depicted at the individual *zip*-code level.

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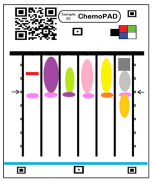
WHAT IS THE OVERALL GOAL FOR IMPLEMENTING CHEMOPAD?



- Designed to safeguard the public health in Sub-Saharan Africa
- Ensure quality chemotherapy medicines at the point-of-use in hospitals and cancer clinics.

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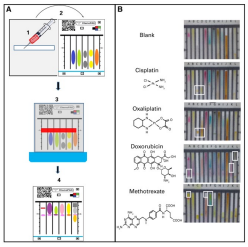
HOW DOES THE CHEMOPAD WORK?

Test card containing preloaded dry reagents

Step 1: Apply sample of chemotherapy to card
Step 2: Dip card in water for 3 minutes

Colors develop in 3 minutes



J Glob Oncol. 2018 Dec;4:1-10.

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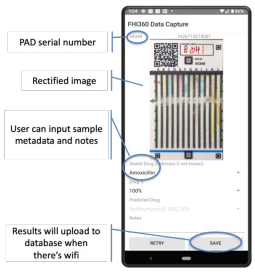
CHEMOPAD APP COMPATIBILITIES

VERIFY keeps track of samples through entire process—now integrated with PAD Reader app on IOS and Android



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CHEMOPAD BENEFITS

- Low-cost, easy-to-use, and effective technology
- Compatible with free mobile app to detect SF chemotherapy
- Provides a surveillance method to assess quality of the chemotherapy
- Promotes goal of ensuring safety in public health

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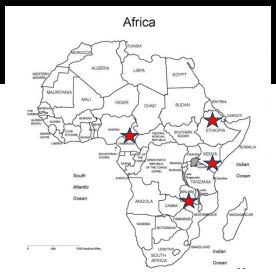
LOCATIONS FOR CHEMOPAD IMPLEMENTATION

- Malawi
- Kenya
- Cameroon
- Ethiopia



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Global to Local

- Community Centered Approaches
- Task Shifting and Training
- Culturally Trained Education
- Address Social Determinants of Health
- Resource Optimization

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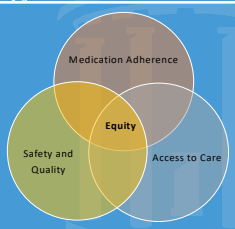
My Research Goals:
Optimize Chemotherapy Use in Clinical Practice

1. Develop strategies to improve medication adherence in clinical practice
2. Optimize tolerability and safety of chemotherapy in cancer patients
3. Promote access to safe and affordable chemotherapy to cancer patients in the United States and beyond



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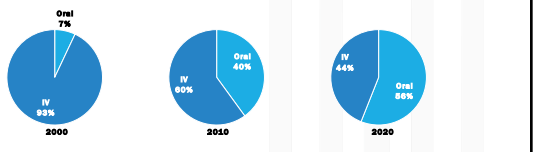
Background
FDA Chemotherapy Approvals Over Time



https://www.fda.gov/drugs/drug-approvals-and-databases/compilation-cder-new-molecular-entity-nme-drug-and-new-biologic-approvals

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Background

Oral anticancer agents (OAAs) revolutionized treatment of several malignancies by improving response and extending survival

However, this requires a high adherence rate >80-90%

In clinical trials, medication adherence is typically ≥90%

Adherence drops to ~40% in real-world, non-trial settings, resulting in suboptimal outcomes.

The American Society of Clinical Oncology recommends [a] adherence monitoring program, although design and implementation details are lacking.

We and others have designed and piloted adherence programs with some success.

Nonetheless, our program was not sustainable beyond the pilot or scalable to other clinics, similar to other adherence-focused programs.

One primary limitation of available adherence programs, including ours, is an attempt to reach every patient (low feasibility; low tailoring to different settings)

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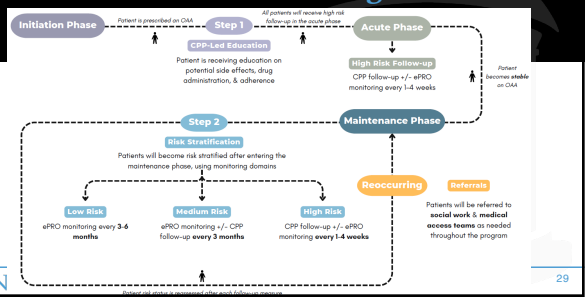
Medication Adherence Program



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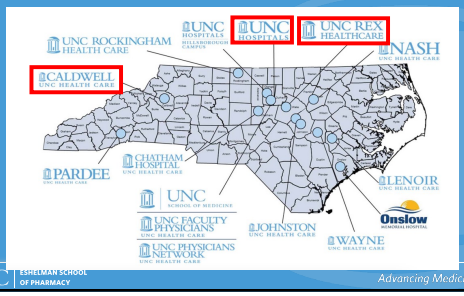
Cancer Care Equity



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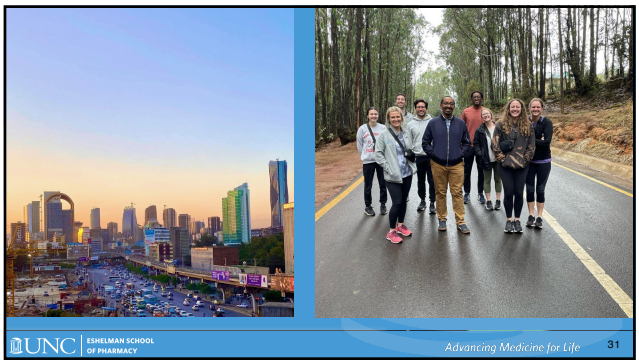
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Exploring Cancer

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Live Lecture

November 22

11:00 AM

Upcoming Live Webinar

Using Structural Biology to Guide the Development of Cancer Therapies

Chrystal Starbird, PhD

Assistant Professor

UNC Lineberger Comprehensive Cancer Center

UNC School of Medicine

University of North Carolina at Chapel Hill

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Exploring Cancer is a webinar series taught by cancer biologists, physicians, public health experts, and other cancer specialists from **NCCU**, **UNC-Chapel Hill**, and **NC A&T**.

We hope to see you next time!

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