Leveraging global collaborations for research, training and mentorship in Africa

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Algiers
Tunis
Casablanca
Oran
Constantine
TUNISIA
MOROCCO
Mediterranean Sea
Bechar
Tripoli
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EGYPT
Tamanrasset
Al Jawf
Aswan
Red Sea
MAURITANIA
MALI
NIGER
Faya-Largeau
Port Sudan
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Nema
Lombouctou
Agadez
CHAD
Khartoum
Asmara
Dakar
SENEGAL
Niamey
Zinder
Al Fashir
DJIBOUTI
THE GAMBIA
Bamako
BURKINA
N' Djamena
Djibouti
GUINEA BISSAU
GUINEA
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SOMALIA
Malabo
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Kisangani
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KENYA
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CONGO
Nairobi
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GABON
DEM. REP. OF CONGO
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Indian Ocean
Brazzaville
BURUNDI
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Kalemie
Zanzibar
South Atlantic Ocean
Kananga
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Luanda
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MALAWI
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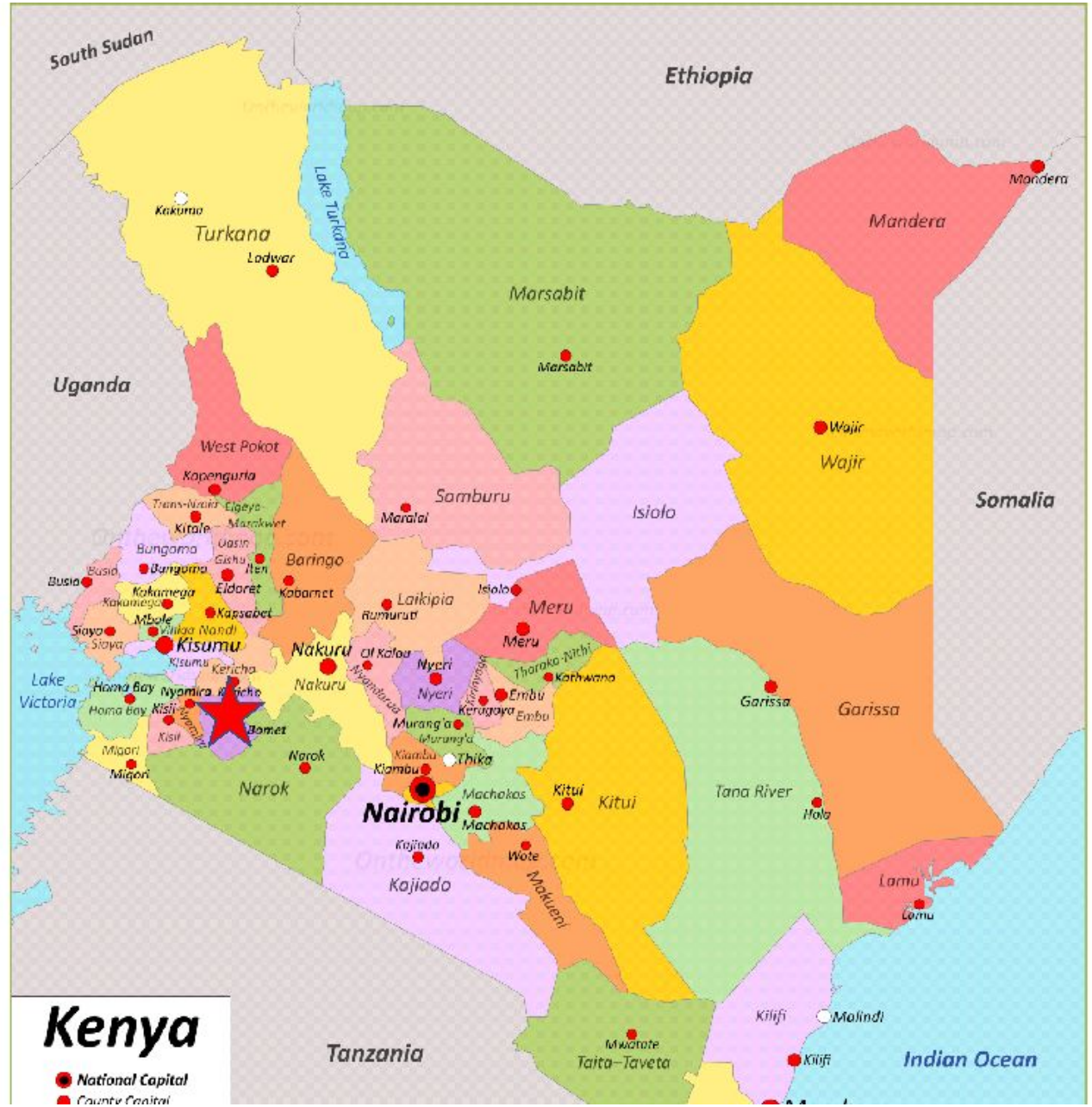
South Sudan
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West Pokot
Somalia
Kapenguria
Samburu
Maralal
Isiolo
Trans-Nzoia
Elgeyo-Marakwet
Kitale
Bungoma
Baringo
Busia
Uasin Gishu
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Eldoret
Kakamega
Kabarnet
Laikipia
Isiolo
Meru
Siaya
Kapsabet
Mbale
Vihiga
Nandi
Kisumu
Nakuru
Meru
Siaya
Kisumu
Ol Kalou
Tharaka-Nithi
Kericho
Nyeri
Karhwano
Lake Victoria
Homa Bay
Nyamira
Nakuru
Embu
Garissa
Garissa
Homa Bay
Kisii
Kerugoya
Embu
Bomet
Murang'a
Kisii
Migori
Narok
Kiambu
Thika
Migori
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Kitui
Machakos
Kitui
Tana River
Nairobi
Machakos
Hola
Kajiado
Wote
Makueni
Kajiado
Lamu
Lamu
Kilifi
Malindi
Kilifi
Indian Ocean
Tanzania
Mwatate
Taita–Taveta
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National Capital

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COLLEGE OF SURGEONS East • Central • Southern • Africa 19 99

AfrECC
AFRICAN ESOPHAGEAL CANCER CONSORTIUM


DOCTORS' CLASSROOM
WE TREAT
JESUS HEALS
HOSPITAL

In the beginning…

A tale of three cities…

- Endoscopy and Research
- Surgical Education- COSECSA/ PAACS
- Mentorship

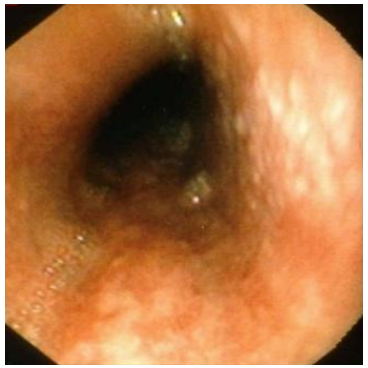
Document…then report it

The Surgeon scientist- Are they going extinct?

- “Paralyzed Academic Investigator's Disease Syndrome” Joseph Goldstein*
  - a condition of inappropriate training that impairs even highly motivated young investigators
  - Treatment:
    - a dose of basic science training
    - a dose of technical courage
- Surgeon–scientists often have the right personality, work ethic, and training to lead a research team, in the same way that they do in the operating room**.

*Goldstein, J. L. On the origin and prevention of PAIDS (Paralyzed Academic Investigator's Disease Syndrome). *J. Clin. Invest.* **78**, 848–854 (1986).
Woldu, S., Raj, G. The surgeon–scientist — a dying breed?. *Nat Rev Urol* **13, 698–699 (2016). https://doi-org.ezproxy.is.ed.ac.uk/10.1038/nrurol.2016.236

ESCC Survival



> 90% 5-year survival < 10%

- Poor survival is due to late diagnosis, which is due to late symptoms
- Need early detection and treatment
- How do we screen asymptomatic persons?

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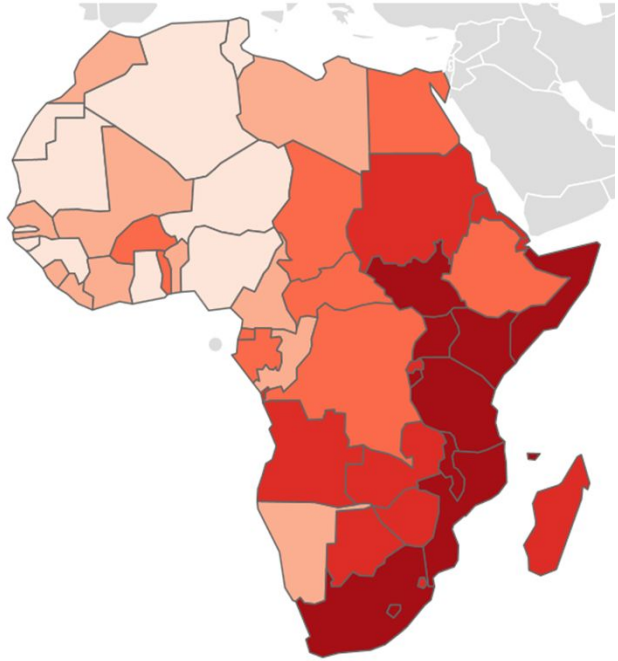
Oesophageal Cancer in Africa



- A distinct HR belt along the East Coast
- Incidence = 20-30/100,000/year, >90% ESCC
- ~20% of cases <40 years old
- Tremendous genetic diversity
- Almost totally unstudied

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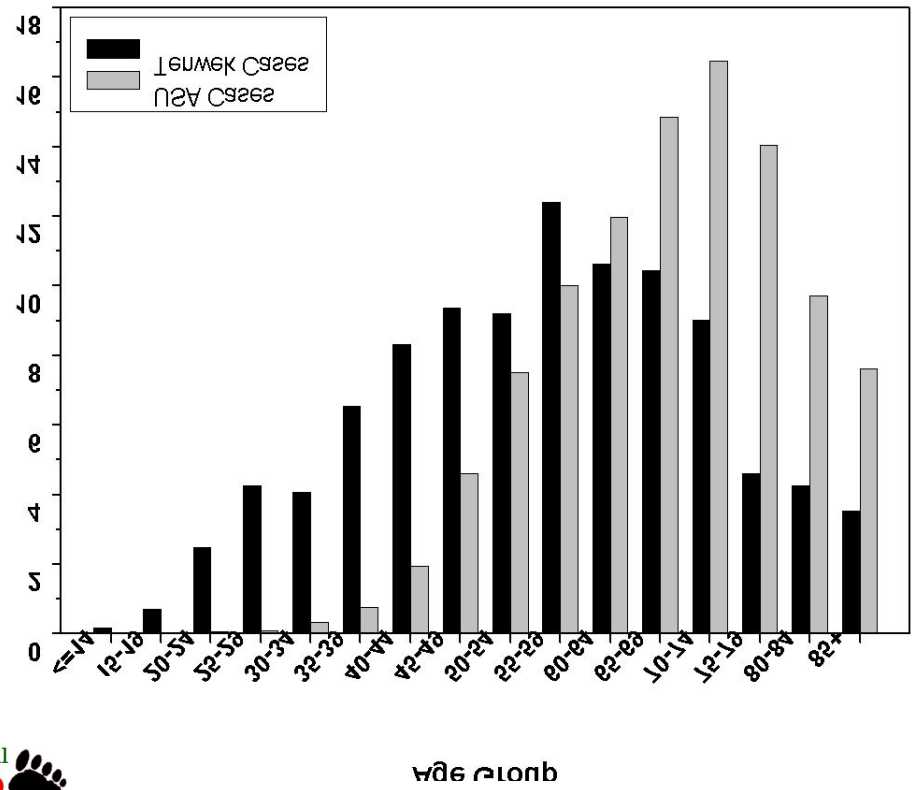
Looking back: What has been done so far?



Parker et al, Dis Esophagus 2010

- 20% of the TH cases were <40yo
- 8% were <30
- Some were as young as 14!
- Predominantly Esophageal squamous Cell Carcinoma as compared to Esophageal adenocarcinoma

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Looking back: What has been done so far?

- Only 5% of cases are resectable

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Looking back: What has been done so far?

Oesophageal stent placement without fluoroscopy

- White RE, Mungatana C, Topazian M. **Esophageal Stent Placement Without Fluoroscopy**. *Gastrointestinal Endoscopy* 2001; 53(3): 348-51.
- White, R.E., Parker, R.K., Fitzwater, J.W. et al, **Stents as sole therapy for oesophageal cancer: a prospective analysis of outcomes after placement**. *Lancet Oncol*. 2009;10:240–246.
- White RE, Chepkwony R, Mwachiro M, Burgert SL, Enders FT, Topazian M. **Randomized Trial of Small-diameter Versus Large-diameter Esophageal Stents for Palliation of Malignant Esophageal Obstruction.** J Clin Gastroenterol. 2015 Sep;49(8):660-5.
- Parker RK, White RE, Topazian M, Chepkwony R, Dawsey S, Enders F. **Stents for proximal esophageal cancer: a case-control study.** Gastrointest Endosc. 2011 Jun;73(6):1098-105. doi: 10.1016/j.gie.2010.11.036. Epub 2011 Feb 3. PMID: 21295300
- Mwachiro M, Parker R, Chepkwony R, Burgert S, White R **Esophageal stent placement without optical or fluoroscopic visualization.** VideoGIE November 2017, Vol 2, Issue 11, Pages 309–311

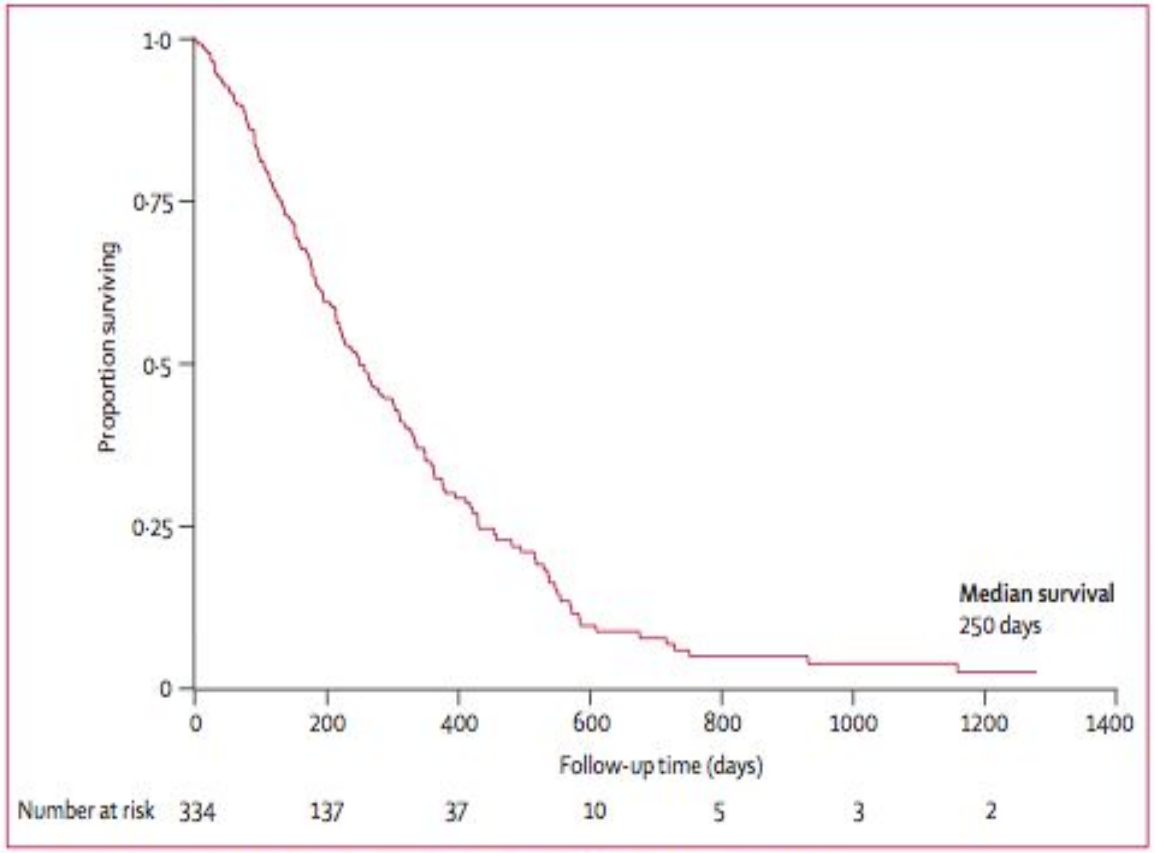

Figure 1: Kaplan-Meier analysis of survival for all patients with follow-up (n=334)

- Early Complications (n = 1,000)
  - Perforation n = 34 1.9%*
  - Bleeding n = 7 0 .7%
  - Severe chest pain n = 10 1%
  - Death n = 3 0 .3%
- Late Complications (n = 334)
  - Overgrowth/Obstruction n = 55 16.5%
  - Migration n = 3 0 .8%
  - Late TEF n = 8 2 .4%

White, R.E., Parker, R.K., Fitzwater, J.W. et al, **Stents as sole therapy for oesophageal cancer: a prospective analysis of outcomes after placement**. *Lancet Oncol*. 2009;10:240–246

DOI: 10.1055/a-1783-9829

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Original article

Predictors of adverse events and early mortality after esophageal stent placement in a low resource setting: a series of 3823 patients in Kenya

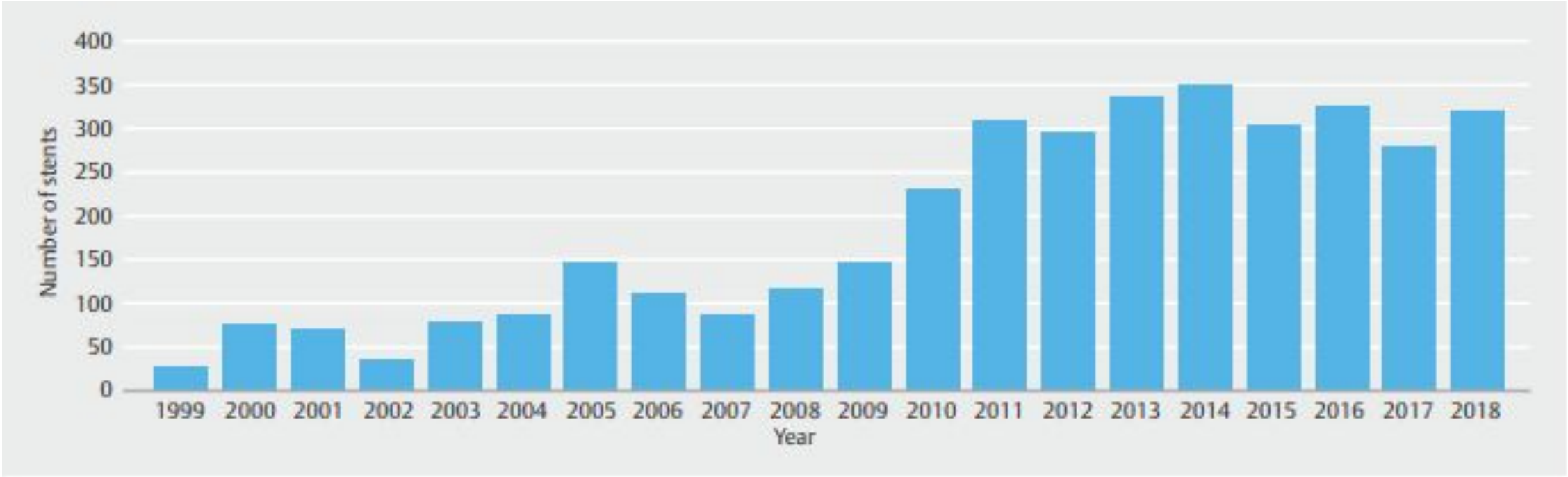
Michael Mwachiro , Robert Parker , Justus Lando , Ian Simel , Nyail Chol , Sinkeet Ranketi , Robert Chepkwony , Linus Pyego , Caren Chepkirui , Winnie Chepkemoi , David Fleischer , Sanford Dawsey , Mark Topazian , Steve Burgert , Russell White

› Author Affiliations

› Further Information

› Also available at eRef

- Low perforation rate (1.1%)
- SEMS placement is a safe, effective method of palliating malignant dysphagia, with low rates of Adverse Events and 30-day mortality and high rates of clinical and technical success.
- Dilation can facilitate placement of SEMS without fluoroscopy but should not be performed above 36F due to the risk of perforation.



▶ **Fig. 1** Number of self-expanding metal stents placed for esophageal cancer at Tenwek Hospital over 20 years.

- Reflects the current reality that we are diagnosing more patients but are also seeing many patients at a later stage

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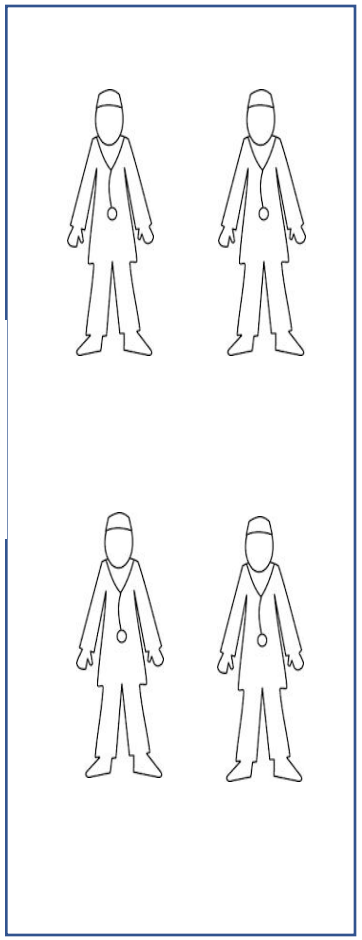
Training the Trainers for Endoscopic SEMS Placement

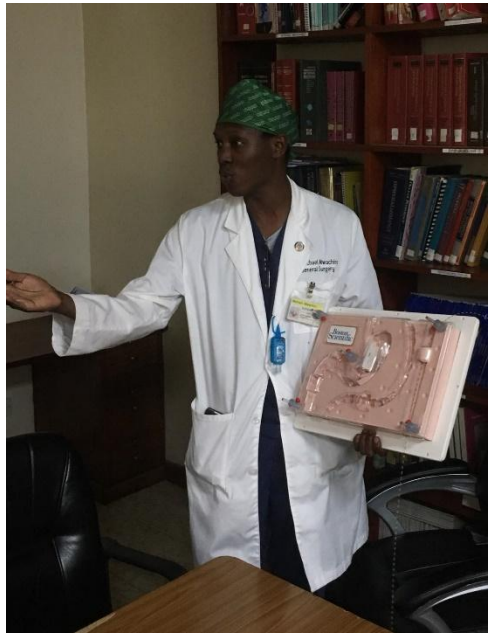
Tenwek Hospital
Bomet, Kenya

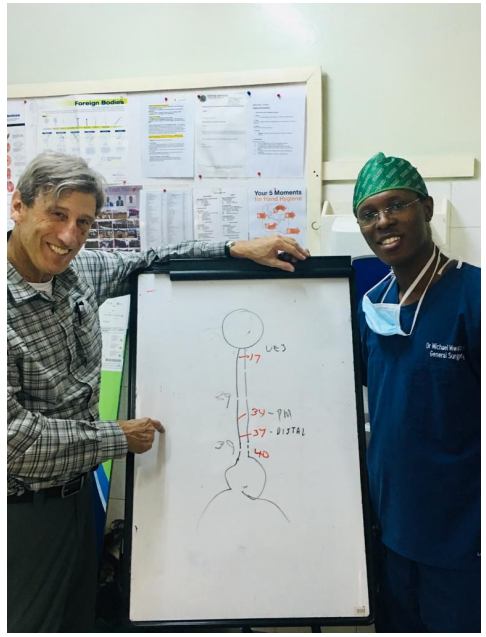
Muhimbili National Hospital, Dar es Salaam, Tanzania



Dr. Topazian Dr. Fleischer Dr. Mwachiro Dr. Ringo Dr. Kitembo

The Trainers




Foreign Bodies
Your 5 Moments

ESCC Risk Factors

Low-Risk Populations

- Tobacco HR 9.3
- Alcohol HR 4.9
- Low SES

High-Risk Populations

- [Tobacco, alcohol] HRs 1.3, 0.9
- Diet (low selenium)
- Tobacco carcinogens from non-tobacco sources (PAHs)
- Hot temperature drinks
- Poor oral health

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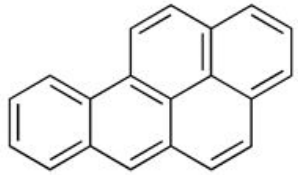
Polycyclic Aromatic Hydrocarbons



- 2-7 ring hydrocarbons
- Products of incomplete combustion of organic material
- Sources
  - Air: tobacco smoke, coal or wood smoke, car exhaust, crop fires
  - Food: charbroiled meat

- Carcinogenicity
  - PAHs form DNA adducts which are mutagenic
  - IARC Group I – B[a]P, coal tars, coke production
- Biomarkers of individual exposure
  - Urine metabolites (1-OHPG); DNA adducts; antibodies to BPDE

Urine 1-OHPG

Country	Population	Median 1-OHPG (pmol/ml)
Low-Risk		
Korea	Non-Smokers	0.26
US	Non-Smokers	0.23
Korea	Smokers	0.55
Korea	Smoking steelworkers	4.91
High-Risk		
China	Non-Smokers	3.36
Iran	General population	4.20
Brazil	General population	2.09
Kenya	General population	7.18

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Urine 1-OHPG

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- High PAH exposure is a consistent finding in all HR pops

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PAH exposure in Western Kenya
The STEP Study

- Community-based sample of 289 adults, 19% smokers
- 7 urine PAH metabolites, measured at CDC

Mwachiro et al, Environ Int 2021

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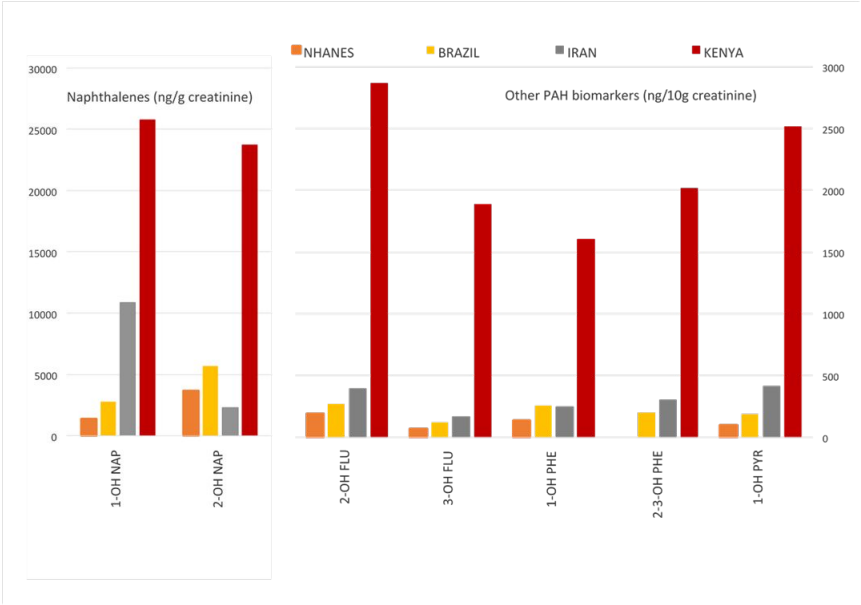
PAH exposure in Western Kenya
The STEP Study

- Community-based sample of 289 adults, 19% smokers
- 7 urine PAH metabolites, measured at CDC
- Among non-smokers, these metabolite levels were <u>huge</u> – many times the levels in the US or in HR populations in Brazil or Iran



Mwachiro et al, Environ Int 2021

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PAH exposure in Western Kenya
The STEP Study

- PAH metabolites were significantly higher in women, and in those cooking indoors, but not in smokers
- Urine metabolites were 2x higher in women than in men

Mwachiro et al, Environ Int 2021

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PAH exposure in Western Kenya
The STEP Study

- PAH metabolites significantly higher in women, in those cooking indoors, and in those <50, but not in smokers
- Urine metabolites 2x higher in women than in men

- PAH exposure is exceptional in this population, and is associate with indoor cooking with wood on open unvented stoves

Mwachiro et al, Environ Int 2021

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PAH Exposure and ESCC

- High PAH exposure appears to be a universal risk factor for esophageal squamous cell carcinoma
- Different populations acquire their main PAH exposure from different sources

Population	Primary exposure	Other exposures
West	Tobacco smoke	Car exhaust
China	IAP from Coal smoke	Car exhaust, Industrial pollution
Iran	?Indoor air pollution	Tobacco smoke, Opium
Brazil	Maté, Tobacco smoke	BBQ meat, Car exhaust
Kenya	IAP from Wood smoke	Tobacco smoke




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Hot Temperature Drinks and ESCC

- Systematic Review of the Association of Beverage Temperature and EC Risk

Beverage	# Pubs	↑ Risk	↓ Risk	NS change
Tea	14	8	2	4
Coffee	7	3	0	4
Maté	3	3	0	0
Other	17	11	0	6
Total (%)	41	25 (61)	2 (5)	14 (34)

Islami et al Int J Cancer 2009

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Islami et al Int J Cancer 2009

- Case-Control Study of ESCC in Golestan, Iran (300 cases, 571 controls)

Tea Temperature	aOR
Warm (<65°C)	1.00
Hot (65-69°C)	2.07 (1.28 – 3.35)
Very Hot (≥70°C)	8.16 (3.93 – 16.91)

Islami et al BMJ 2009

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Hot Temperature Drinks and ESCC

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"…drinking very hot beverages at above 65°C was classified as 'probably carcinogenic to humans' (Group 2A)"

Loomis et al Lancet Oncol 2016

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Hot Temperature Drinks and ESCC

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Loomis et al Lancet Oncol 2016

- Mean Beverage Temperatures and Risk of ESCC in Different Countries

Country	Beverage	Mean Temp	% >65°C	ESCC Risk
Kenya	Tea	72	99	High
Brazil	Maté	69		High
Iran	Tea	62	22	High
US	Coffee	61		Low
S. China	Tea	60	20	Low
UK	Tea	55		Low

Mwachiro et al, Cancer Epidemiol 2019

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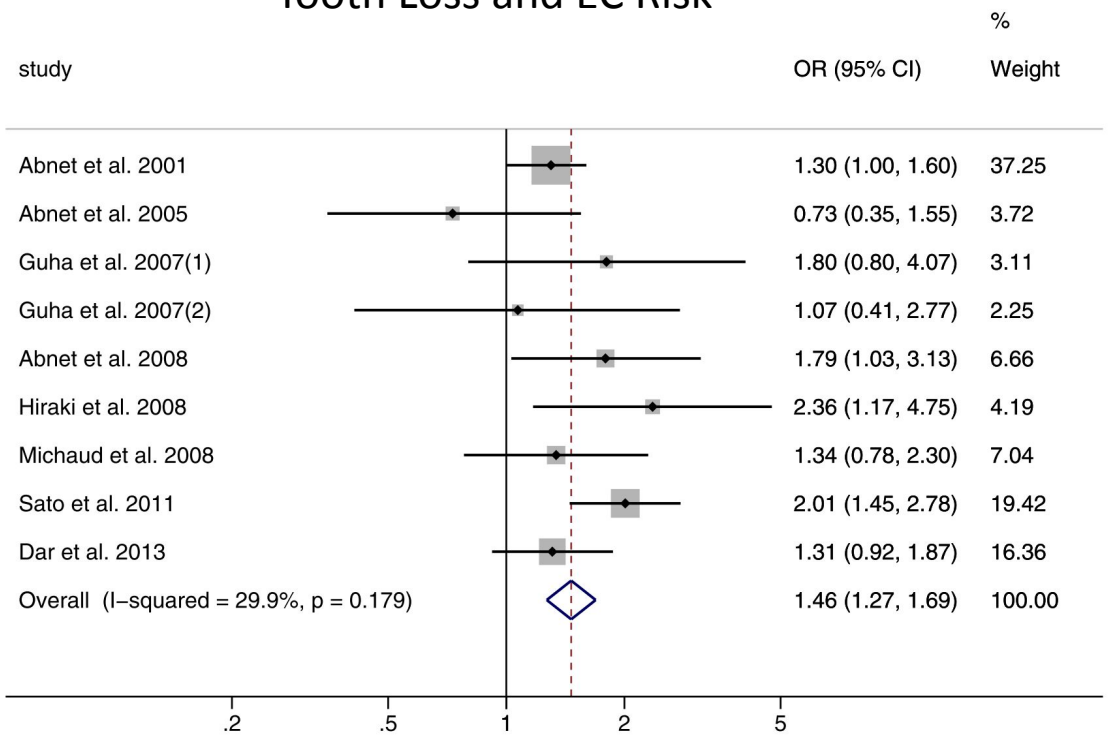
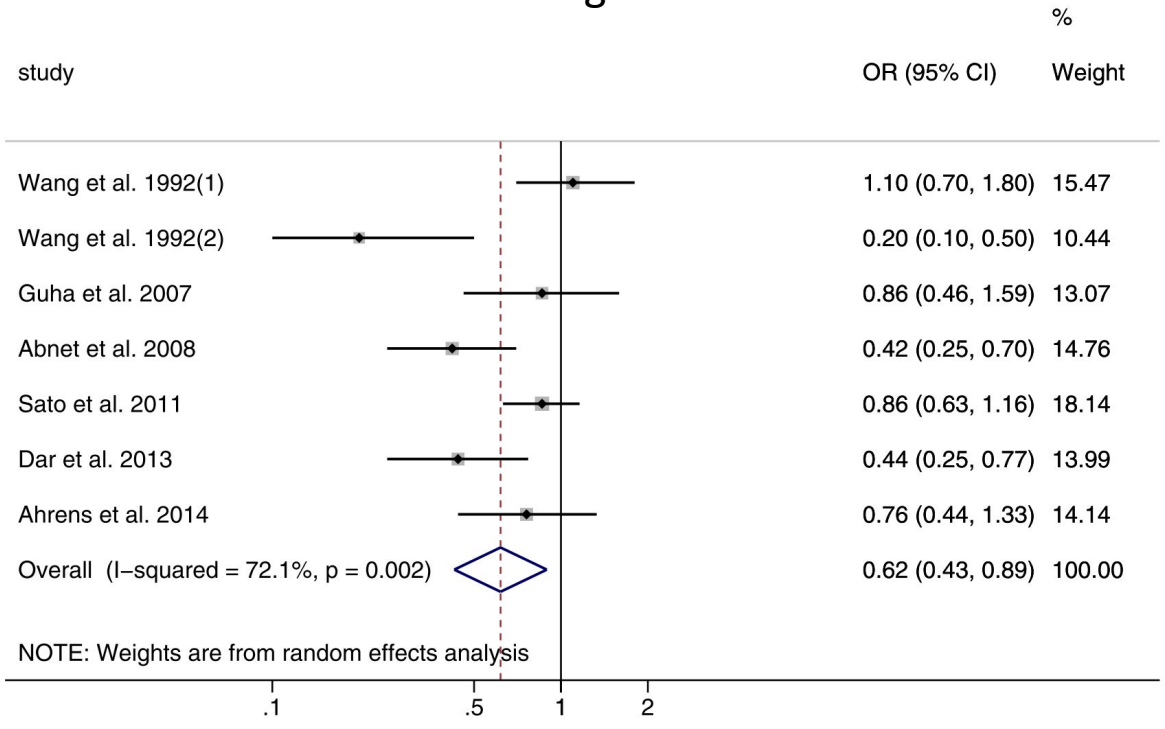
Poor Oral Health and ESCC

- Poor Oral Health = tooth decay, periodontal disease and tooth loss
- It is assessed by counting teeth, DMFT, evaluating the gums, and oral hygiene practices
- It involves changes in the oral microbiome, which may influence ESCC risk

Tooth Loss and EC Risk



Tooth Brushing and EC Risk



Chen, et al. *Sci Rep* (2015).

Poor Oral Health and ESCC in East Africa

Country	Cases/Controls	Tooth Loss ≥6 vs. 0-1, aOR	Brushing Daily vs. Never, aOR
Kenya	430/440	2.0 (1.1-3.5)	0.7 (0.3-1.3)
Tanzania	310/313	2.6 (1.4-4.8)	0.4 (0.2-0.8)

Menya et al, Int J Cancer 2019; Mmbaga et al, Cancer Epidemiol 2000

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Possible ways to reduce exposures that increase ESCC risk

Exposure	Intervention
Indoor Air Pollution (PAHs)	Increase ventilation in cooking areas
	Use “improved” cookstoves
	Add chimneys
	Change from wood to charcoal or natural gas
Hot temperature beverages	Education
Poor Oral Health	Education, better access to dental care

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Challenge: All of these interventions require motivated, long-term advocacy

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Screening for Esophageal Cancer

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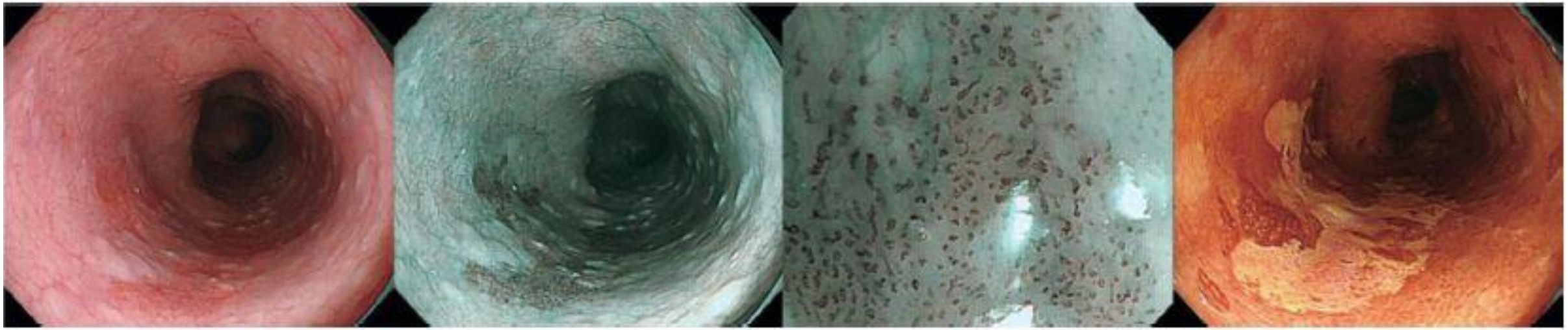
Endoscopic Screening Modalities



White Light Endoscopy

Narrow Band Imaging

Magnifying Narrow Band Imaging

Lugol's Chromoendoscopy

Codipilly DC, et al. Screening for esophageal squamous cell carcinoma: recent advances. Gastrointest Endosc. 2018 Sep;88(3):413-426

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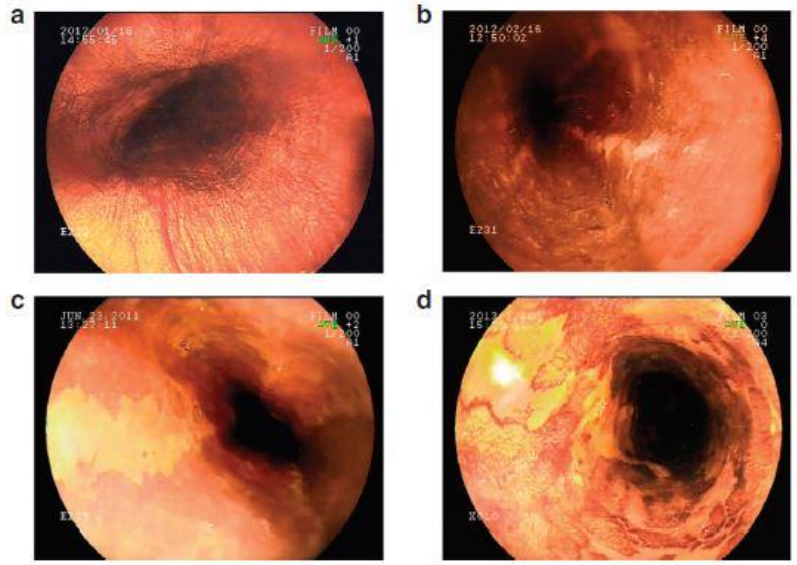
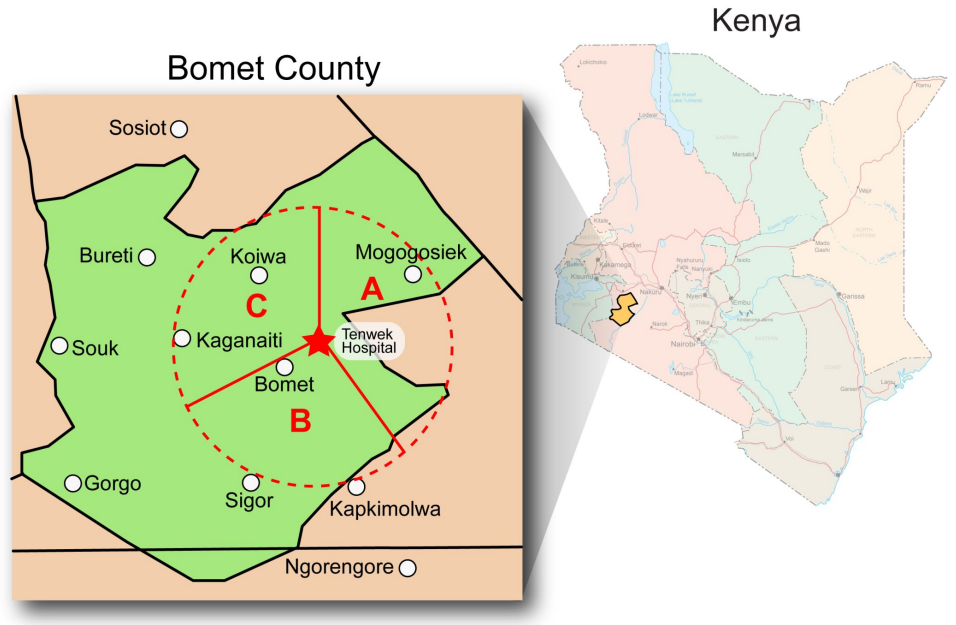
NIH NATIONAL CANCER INSTITUTE

MAYO CLINIC

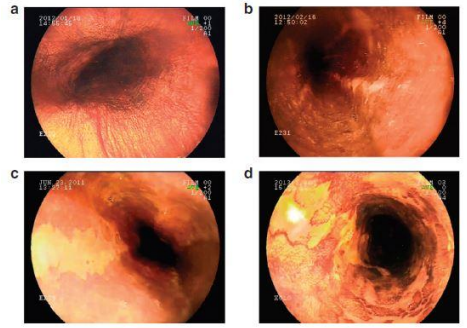
UNIVERSITY OF NAIROBI





- Pioneer research on Lugol's chromoendoscopy in Africa
- Established a baseline dysplasia rate for ESD
- Screening study on 300 asymptomatic subjects in a high risk area
- Potential for scalability

Mwachiro M et al Esophageal Squamous Dysplasia is Common in Asymptomatic Kenyans: A Prospective, Community-Based, Cross Sectional StudyAm J Gastroenterol 23 February 2016; doi: 10.1038/ajg.2016.26



Histologic Diagnoses

Diagnosis	Number	N (%)
Normal	115	37
Mild esophagitis	119	39
Moderate- severe esophagitis	27	9
Mild dysplasia	35	11.5
Moderate dysplasia	8	2.6
Severe dysplasia	1	0.3

14.4%

Mwachiro M et al Esophageal Squamous Dysplasia is Common in Asymptomatic Kenyans: A Prospective, Community-Based, Cross Sectional StudyAm J Gastroenterol 23 February 2016; doi: 10.1038/ajg.2016.26

Cancer Epidemiology
Volume 78, June 2022, 102141

Prevalence of esophageal squamous dysplasia in relatives of patients with esophageal cancer in Southwestern Kenya

Justus O. Lando [a], Michael M. Mwachiro [a], Robert K. Parker [a, b], Paul S. Albert [c], Russell E. White [a, b], Stephen L. Burgert [a], Robert Chepkwony [a], Christian C. Abnet [d], Jessie Githanga [e], Mark D. Topazian [f], Sanford M. Dawsey [d]

- There was heterogeneity in ESD prevalence between families, suggesting genetic or environmental factors may influence it.
- The overall prevalence of ESD among first-degree relatives was 14.7%, comparable to the background prevalence of 14.4%.

Comparison of dysplasia studies

Year	Author	Location	Sample Size	Age (yrs	Prior Dysplasia	Mild	Moderate	Severe	All dysplasia
1994	Dawsey	Linxian, PRC	754	40 – 69	No	10.6%	4.6%	5.8%	23%
1997	Roth	Linxian, PRC	439	50 – 69	None	12.0%	10.0%	6.0%	28%
2004	Lu	Cixian, PRC	2013	40 – 69	NA	8.6%	7.8%	2.6%	22%
2008	Pan	Linxian, PRC	725	50 – 64	NA	14.0%	12.0%	5.0%	32%
2010	He	Anyang, PRC	7381	25– 65	NA	2.6%	0.2%	0.2%	3%
2012	Etemadi	Gonbad, Iran	724	NA	None	NA	NA	NA	4%
2016	**Mwachiro**	**Bomet, KE**	**294**	**18-79**	**None**	**11.5%**	**2.6%**	**0.3%**	**14.4%**
2022	**Lando**	**Bomet, KE**	**296**	**18-79**	**None**	**11.0%**	**2.5%**	**1.2%**	**14.7%**

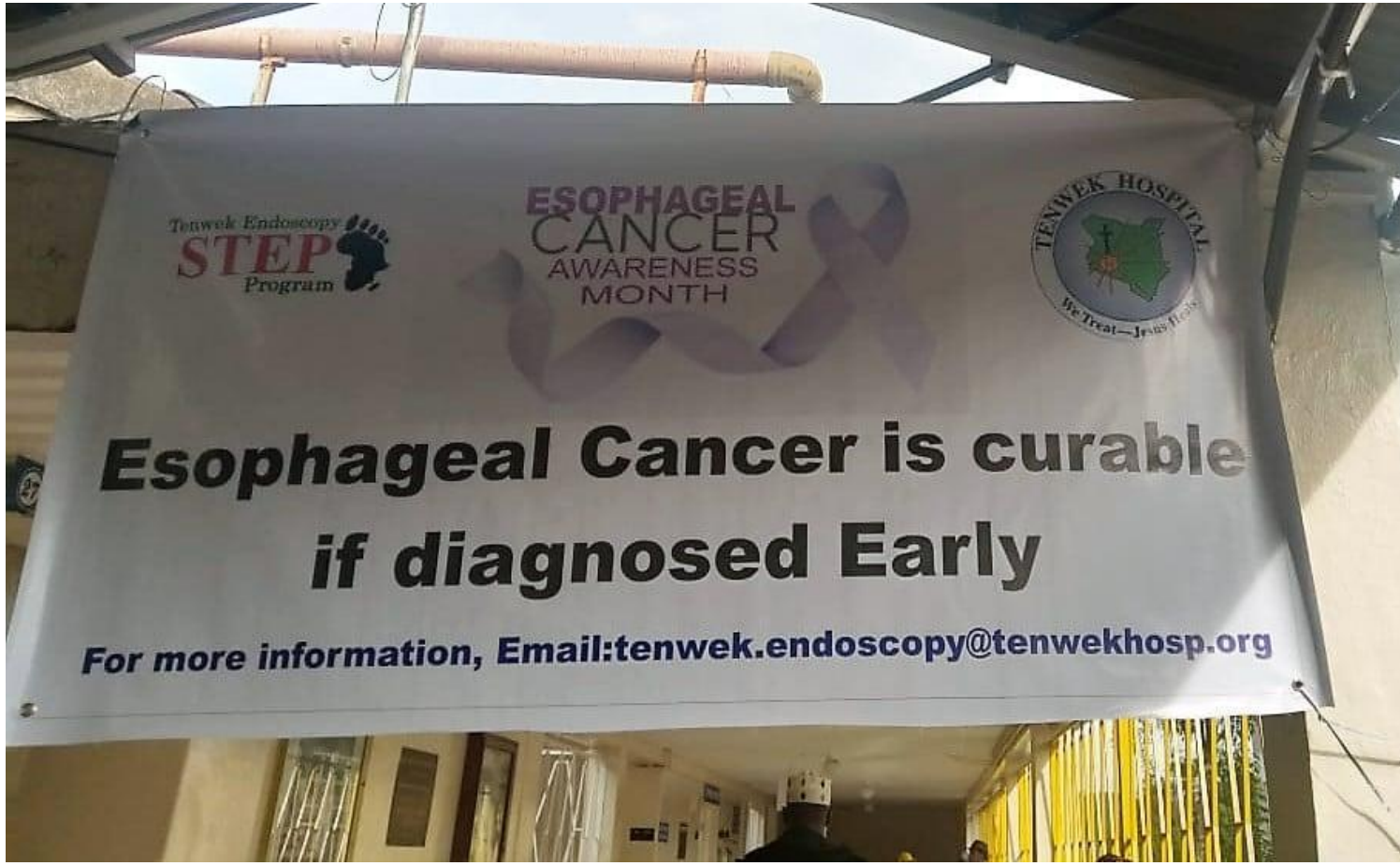
Screening for ESCC: From inception to reality

- Currently endoscopy is the gold standard
- Cost of endoscopy procedures
- Where can endoscopy procedures be done?
- Personnel to do the procedures

Tenwek Hospital
STEP Program
Fighting Esophageal Cancer
Surgical Treatment . Early detection . Palliation

Screening: From Inception to reality

- Start with what we have
- Lugol's chromoendoscopy for first degree relatives of pathology confirmed patients
- Focus on high incidence counties



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Genomic analysis of Esophageal cancer south western Kenya

University of California Global Health Institute
GloCal Health Fellowship

- GloCal Project with Drs Katherine Van Loon/ Sandy Dawsey/ Elizabeth Bukusi
- Enrolling tumor specimens/ saliva and blood samples
- Set in same geographical locale
- Following outcomes of patients with ESCC who get treatment – chemo/ radiotherapy/ surgery/ palliation/ hospice

Tenwek Hospital
STEP Program
Fighting Esophageal Cancer
Surgical Treatment . Early detection . Palliation

Gaps identified for further research

University of California
Global Health Institute
GloCal Health Fellowship

Cancer Epidemiology | Free Access

Optimal management of esophageal cancer in Africa: A systemic review of treatment strategies

Geoffrey C. Buckle, Ruchika Mahapatra, Michael Mwachiro, Larry Akoko, Elia J. Mmbaga, Russell E. White, Stephen Bent, Katherine Van Loon

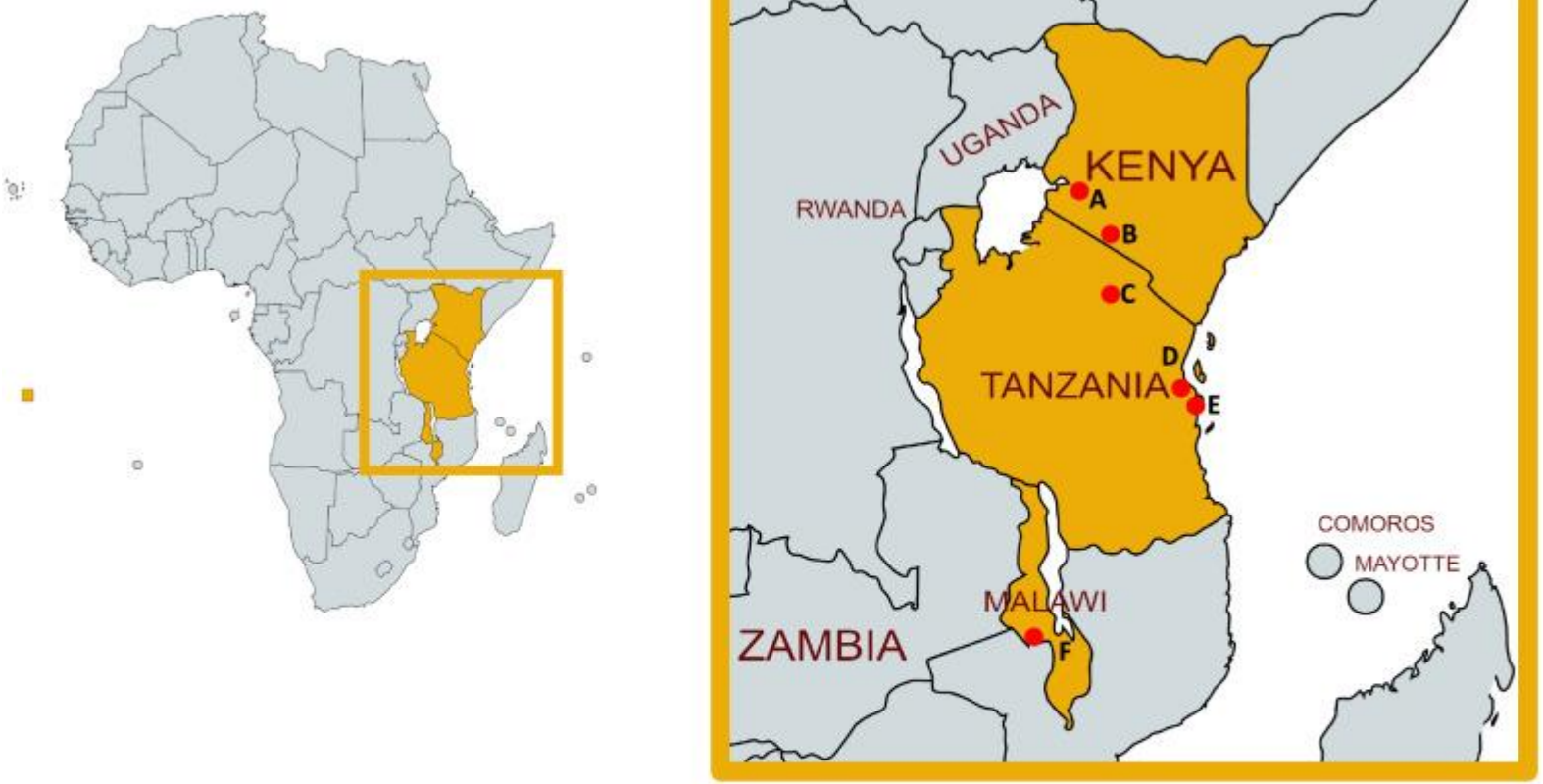
First published: 15 September 2020 | https://doi.org/10.1002/ijc.33299 | Citations: 2

- Evaluation of the safety and efficacy of neoadjuvant therapy in patients with locally advanced disease;
- Strategies to improve long-term survival in patients treated with definitive chemoradiation; and
- Comparative effectiveness of modern palliative interventions, with a focus on QOL and OS as outcome measure

Multicenter Study > BMC Cancer. 2022 Jan 19;22(1):82. doi: 10.1186/s12885-021-09124-5.

University of California
Global Health Institute
GloCal Health Fellowship

Treatment outcomes of esophageal cancer in Eastern Africa: protocol of a multi-center, prospective, observational, open cohort study



AfrECC Study Sites
A. Moi Teaching and Referral Hospital, Eldoret, Kenya

Gastrointestinal endoscopy capacity in the region

OPEN ACCESS CC BY-NC-ND 4.0 · Endosc Int Open 2021; 09(11): E1827-E1836
DOI: 10.1055/a-1551-3343

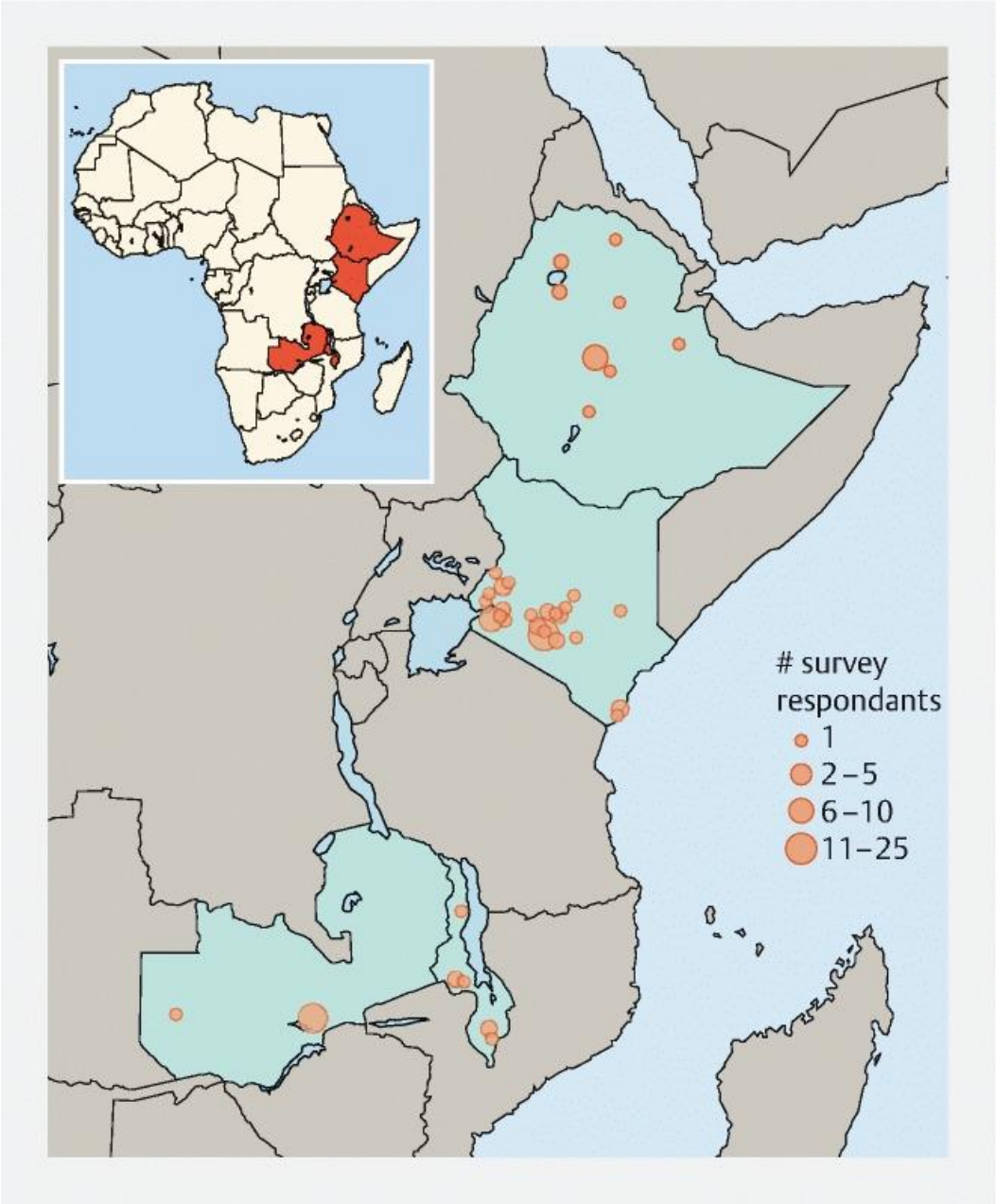
Download PDF

Original article

Gastrointestinal endoscopy capacity in Eastern Africa

Michael Mwachiro‡ , Hillary M. Topazian‡ , Violet Kayamba , Gift Mulima , Elly Ogutu , Mengistu Erkie , Gome Lenga , Thomas Mutie , Eva Mukhwana , Hailemichael Desalegn , Rezene Berhe , Berhane Redae Meshesha , Bongani Kaimila , Paul Kelly , David Fleischer , Sanford M. Dawsey , Mark D. Topazian

- Study of government, private and faith based institutions
- Survey done through the country associations
- Responses from 87 participants in 91 facilities



Mwachiro, M., Topazian, H. M., et al. (2021). Gastrointestinal endoscopy capacity in Eastern Africa. Endoscopy international open

Surgical Education…

PAN-AFRICAN ACADEMY OF CHRISTIAN SURGEONS
PAACS

Short term volunteers

PAN-AFRICAN ACADEMY OF CHRISTIAN SURGEONS
PAACS

Technical support and training

PAN-AFRICAN ACADEMY OF CHRISTIAN SURGEONS PAACS

Partnering to acquire support for equipment and supplies

Different ways of collaborative training in endoscopy

Review > Surg Endosc. 2021 Dec;35(12):7005-7014. doi: 10.1007/s00464-020-08214-y.
Epub 2021 Jan 4.

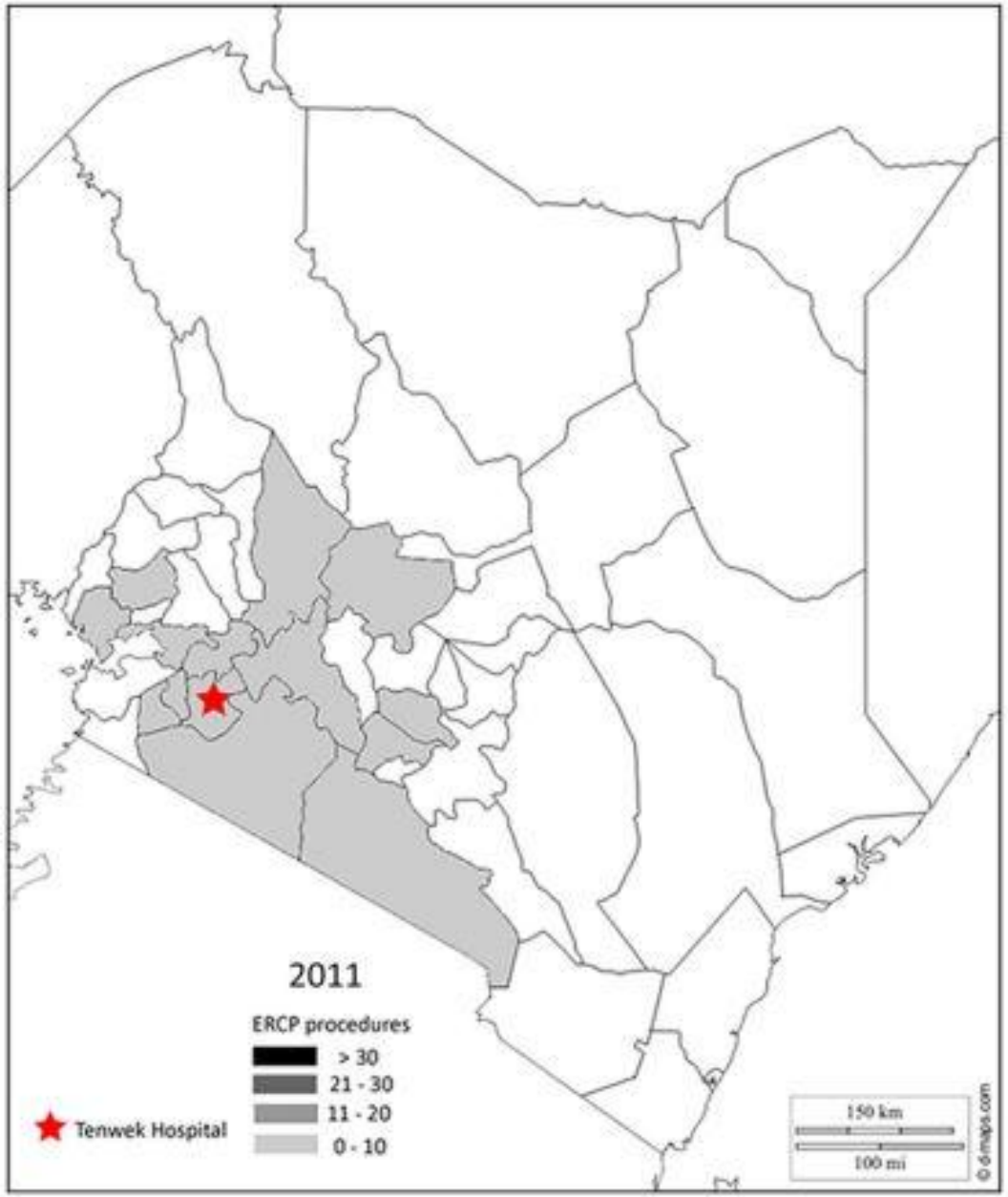
Establishment of an endoscopic retrograde cholangiopancreatography (ERCP) program in rural Kenya: a review of patient and trainee outcomes

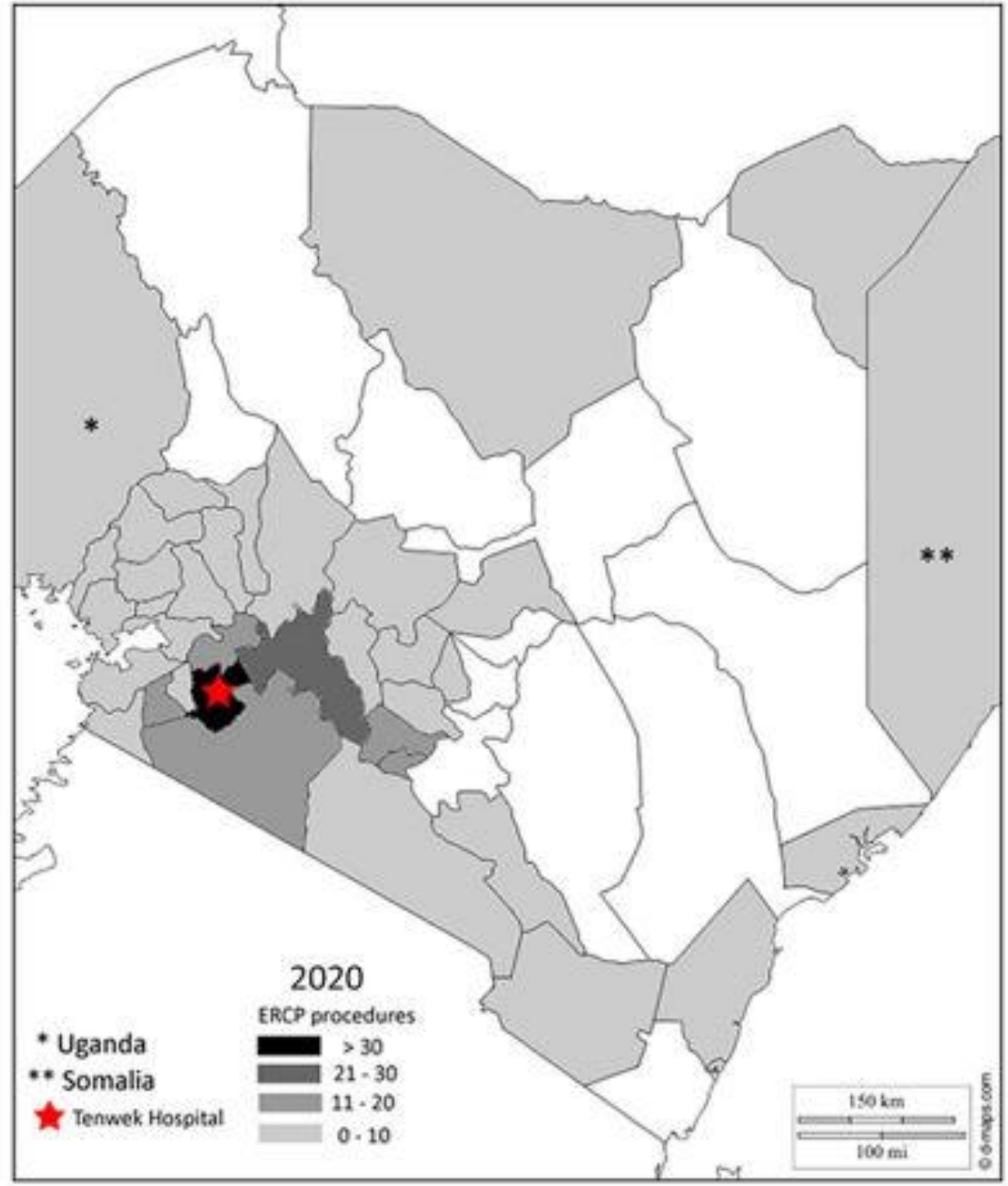
Michael Mwachiro [1], Nyail Chol [2], Ian Simel [2], Justus Lando [2], David Ngetich [2], Robert Parker [2 3], Philip Tanner [4], John Mellinger [5], Jeffrey Hallett [6], Mark Topazian [7], Stephen Burgert [2]

Affiliations + expand

PMID: 33398556 DOI: 10.1007/s00464-020-08214-y

PAN-AFRICAN ACADEMY OF CHRISTIAN SURGEONS
PAACS


2011
ERCP procedures
> 30
21 - 30
11 - 20
0 - 10
Tenwek Hospital
150 km
100 mi
© d-maps.com


2020
* Uganda
** Somalia
Tenwek Hospital
ERCP procedures
> 30
21 - 30
11 - 20
0 - 10
150 km
100 mi
© d-maps.com

Short term training visits- assisting other endo units

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Coming soon

- Surgical Endoscopy Fellowship- Tenwek Hospital
  - PAACS/ Loma Linda
  - COSECSA

PAN-AFRICAN ACADEMY OF CHRISTIAN SURGEONS
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PAACS community events- Basic Science Conference

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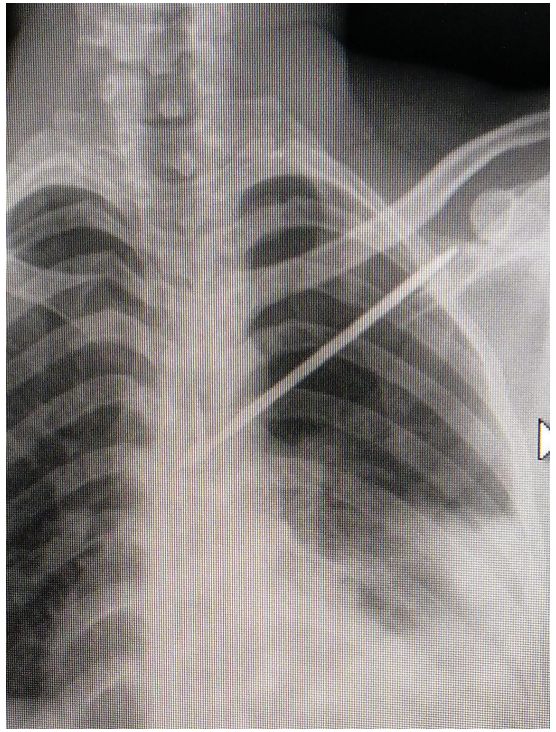
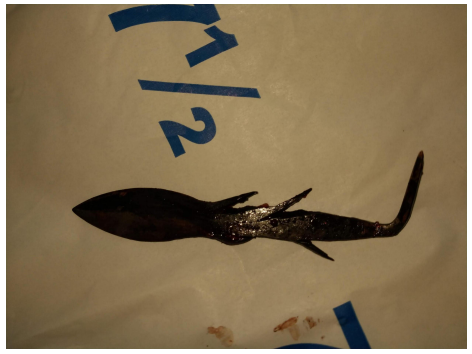
The residency journey is quite long…

All in a night's work…





Celebrating with patients

Celebrating completion of training

PAN-AFRICAN ACADEMY OF CHRISTIAN SURGEONS
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PAACS Impact on increasing women in surgery

PAN-AFRICAN ACADEMY OF CHRISTIAN SURGEONS
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#Heforshe: supporting and partnering in mentoring

Impact of PAACS Exchange programs

- Learning from diversity
- Exposure to new cultures
- Passing on the vision
- Appreciate PAACS for making these trips possible for residents

Dr Elvam Asaph from Galmi visiting Tenwek

Training in endoscopy

› Surg Endosc. 2021 Dec;35(12):6708-6716. doi: 10.1007/s00464-020-08174-3. Epub 2020 Nov 30.

Gastrointestinal endoscopy experience of surgical trainees throughout rural Africa

Robert K Parker [1] [2], Michael M Mwachiro [3] [4], Hillary M T
Albert F Nyanga [7], Zachary O'Connor [8], Stephen L Burge

Affiliations + expand

PMID: 33258037 DOI: 10.1007/s00464-020-08174-3

PAN-AFRICAN ACADEMY OF CHRISTIAN SURGEONS
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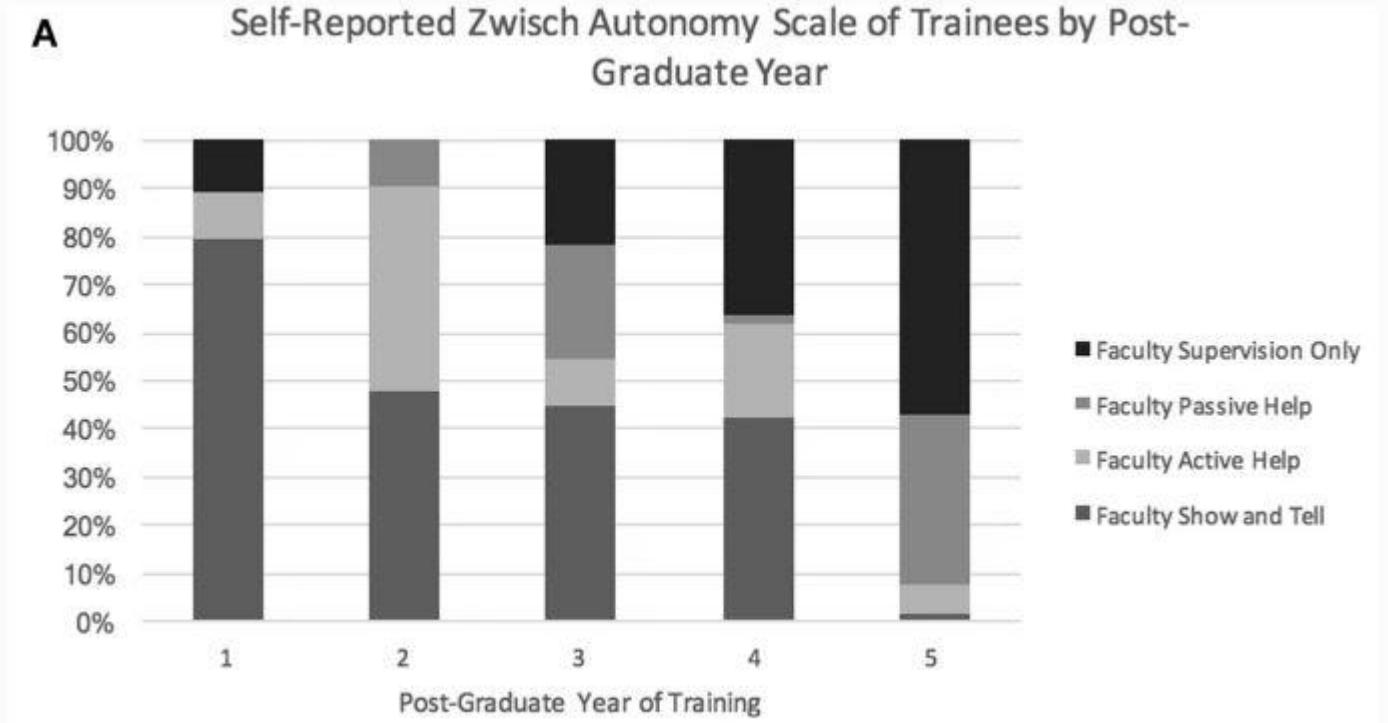
Fig. 1

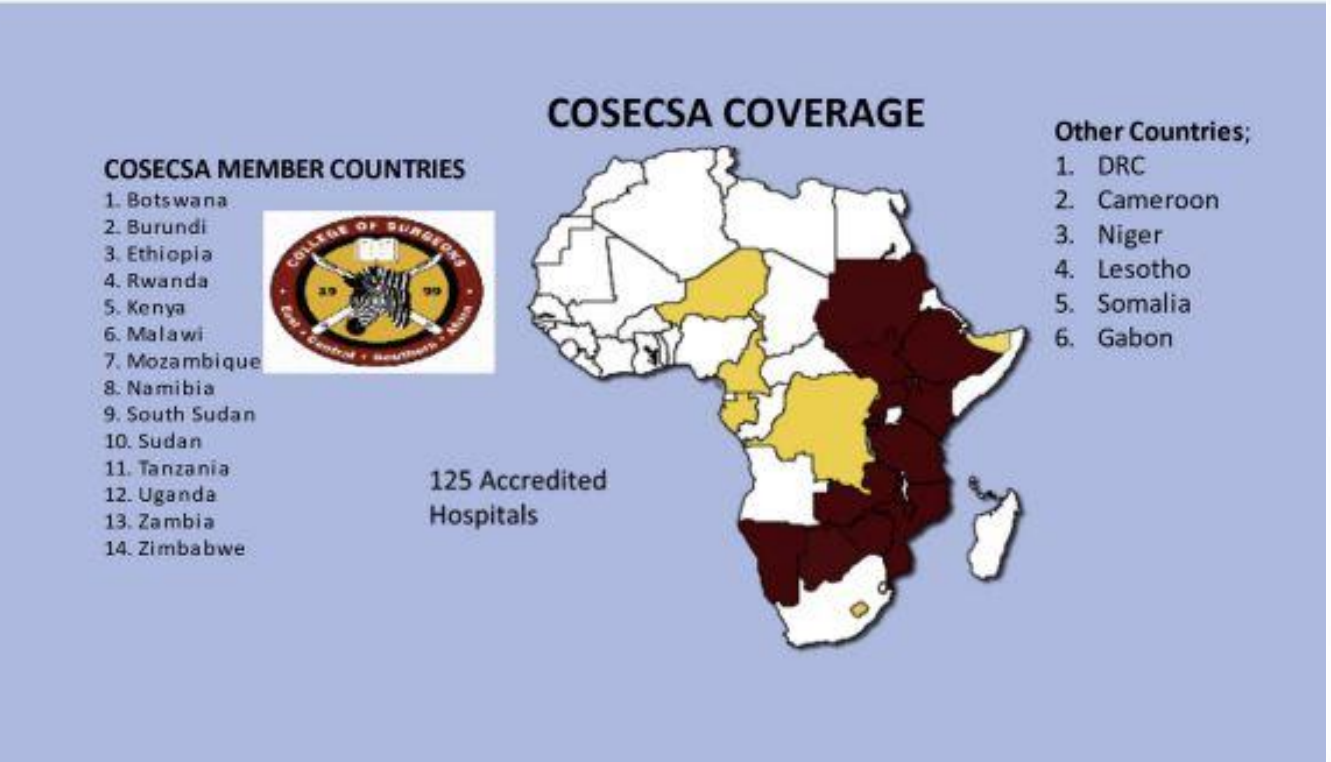


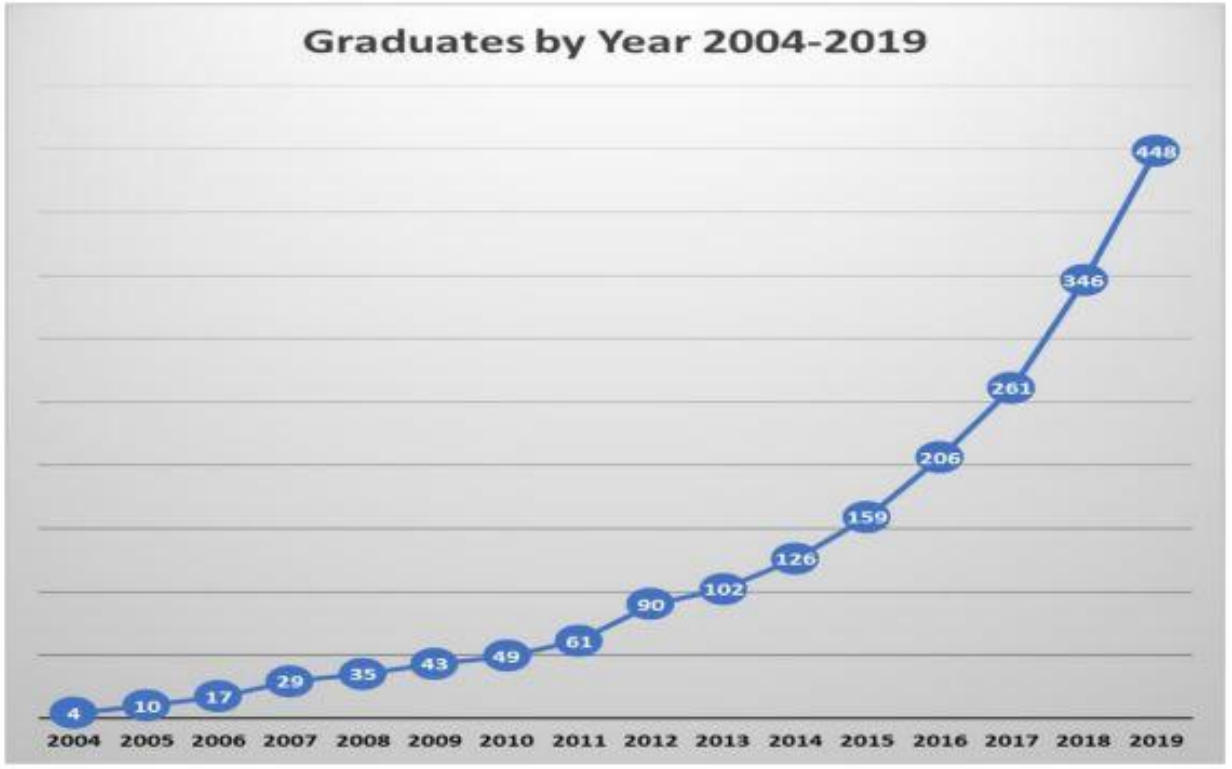
Improving surgical capacity in Africa

The impact of COSECSA in developing the surgical workforce in East Central and Southern Africa

Wakisa Mulwafu [a], *Jane Fualal* [b], *Abebe Bekele* [c], *Stella Itungu* [d], *Eric Borgstein* [e], *Krikor Erzingatsian* [f], *Samwel Nungu* [g], *Laston Chikoya* [h], *Russell White* [i], *Godfrey Muguti* [j,*]

[a] Kamuzu University of Health Sciences, P Bag 360, Blantyre, Malawi





PAACS Regional engagement with COSECSA

› World J Surg. 2019 Jan;43(1):75-86. doi: 10.1007/s00268-018-4781-9.

Increasing and Retaining African Surgeons Working in Rural Hospitals: An Analysis of PAACS Surgeons with Twenty-Year Program Follow-Up

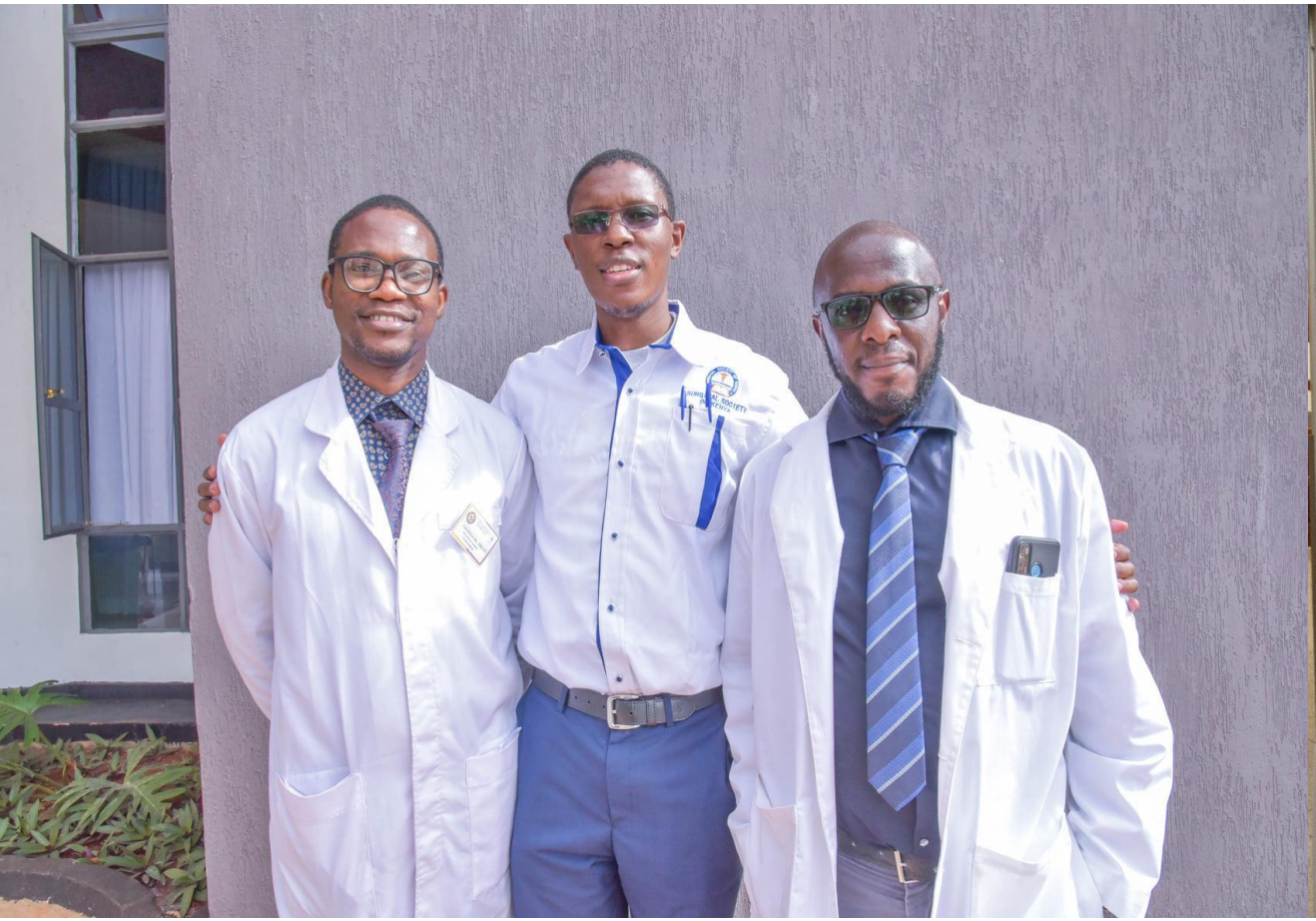
Caleb Van Essen [1], Bruce C Steffes [2], Keir Thelander [3], Beryl Akinyi [4], Hsin-Fang Li [5], Margaret J Tarpley [6]

Affiliations + expand

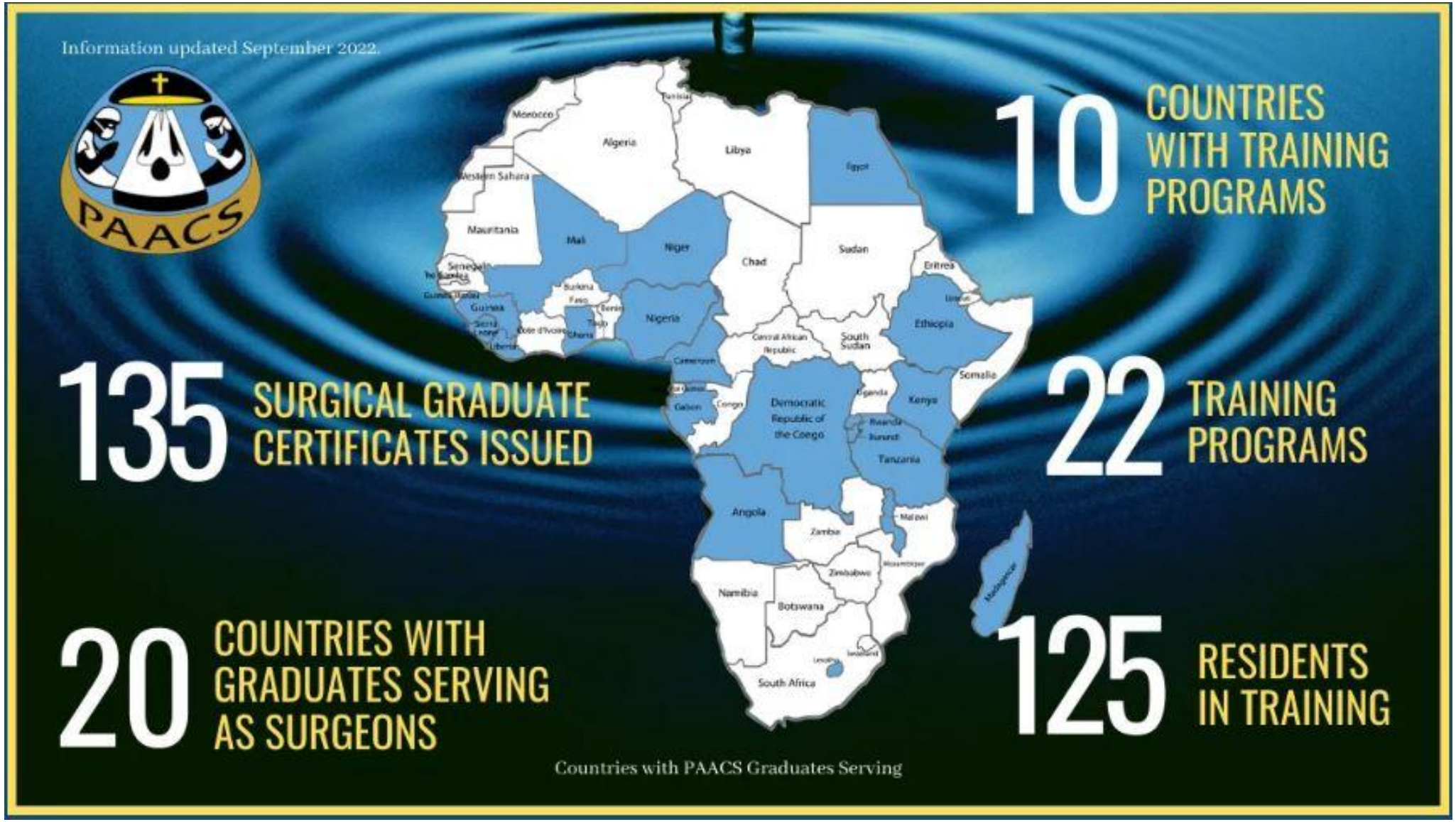
PMID: 30178129 DOI: 10.1007/s00268-018-4781-9

Abstract

Plugging in the graduates



PAACS IMPACT



Mentorship in clinical work, surgical education and research

Mentorship across the generations

Mentorship works!
Dr Violet Otoki PGY3 at #ACSCC22

My own journey in research…

- AORTIC BIGCAT Grant
- ACLI
- Endoscopy/ Surgery
- GloCal
- AfrECC collaborations
- FRRHH Grant
- Uk- Kenya Ongoing OSCC Research project with KUTRRH

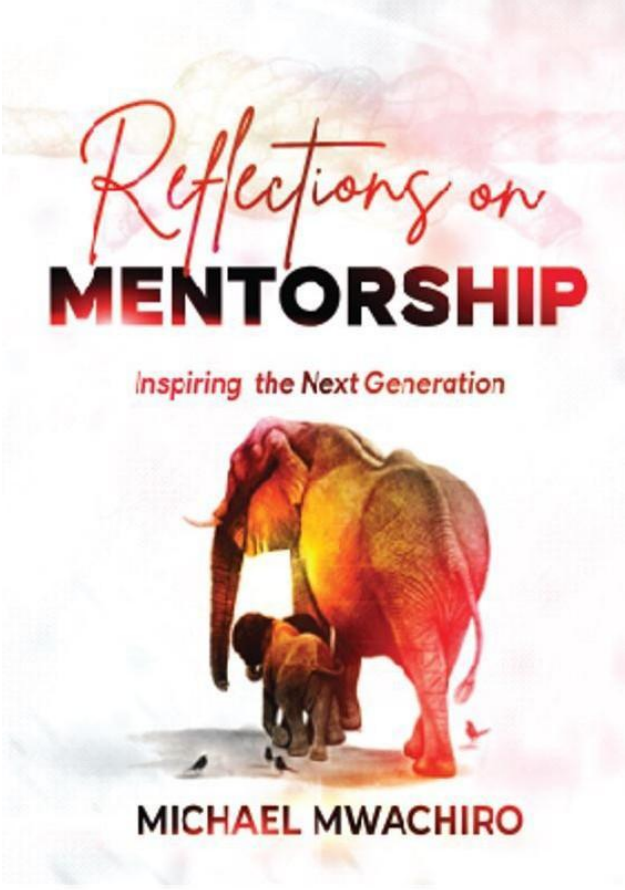
What does the future look like?

What does the future look like?

- Engaging more alumni in leadership
- Training programs/ exchanges
- Mentorship
- Missions
- Research collaborations

Paying it forward…

- The impact of mentorship and sponsorship
- Participation in regional meetings for networking
- **“Sometimes the struggle or fear is that the mentees can eclipse their mentors, but in my opinion, this is the <u>ultimate prize</u> of good mentorship and allows the mentor to <u>bask in the reflected light</u> of the success of their mentees.”**



Impacting the next generation…

Thank you

- Email: drdechemwach@gmail.com
- Twitter: @MichaelMwachiro