PROGRESS REPORT, PHERT

NAME: Walong, Edwin Owino Oloo

eRA COMMONS USER NAME: WalongEO

POSITION TITLE/INSTITUTION: Lecturer, Anatomic Pathology Unit, Department of Human pathology, School of Medicine, The University of Nairobi

Educational Qualifications

<table>
<thead>
<tr>
<th>INSTITUTION AND LOCATION</th>
<th>DEGREE (if applicable)</th>
<th>Completion Date MM/YYYY</th>
<th>FIELD OF STUDY</th>
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</thead>
<tbody>
<tr>
<td>School of Medicine, University of Nairobi, Kenya</td>
<td>MBChB</td>
<td>12/2005</td>
<td>Medicine</td>
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<tr>
<td>Department of Human Pathology, School of Medicine, University of Nairobi, Kenya</td>
<td>MMed (Pathology)</td>
<td>12/2012</td>
<td>Residency in combined Anatomic and Clinical Pathology</td>
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<tr>
<td>Fellowship in Public Health Research (PHERT), University of Nairobi, Kenya and University of Washington, WA, USA</td>
<td>Fellowship</td>
<td>Ongoing (Expected Completion Date: December 2019)</td>
<td>Public Health and Research</td>
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<tr>
<td>Doctor of Philosophy, East African Kidney Institute, University of Nairobi. Topic: Acute Kidney Injury associated with severe childhood pneumonia</td>
<td>PhD Candidate</td>
<td>Ongoing (Concept, October 2021)</td>
<td>Medicine</td>
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A. Personal Statement

I am a Lecturer at the Anatomic Pathology Unit, Department of Human Pathology, School of Medicine, University of Nairobi. In addition to teaching and instruction, I provide clinical service as a pathologist in a busy referral hospital (Kenyatta National Hospital, Nairobi, Kenya). Over the last 5 years, I have participated in autopsy studies aimed at establishing causes of severe pneumonia in deceased children. In this we established that syndrome based clinical management protocols appear limited in preventing mortalities due to severe pneumonia in children. In addition, hospital acquired infections such as *Klebsiella* and viral infections such as RSV are important etiological agents. Notable innovations in this is the application of genetic diagnostic tools to identify the etiology of fatal pediatric pneumonia and the use of immunohistochemistry to classify pediatric immune deficiency. I have plans to establish projects in Kenya, that will influence policy and guide research into infectious diseases and other non-communicable diseases that affect children and young people in Kenya.
B. Positions and Honors

APPOINTMENTS

2006-2007  Medical Officer (Intern), Jaramogi Oginga Odinga Teaching and Referral Hospital, Kisumu, Kenya

2007-2014  Registrar and Tutorial Fellow, Anatomic Pathology Unit, Department of Human Pathology, University of Nairobi, Kenya

2014 – present  Lecturer, Anatomic Pathology Unit, Department of Human Pathology, University of Nairobi, Kenya

2014 – present  Honorary Specialist Pathologist, Department of Laboratory Medicine, Kenyatta National Hospital, Nairobi, Kenya

PROFESSIONAL AFFILIATIONS


2012.  Member, Kenya Association of Clinical Pathologists

2012.  Treasurer, East African Division of the International Academy of Pathologists

2014.  Founder Fellow, College of Pathologists of East, Central and Southern Africa

HONOURS

2011  Postgraduate Research Gift Fund, Research Care and Training Program, Center for Microbiology Research, Kenya Medical Research Institute.

2007  University of Nairobi Graduate Scholarship for the study of Master of Medicine (MMed) in Pathology

2014  Young Investigators Scholarships, The International Academy of Pathology (IAP) congress in Cape Town, South Africa (2012) and Bangkok, Thailand

C. Progress Report, PHERT Fellowship

My first exposure to research was in 2010 when I received a small grant to examine the role of progesterone in horizontal female to male transmission of HIV, where I established that there was suppression of proinflammatory cytokines in the genital tract of women living with HIV in Western Kenya through a case-control study. These are described here:

1. **Edwin Walong**, Anne Barasa, Christopher Gontier. Depot medroxyprogesterone acetate use is associated with increased median peripheral blood CD 3 and CD 4 cell counts among Antiretroviral therapy naïve women living with HIV. Biorxiv, 2016. Doi: [https://doi.org/10.1101/066225](https://doi.org/10.1101/066225)


In 2013, together with a team from the influenza division of the Centers for Disease Control (CDC), the CDC intelligence unit, Pathologists from the University of Nairobi, Kenyatta National Hospital, the division of High Consequence Pathogen division of the CDC based in Atlanta, Harvard University and the University of Washington, we implemented the largest autopsy series for identification of the causes of death due to severe lower respiratory tract illness. Because of the PHERT fellowship, we were able to publish two manuscripts and have utilized the data to support graduate training in pathology.


In addition, the following graduate students have utilized specimens and data obtained from the pediatric autopsy study described above, for their dissertation. These were submitted to the department of human pathology to facilitate their studies.

1. Dr Mathaiya John. ‘Patterns of paediatric respiratory infectious pathology’. MMed (Human Pathology) dissertation, UoN.
2. Dr Orata Noelle. ‘Central Nervous System pathologic features in children with respiratory infections, an autopsy-based study’. MMed (Human Pathology), UoN.
3. Dr Lilian Bosire. ‘Bone marrow morphological changes due to Severe Respiratory Infections, an autopsy study’. MMed (Pathology) Dissertation, Department of Human Pathology, UoN.
4. Washington Ochieng. ‘Lung Touch Imprint Cytology obtained during Forensic Autopsies for Infectious Disease Surveillance’. Thesis for the award of MSc Clinical Cytology, Department of Human Pathology, UoN.
5. Dr Catherine Samo. ‘Splenic and Thymic morphology in Severe Respiratory Infection’. MMed (Pathology) Dissertation, Department of Human Pathology, UoN.
6. Dr Lawrence Obonyo. ‘Thrombotic Microangiopathy due to Paediatric Severe Acute Respiratory Illness related mortality’. Dissertation for the award of MMed (Pathology), Department of Human Pathology, UoN.

Additionally, because of the exposure, I have worked in collaboration with various scientists in broad thematic areas.

1. Lilly Nyagah, Peter Young, Andrea Kim, Joyce Wamicwe, Maureen Kimani, Wanjiru Waruiru, Emily Rogena, Johansen Oduor, Edwin Walong, Anthony Waruru, Julius Oyugi, Marie Downer, Kevin De Cock, Martin Sirengo. HIV-related deaths in Nairobi, Kenya: Results from a HIV mortuary surveillance study, 2015. Accepted for Publication, JAIDS 81:18–23, 2019.
6. Nkonge E, Rogena E, Walong E and Nkonge D. Cytological evaluation of breast lesions in symptomatic patients presenting to Kenyatta National Hospital, Kenya: a retrospective study. BMC Women’s Health 2015, 15:118

Because of additional research training, I have applied the competencies gained in improving the research visibility of autopsy pathology practice in Kenya, with these manuscripts submitted for publication in forensic pathology journals.

My current research activities are appended here. These include research work supported by the PHERT project and others whose hypotheses were generated in the course of PHERT related course work.

2. June 2017 to date: Acute Kidney Injury as a contributor to paediatric mortality due to Severe Acute Respiratory Illness (SARI). Supported by the PHERT project
3. January 2016 to date: Principal Investigator, ‘causes of death among persons living with HIV and on HAART at KNH, an autopsy study’ PACT project, Department of Internal Medicine, University of Nairobi.
4. June 2017 to date: Investigator, Post mortem interval, its influence on the lung microbiome and analytical challenges in the diagnosis of fatal paediatric pneumonia using molecular diagnostic techniques. Funded by Bill and Melinda Gates Foundation through the MITS Alliance and KEMRI/CDC.

Because of these, I have participated in n workshops and strategic meetings.

1. 22 May 2019: Panel Discussion, strategies for expanding Minimally Invasive Tissue Sampling (MITS) for mortality investigation in resource limited sessions. The 2nd Annual MITS Alliance workshop, held at the Marriot Suites, Seattle Washington.
2. 8 April 2019: Case studies of Mortality due to Primary Immune Deficiencies. The Annual Congress of the Kenya Paediatric Association, Whitesands Hotel, Mombasa, Kenya.
4. 10 October 2018: Tuberculosis and Paediatric Pneumonia: Insight from a respiratory tract infectious mortality study and perspectives from a Kenyan urban tertiary health care facility. Presented at the Annual Conference of the Association of the Kenyan Medical Laboratory and Scientific Officers, Pride Inn Hotel and Conference Centre, Mombasa, Kenya.
7. 8th August 2018: Autopsy studies and their relevance to global health, my experience as a Kenyan d43 fellow. Afrehealth D43 Principal Investigators Conference, Durban, South Africa.