

Science writing workshops for AIDS vaccine researchers in Africa

Donna Rubens

International AIDS Vaccine Initiative, New York, USA

Correspondence to:

Donna Rubens
International AIDS
Vaccine Initiative
New York, USA
drubens@iavi.org

Abstract

The International AIDS Vaccine Initiative (IAVI) is a global scientific and advocacy organisation dedicated to ensuring an AIDS vaccine for use worldwide. In Africa, IAVI partners with seven research centres who conduct vaccine trials and studies. This research requires extensive medical and scientific writing support, for regulatory submissions and for the publication of data. IAVI and its African partners publish widely in international peer-reviewed publications; however, African authors are underrepresented as first authors. To address this disparity, IAVI created and honed a series of science writing workshops that so far has reached 85 investigators.

Keywords: Medical writing in Africa, Science writing workshops, Manuscript writing

Since AIDS was identified 32 years ago, more than 30 million people have died from the disease. Today, some 34 million people are living with HIV, the virus that causes AIDS, and the number newly infected continues to far outpace global efforts to treat the disease. The International AIDS Vaccine Initiative (IAVI) is dedicated to ending the AIDS epidemic by hastening the development of a preventive vaccine against HIV. Its work is largely supported by development funds from government donors, most notably the United States Agency for International Development (USAID), which is IAVI's single largest donor. European donors include the governments of Denmark, Ireland, Netherlands, Norway, Spain, and the UK. IAVI also receives support from foundations, corporations, and individuals around the world.

Established in 1996, IAVI has long been committed to building the scientific capacity of developing countries, where HIV has exacted its greatest toll and where much of the organisation's vaccine development efforts are focused. These efforts, which have enjoyed the full support of USAID and other public sector donors, have contributed to the first clinical assessment of an AIDS vaccine candidate

tailored to the epidemic in East Africa and the conduct of the first AIDS vaccine trials in Kenya, Zambia, and Rwanda. IAVI has helped to build capacity for HIV vaccine research and development in these and other developing countries and supported the efforts of their researchers to join the global scientific discourse. Improving the quality and volume of the medical and scientific literature produced by partnering institutions in Africa has been an important part of these efforts.

IAVI-sponsored clinical research in Africa

IAVI's global research & development effort spans the continuum from applied research concentrated in the US, UK, and India, to early clinical evaluation of candidate vaccines and HIV epidemiology concentrated in Africa, the US, and UK.

These activities require extensive medical and scientific writing support, not only for the publication of data but for regulatory submissions that are essential to the legal and ethical conduct of clinical research. IAVI's clinical partners in Africa contribute to the production of documents for local regulatory review, clinical study reports and responses to laboratory and quality systems audits. Scientific writing for publication, the major focus of this paper, is taken up in detail below.

Building capacity for scientific publishing by our partners in Africa

To conduct HIV vaccine trials and studies in Africa, IAVI partners with national and international research institutions in Kenya, Uganda, Rwanda, Zambia, and South Africa to establish a network of HIV vaccine trial and study centres (Table 1).

Addressing disparities in publication output

Circumstances are favourable to boost the publishing output of IAVI's collaborating African researchers. Although Africa's contribution to the worldwide research literature is comparatively small,¹ publications

Table 1: IAVI's Primary Clinical Partners in Africa

Country	Collaborating centre		Type of affiliation
Kenya	KAVI	Kenya AIDS Vaccine Initiative, Nairobi and Kangemi	Academic: University of Nairobi
Kenya	CGMRC-KEMRI	Centre for Geographic Medicine – Coast, Kilifi	Government: Kenya Medical Research Institute
Uganda	UVRI-IAVI	Uganda Virus Research Institute-IAVI HIV Vaccine Program, Entebbe	Government
Uganda	UVRI-MRC	Uganda Virus Research Institute-Medical Research Council on HIV/AIDS, Masaka Field Station	Government
Rwanda	PSF	Projet San Francisco, Kigali	Academic: Emory University (USA)
Zambia	ZEHRP	Zambia Emory HIV Research Program, Lusaka	Academic: Emory University (USA)
South Africa	AI-Rustenburg	Aurum Institute, Rustenburg	Independent non-profit (corporate spin-off)

tend to be concentrated in medicine, immunology, and microbiology.² International partnerships are central to this output (see Table 1). Kenya contributes more to the scientific literature than many other countries in sub-Saharan Africa – the University of Nairobi and KEMRI (Table 1) are major nodes – and South Africa's productivity is ranked high and growing rapidly.

But how much of this output is led by African researchers? An analysis of the peer-reviewed scientific papers co-authored with IAVI-affiliated researchers since 2005 reveals that African nationals are underrepresented as first authors. Among 129 such papers published since 2005, 27 (21%) have an African national as the first author, and 33 of the papers (26%) have an African national as the second or third author. However, the percentage is more than twice as high for conference abstracts. Among 244 conference abstracts, half had African nationals as first authors.

IAVI's scientific writing workshops

IAVI has since 2009 sponsored four scientific writing workshops to improve the scientific writing skills of

partnering researchers (see Table 2). Although IAVI leads the publication of results from clinical trials and major studies, IAVI-supported studies generate a treasure trove of data that can be mined by co-investigators for additional publication.

Abstract writing (2009)

IAVI convened its first scientific writing workshop in 2009, in response to an expressed need by IAVI's East Africa Regional Office and collaborating researchers (Table 2). The presenter was Monique Oliff, who holds a PhD in international public health from the London School of Hygiene & Tropical Medicine. This and subsequent workshops were not part of an institutional programme of scientific writing but a modest attempt to fill a perceived skills gap for researchers who wished to build a publication record. In a one-day workshop on 14 August, researchers at Uganda Virus Research Institute (UVRI) learned the principles of abstract writing, how to identify publishing opportunities, and how to create a culture of peer review so they would continue to have access to editorial support.

Table 2: IAVI-sponsored science writing workshops for African researchers, 2009–2011

Workshops	Presenter (sponsor)	Structure/content	Participants
Abstract Writing 2009 Uganda	Monique Oliff, PhD Wellsense International Public Health Consultancy (IAVI)	<ul style="list-style-type: none"> • 1-day workshop, August 2009 • Content: Principles of abstract writing, awareness of publishing opportunities, peer/staff review 	14 research staff from 2 collaborating clinical research centres (CRCs) in Uganda
Abstract & Manuscript Writing 2010 Kenya	Joseph Oloo Mugah, PhD, Managing Director, SCIDCOM International and Daisy Ouya, MS, IAVI (IAVI)	<ul style="list-style-type: none"> • 6-day Intensive, May 2010 • Content: Abstract preparation, drafting scientific paper, illustrations, editing, publishing process, web tools 	<ul style="list-style-type: none"> • 10 early career researchers • 6 CRCs in Uganda, Kenya, Rwanda, South Africa, Zambia
Manuscript Writing 2010/2011 Kenya, Uganda, Rwanda	Randall Kaja, MS, Pfizer Global Health Fellow (IAVI)	<ul style="list-style-type: none"> • Four 2-part, workshops Aug-Feb 2010/2011 Combining daylong classroom instruction writing exercises, one-on-one • Content: Data mining, manuscript essentials, choosing a journal, research ethics, overcoming writer's block, grammar and word usage 	<ul style="list-style-type: none"> • 40 researchers/lab personnel • 4 CRCs in Kenya, Uganda, Rwanda • Includes 20 one-on-one mentees
Grant Writing 2011 Rwanda	Tendesayi Kufa-Chakezha, MPH, Aurum Institute (IAVI/First Lady of Rwanda's Imbuto Foundation)	<ul style="list-style-type: none"> • 2-day workshop, Nov 2011 • Content: Finding grants, elements of grant proposal, importance of following guidance, overview of study design, how to write concept note 	<ul style="list-style-type: none"> • 20 junior-to-mid-level professionals • 4 CRCs in Kenya, Uganda, Rwanda, Zambia • National University of Rwanda/ other

Abstract and manuscript writing (2010)

The following year IAVI sponsored a workshop on abstract and manuscript writing for early career researchers working on IAVI sponsored trial and study protocols. Ten researchers from collaborating clinical research centres in Uganda, Kenya, Rwanda, South Africa, and Zambia attended this intensive, 6-day classroom-based training. The instruction helped build skills in drafting, editing, and submitting scientific papers, including the preparation of tables and illustrations and the application of web tools to improve manuscripts.

Manuscript writing (2010/2011)

Positive feedback on these early workshops prompted IAVI to consider more sustained skills-building opportunities in medical and scientific writing for researchers at collaborating research centres in Africa. IAVI tapped the support of Pfizer's Global Health Fellows programme, the company's international corporate volunteer programme, which places its highly skilled colleagues in short-term fellowships with leading international health organisations. It designed to strengthen access, quality, and efficiency of health services in under-resourced communities around the world.

From September 2010 to February 2011, Pfizer Global Health Fellow Randall (Randy) Kaja, MS, drew on his extensive background in medical writing and clinical operations to train researchers at clinical research centres in scientific writing. The 6-month fellowship allowed for fluid, intensive instruction in science writing for investigators at Kenya AIDS Vaccine Initiative (KAVI), UVRI, and PSF, delivered through classroom-based training, assigned writing exercises, and individual editorial assistance and mentoring. Daisy Ouya, MS, board-certified science editor (BELS) and IAVI's communications manager at that time, helped develop the curriculum and prepare course materials. In the first part of the workshop, Mr Kaja brought students together for formal instruction, sent them off with specific exercises designed to improve their papers, and then brought them back together weeks later for a follow-up workshop. He also offered help individually to researchers before, during, and after the workshops, as needed.

Over the course of his fellowship, Mr Kaja also assessed the participants' skills, including their ability to access study-specific data, to conduct a literature review, and to organise material within a paper. He evaluated their technical writing skills, incentives to publish, and provided support in data analysis, and adjusted the workshops to suit their particular needs. Mr Kaja also delivered a

condensed version of the training, without writing exercises, for lab techs and research nurses at KAVI. Two participants even travelled to IAVI's East Africa Regional Office in Nairobi on more than one occasion to obtain support from Mr Kaja and a contract statistician.

In all, 40 people participated in the programme, including a few graduate students preparing final reports for Masters in Public Health or similar programme requirements. Twenty of the participants met individually with Mr Kaja, sometimes weekly. Ms. Ouya reviewed materials and provided feedback along the way. She also participated in the workshops for KAVI senior researchers, led discussions on several topics, and helped showcase IAVI's scientific writing workshops on the USAID Impact Blog, in a post co-authored with USAID's Margaret McCluskey, Senior Technical Advisor, HIV Vaccines.

Grant-writing (2011)

In November 2011, IAVI co-hosted a grant writing workshop with the Imbuto Foundation, which is headed by the First Lady of Rwanda. Led by consultant Tendesayi Kufa-Chakezha, MPH, an epidemiologist at the Aurum Institute in South Africa, the 2-day workshop introduced 20 junior and mid-level professionals to the basics of finding grants and the elements of a grant proposal. The participants included many physicians from the National University of Rwanda's Kigali Teaching Hospital, along with four staff from IAVI-supported research centres in Kenya, Uganda, Rwanda, and Zambia.

OCTAVE, an online learning platform

IAVI contributes to the NIH OCTAVE project (Online Collaborative Training for AIDS Vaccine Evaluation) that includes manuscript writing. The 2013 programme using the Kenya AIDS Indicator Survey (KAIS II) data set culminates in the submission of manuscripts by participants to a peer-reviewed journal for publication around World AIDS Day (1 December).

What IAVI has learned from the workshops

The workshops were very well received by participants, based on written evaluations from the 2010/2011 manuscript writing workshop and grants writing workshop in 2011, as well as interviews with workshop presenters Randy Kaja and Daisy Ouya and IAVI's Regional Director, Africa. With one exception, the various formats offered benefits; however, the 6-day workshop proved too intensive

for most participants with too little time to practice. The residency format that allowed for extensive individual support seemed most conducive to manuscript preparation. Two participants from the UVRI-IAVI HIV Vaccine Trials Unit who attended the 2009 Abstract Writing workshop had abstracts accepted for poster sessions at the 2010 International AIDS Conference (*AIDS 2010*) in Vienna. Each also subsequently had an abstract accepted for *AIDS 2012*, in Boston, as did two other IAVI affiliated researchers. A KAVI researcher who worked with Mr Kaja over several months had a manuscript accepted for publication in PLoS One. She also had abstracts accepted for poster presentations at the *AIDS Vaccine 2011* conference in Bangkok and at the *6th Conference on Global Health and Vaccination Research* in Oslo, Norway (2011).

When Mr Kaja started his workshops, he found that many researchers were eager to publish but faced what he described as a ‘chasm between the data and the blank page’. Others were better prepared to handle the challenges of analysing data in a manner fit for publication, but were simply stalled in the drafting process. They were eager to learn about the mechanics of technical writing – how to link the introduction and discussion sections, for example, or to present results using tables and illustrations. In response to a written survey, many of the participants simply wanted ‘more’: longer sessions, more hands-on training, more details about writing up different types of research.

‘KISS’ principles (Keep It Short and Simple) were noted as a favourite topic, but few respondents wanted to dwell on grammar and punctuation, even though Mr Kaja viewed this as a critical skills gap and recommended that a demonstration of proficiency in these areas be a prerequisite for attendance in future scientific writing workshops.

Other barriers also became clear during the workshops, such as limited access to statistical analysis and uncertainty about research ‘ownership’ and the publication plan. Unlike academia, the clinical research settings tend not to be ‘publish or perish’ research environments. With fewer incentives,

investigators must find time to write on the margins of their workday, without expectation of promotions or merit increases.

Conclusion

IAVI’s science writing workshops reached nearly 85 young, early career, and senior researchers at IAVI’s collaborating clinical research centres in Uganda, Kenya, Zambia, Rwanda, and South Africa and at other health-related institutions. The workshops gave early and mid-stage investigators a place to start in their efforts to build a base of publications, and roadmaps for the development of required skills. We believe that the general findings are applicable to other organisations wishing to introduce scientific writing workshops. The residency model of group training combined with one-on-one editorial assistance and mentoring may offer the most potential for successful outcomes. However, any format must be combined with institutional incentives for publishing. Capacity building remains a core commitment for IAVI and its partners, who are increasingly helping to build the technical capabilities of research institutions in the region. IAVI will continue to foster scientific writing skills at partner institutions as part of that larger effort.

Acknowledgements

I would like to thank Bonnie Bender, IAVI Regional Director, Africa and Daisy Ouya for their insights and helpful suggestions in preparing this document. IAVI acknowledges the United States Agency for International Development (USAID) for its generous support of IAVI’s capacity-building work in Africa.

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Author information

Donna Rubens is IAVI’s Senior Writer for Resource Mobilisation in New York. She has a BS in Biology and a PhD in medical anthropology and is a member of the American Medical Writers Association.