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The DOI for this manuscript is doi: 10.5858/arpa.2013-0732-CC

The final published version of this manuscript will replace the Early Online Release version at the above DOI once it is available.

Proceedings of the African Pathologists Summit; March 22–23, 2013; Dakar, Senegal

A Summary

African Pathologists' Summit Working Groups

• **Context.**—This report presents the proceedings of the African Pathologists Summit, held under the auspices of the African Organization for Research and Training in Cancer.

Objectives.—To deliberate on the challenges and constraints of the practice of pathology in Sub-Saharan Africa and the avenues for addressing them.

Participants.—Collaborating organizations included the American Society for Clinical Pathology; Association of Pathologists of Nigeria; British Division of the International Academy of Pathology; College of Pathologists of East, Central and Southern Africa; East African Division of the International Academy of Pathology; Friends of Africa—United States and Canadian Academy of Pathology Initiative; International Academy of Pathology; International Network for Cancer Treatment and Research; National Cancer Institute; National Health and Laboratory Service of South Africa; Nigerian Postgraduate Medical College; Royal College of Pathologists; West African

Division of the International Academy of Pathology; and Faculty of Laboratory Medicine of the West African College of Physicians.

Evidence.—Information on the status of the practice of pathology was based on the experience of the participants, who are current or past practitioners of pathology or are involved in pathology education and research in Sub-Saharan Africa.

Consensus Process.—The deliberations were carried out through presentations and working discussion groups.

Conclusions.—The significant lack of professional and technical personnel, inadequate infrastructure, limited training opportunities, poor funding of pathology services in Sub-Saharan Africa, and their significant impact on patient care were noted. The urgency of addressing these issues was recognized, and the recommendations that were made are contained in this report.

(*Arch Pathol Lab Med*. doi: 10.5858/arpa.2013-0732-CC)

The African Pathologists Summit was held March 22–23, 2013, in Dakar, Senegal. The goal of the conference was to deliberate on the challenges and constraints faced by African pathologists in the practice of pathology, including the impact of inadequate infrastructure, limited personnel (pathologists and technicians), and poor funding for simple supplies such as reagents. It was anticipated that the deliberations would result in the development of a framework that will allow effective and comprehensive tackling of the issues affecting pathology in Africa. Therefore, the deliberations were focused on the following issues: (1) updating the knowledge base of practicing pathologists in a sustainable way, (2) enhancing the quality of training of current pathology trainees and technical staff,

(3) addressing the need for training in appropriate new technologies when relevant to the level of practice, (4) addressing the need for continuous quality improvement and quality assurance, and (5) addressing the need for advocacy to private funding agencies (local and international) and government or ministries of health.

There was a consensus that specific strategies are needed. These include

(1) improving pathology diagnostic service, with definition of modalities for ensuring uniform standards across all regions; (2) establishing regional educational training programs in basic clinical knowledge and research techniques or methodology, with awareness of the need to effect knowledge transfer with application of newer technologies; and (3) developing clinical and translational research that will produce appropriate information critical for policy making decisions.

It was agreed that pathologists in Sub-Saharan Africa (SSA) must pull together and leverage available resources. This is embodied in the theme of the conference, which was “Building International and Local Bridges in Pathology.”

In addressing the stated objectives, a 2-pronged approach was adopted. The first approach was to have key individuals with practice experience in the various African regions present information on the state of the art of pathology

Accepted for publication February 10, 2014.

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Table. Program for the African Pathologists Summit; March 22–23, 2013; Dakar, Senegal

Day 1

Welcome to Dakar: Serigne Magueye Gueye, Lynn Denny

Keynote address: the place of pathology in oncologic practice from the perspective of a clinical oncologist: I. F. Adewole

Setting the agenda: Adekunle Adesina

Defining and maintaining the standard: a case for quality assurance in diagnostics and developing a state of the art in pathology diagnostics:

- (1) Current state of practice: the resource-poor African pathology experience: Shaheen Sayed, Yawale Iliyasu, Victor Mudenda, Edwin Wiredu
- (2) Current state of the practice: experience in the non-resource-poor environment: Adekunle Adesokan
- (3) Defining the practice goals in a resource-poor environment without lowering standards: the nuts and bolts, including tissue processing, turnaround time, pathology reporting, and recommendations for tumor staging: Jaiye Thomas-Ogunniyi
- (4) Developing a quality management system, including forms, policies, procedures (standard operating procedures) and work charts (work aids), quality indexes and monitors, and proficiency testing adapted to indigenous practice: Frances Ikpatt
- (5) International bridges for consultation and CME—International Network for Cancer Treatment and Research model: Nina Hurtwitz
- (6) Assuring quality in pathology: Alec Howat

Training in diagnostic pathology:

- (1) The African experience: West African College of Physicians; Nigerian Postgraduate Medical College; College of Pathologists of East, Central and Southern Africa; and East African Master of Medicine models: upgrading curriculum for postgraduate training in pathology: Femi Ogunbiyi, Edda Vuhahula, Ahmed Kalebi
- (2) The francophone experience: Mohenou Diomande
- (3) Training models 1: the Royal College of Pathologists experience: Kenneth Flemming
- (4) Training models 2: the Accreditation Council for Graduate Medical Education perspective: Tarik Tihan

Breakout session:

- (1) Raising the standard in diagnostics/training/advocacy: breakout discussion
- (2) Summary of breakout session discussion groups

Demo of iPath (www.ipath-network.com/inctr/): Nina Hurwitz

Day 2

Training in clinical and/or translational research

- (1) Communicating clinical research (what is a good paper?): Michael Wilson
- (2) African pathology consortium and how research may be supported: local and international grants and developing grant-writing skills: Folakemi Odedina
- (3) Pathology as the foundation of care: a call for action: Shahla Masood

Provision and maintenance of quality pathology services: the National Health and Laboratory Service (government provider) perspective: Sagie Pillay

Pathology registries: the ultimate and critical tool for epidemiology and strategic planning: Timothy Rebbeck

Closing the implementation gap: the role of specific research proposals in advancing global health: John Flanigan

Pathology advocacy: the backbone for private and government support: the nuts and bolts, including advocacy efforts and government outreach/advocacy through the private sector: Rosy Emodi

Regional bridges for pathology education: Michael Wilson

Tissue and biobanking in a resource-poor setting: Timothy Rebbeck

Pathologist without borders: the Italian experience: Leoncini Lorenzo

CME and maintenance of standards, including the role of telepathology and use of newer technologies in training: international and regional CME conferences; visiting pathologists and exchange programs; technical staff training and education: Adekunle Adesina

The African International Academy of Pathology Assembly: an update: Ann Nelson

Breakout session:

Raising the standard in diagnostics/training/advocacy: breakout discussion 2

Closing summaries

Abbreviations: CME, continuing medical education.

practice, postgraduate training, and pathology research in SSA. This was followed by presentations on the practice of pathology and the models of postgraduate training in the West, including the United Kingdom and the United States. There was an effort to stimulate African pathologists to strive (despite the challenges) to achieve excellence in clinical practice, while using locally available resources with appropriate quality assurance and quality control measures (Table).

The second approach was to use the process of deliberations by breakout working groups (Addendum) to generate a wider scope of discussion of the issues and to generate the recommendations for implementation. The 4 working groups were given the following assignments: (1)

pathology diagnostics and related issues; (2) pathology training, with emphasis on clinical training; (3) research training and acquisition of newer technologies; and (4) pathology advocacy. These working groups used the information from the various presentations and the experience of the participants to deliberate and develop working group reports, with the recommendations outlined herein.

WORKING GROUP REPORTS

Pathology Diagnostics Working Group Report

The objective of this group was to focus on possible changes that could be effected in SSA with or without an

increase in currently available budgets, with emphasis on achieving and maintaining excellent technical quality and diagnostic accuracy. Possible approaches to problems facing pathology diagnostics were considered. Therefore, the discussion was centered around the following 3 major goals: (1) shortening or reducing turnaround time, with the goal of achieving turnaround times of 3 days for small biopsies and 5 days for large biopsies; (2) developing collaboration with clinicians, with the goal that all pathologists should participate in tumor boards with surgical and medical clinicians; and (3) defining minimum standards for equipment and tissue processing to ensure timely reporting and high-quality diagnosis.

The discussion then followed a step-by-step progression of the pathology tissue handling process from specimen acquisition to final reporting. The following recommendations were agreed on.

Step 1: Specimen Collection, Labeling, and Consultation Request.—(1) There should be documented technical standards for collection, identification, and fixation in the form of a standard operating procedure (SOP). The SOPs should apply in the operating room, as well as the pathology laboratory. (2) A standardized consultation or requisition form should be provided and should include pertinent information such as patient identification, specimen source, anatomic orientation marking, clinician identification, and contact information. (3) Specimen containers with appropriate 10% formalin fixative should be supplied by the pathology department. Specimens should be transported by hospital personnel and not given to family members. If the preservative quality is unknown, all specimens should be placed in fresh 10% formalin on arrival in the laboratory. (4) The minimum standard for information tracking on every specimen is a logbook, with entries including patient identification, clinician information, and time of registration for each processing step within the pathology laboratory.

Step 2: Specimen Processing.—(1) All specimens should be grossed and processed on the day of arrival in the laboratory. Delayed processing will be at the discretion of the pathologist, for example to ensure adequate tissue fixation. (2) All grossing stations should include ventilation, which may be natural or mechanical, and a digital camera. (3) With adequate training, available SOPs, and supervision, pathology assistants can be assigned grossing duties. (4) An automatic processor is the minimum equipment for tissue processing, for which there should be a manual backup. (5) An embedding station, water bath, and microtome are minimum equipment, for which there should be backup equipment.

Step 3: Reporting.—(1) Synoptic reporting supported with paper templates or (preferably) appropriate software is the minimum standard. (2) Reports should be distributed in a timely fashion (if necessary) by personnel with reporting responsibilities to the pathology laboratory. Reports should be made available to tumor boards and to the cancer registry automatically.

Additional Recommended Principles for Raising the Standards of Diagnostic Pathology.—(1) Every laboratory should be affiliated with a program to seek accreditation. Potential programs include the World Health Organization and the International Organization for Standardization 15189. Clinical Laboratory Improvement Act certification is generally not needed. (2) All laboratories should seek to maximize efficiency, as measured by turnaround time. (3) All laboratories require adequate finance and organization

for procuring consumable supplies. This process should be controlled by the laboratory. (4) All laboratories should be involved in continuous quality improvement. (5) Well-trained, adequately supervised pathology assistants and technologists can improve quality and turnaround time. Pathologists should set training standards, establish SOPs, and oversee employment of these providers.

Potential (Future) Working Group Topics.—In view of the time constraints, some essential topics were not discussed. The following were recommended as potential (future) working group topics: (1) establishment of technical specifications for equipment functioning in low-resource environments subjected to electrical variability and without air-conditioning; (2) establishment of technical specifications for reagents and supplies used in low-resource environments without air-conditioning or refrigeration and subjected to electrical variability; (3) review of existing SOPs to choose those best fitted for the needs of developing countries; (4) outline of specifications for an appropriate package of laboratory management and reporting software for pathology laboratories, as well as investigation of how such can be made available as a standardized package at an affordable price; (5) formation and promotion of tumor board conferences with local participation and consideration of participation at distance by specialist partners; and (6) definition of resource-appropriate equipment and diagnostic tests for laboratories with basic, mid-level, and advanced-level capabilities, as well as definition of tiers of service for specialty tests (eg, immunohistochemistry) based on processing volume.

The following are potential areas for further investigation and potential projects:

(1) There is a need to develop a laboratory information database software appropriate for use in low-resource settings. This should have the potential to expand when more sophisticated capacity is added. (2) For monitoring improvement and progress, there is a need to collate appropriate data on the impact of SOPs on diagnostic accuracy, impact of improved technical specifications for equipment on reliability and turnaround time, and impact of synoptic reporting on cancer registry and disease surveillance.

Clinical Pathology Training Working Group Report

The following represents a summary of the deliberations on the challenges and issues related to clinical training by the working group. The format of this part of the report takes the form of identifying specific problems or issues affecting clinical training, followed by recommended solutions.

Challenges With Potential to Discourage the Growth and Sustenance of Pathology.—(1) Inadequate remuneration, poor work environment, and low standard of living of pathologists exist compared with other disciplines. (2) Pathology departments are often located in the most remote and unattractive part of the hospital. (3) There is a lack of subspecialty practice in many countries. (4) The pathologists are behind the scene, and the clinicians get all the perks, despite pathologists' making the diagnosis. (5) Problems of inadequate administrative support abound.

Possible Solutions to These Challenges.—(1) A potential solution is that pathologists need to be more proactive and sell the discipline better; we have been too quiet. Active participation and setting up of a fine-needle aspiration practice and clinic, for example, represent

excellent avenues to have better interaction with patients and be visible at the forefront of patient care. (2) Pathologists should show better leadership and comportment and demonstrate better work ethics. (3) Pathologists need to be more passionate and emphasize the importance of their work. For example, pathology departments (when possible) should encourage postgraduate internship, which can be used as credit toward a residency training year.

Targeting Potential Trainees.—Inadequate personnel remains a challenge in SSA Relevant questions are how can pathology be made more attractive and how can we showcase the discipline? In this regard, the following 12 topics were considered: (1) The medical school pathology curriculum needs to be taught in the context of the clinical scenario so that medical students can appreciate the clinical significance of the discipline. Efforts should be directed at making pathology lectures more illustrative and interactive. The impact of changing lecture style and delivery on the interest level of students cannot be overemphasized. (2) Medical students should be encouraged to participate in autopsy sessions and in writing autopsy reports as part of the pathology rotation (using the autopsy as an excellent teaching tool, with emphasis on clinical relevance). (3) University awards should be instituted for the best students in pathology. (4) Medical student or internship rotation in pathology should be encouraged or scheduled. For example, at the University of Ghana Korle-Bu Teaching Hospital in Accra, the pathology department is working with the department of medicine and now includes a 2-week to 3-week exposure to pathology during the internal medicine rotation in hematology for house officers and interns. (5) Pathologists need to be good passionate mentors and foster better relationships with students and residents. (6) The participation of medical students and residents in faculty research activities should be encouraged. (7) Clinical pathology conferences with clinicians should be encouraged. This is an opportunity for pathologists to showcase their role and significance in the health care system. (8) Pathology societies or colleges should encourage the organization of scientific conferences, to which good students can be sponsored. (9) Holiday or summer internships should be encouraged, as well as pathology interest groups among medical students. (10) Sponsorship or scholarship for pathology training or clinical incentive or supplementation should be given to residents joining pathology residency training programs. (11) Training of laboratory support staff should be emphasized, and medical laboratory programs should be made attractive. For example, there is the false perception in Malawi that the use of the microtome represents manual labor. (12) Close follow-up should be maintained of interested medical students who have finished the medical school pathology course after graduation to attract them to pathology.

Residency Training Issues.—Residency training issues discussed were 2-fold The following 2 broad questions were addressed.

How Do We Train Residents to Be Relevant to the Environment?—(1) Ensure an objective and friendly curriculum that introduces the teaching of basic laboratory processes, emphasizing the requirement of competency and introduction to laboratory management and leadership skills. (2) Involve residents in hospital committees. For example, they may act the role of head of the department in the final month of training by attending relevant meetings with the department chair. (3) Emphasize good practice,

communication skills, positive attitude, and value as part of training. (4) Ensure that trainers must be good mentors who are interested not only in the academic progress of their trainees but also in their quality of life and social well-being. (5) Encourage research in relevant subjects. Get residents involved in simple studies that can influence day-to-day practice and quality issues. (6) Develop an objective residency curriculum with a time line. It is important to set and define training requirements, as well as set the standard of training (eg, to determine the number of specimens to be seen, to evaluate the system or disease conditions to be addressed, and to require documentation of exposure to the use of ancillary techniques). These should come within the purview of the colleges (West African College of Physicians [Lagos, Nigeria] and College of Pathologists of East, Central, and Southern Africa) and university or regulatory bodies. (7) Encourage hands-on training and foster regional collaborations. (8) Encourage each country to have at least a laboratory with immunohistochemical techniques. (9) Encourage the development of regional cooperation in training and research. (10) Define competency assessment milestones to audit residents' training, performed by faculty, as well as audit of trainers by residents. (11) Develop available teaching sets of cases of different systems and interesting cases. (12) Develop a regional database of institutional strengths (of ancillary techniques and subspecialty) to identify institutions where residents can go for elective training to learn, with clear objectives and (if possible) with their own specimens, to increase exposure and cover areas where their programs are deficient. (13) Develop resident exchange programs within Africa and outside the continent. (14) Implement and sustain regional technical training, with refresher courses for technologists every 2 years.

What Is the Role of Trainers?—Trainers are critical players in the success of the training effort and process. They (1) must be passionate about their jobs and be committed to their clinical service duty, (2) have to prioritize their various roles and be available for residents' supervision and training, and (3) need to demonstrate good leadership skills and comportment.

Other Recommendations.—It is important to rebrand and reposition pathology as an essential discipline in the health care delivery system, with a critical role in ensuring accurate diagnosis and appropriate patient management The fact that the quality of any hospital and patient care service is dependent on and reflects the quality of available pathology services must be emphasized. To achieve this goal, a multipronged approach is essential involving all stakeholders, including the following national and international organizations.

The Role of the African Union.—(1) Urge member states to implement standardized and fully functioning laboratories within countries. (2) Accelerate the process of accreditation of training, including the sites and programs, with particular emphasis on the assessment of teaching contents and trainers. (3) Encourage an increase in the number of and improve the training of pathologists and laboratory technical staff.

The Role of the African Organization for Research and Training in Cancer Executive Committee.—(1) Advocate for provision of training infrastructure based on the argument that efficient and dependable pathology is central to health care delivery. (2) Facilitate and support the establishment of strong and effective collaboration and linkages among

African pathologists (in the region and in diaspora), training institutes, and multilateral partners at regional and global levels.

The Role of African Pathologists.—(1) Develop training methods based on clinical needs and local databases, as well as ethical values. (2) Foster more south-south cooperation to harmonize curricula and facilitate mobility of trainees and trainers. (3) Emphasize the institution and maintenance of quality control and quality management as essential components of clinical training, with documentation of SOPs and improved turnaround time, as well as ensuring high-quality surgical reports. (4) Demonstrate good leadership skills and enhance cooperation between technical and other laboratory support staff. (5) Encourage well-trained and motivated technologists.

The Role of the West African College of Physicians; the College of Pathologists of East, Central and Southern Africa; and Universities and Regulatory Bodies.—(1) Work with pathologists to develop, at the country level, action plans for training improvement and pathology programs assessment. (2) Create a task force to harmonize the teaching contents and assessment process in pathology. (3) Provide support for technical training programs of other laboratory staff.

The Role of Heads of Institutions and Hospital Medical Directors.—(1) Accord pathology the pride of place it deserves as an essential clinical discipline. (2) Offer a quality teaching environment because this strongly impacts training. (3) Provide needed infrastructure and support to pathology departments and laboratory physicians. (4) Encourage improvement in laboratory services, with provision of much-needed ancillary techniques and frozen section facilities for improved diagnosis, patient care, and teaching. (5) Give adequate budgetary allocation to the laboratories for improved services. The current allocation is abysmal compared with other clinical services. (6) Foster good relationships between pathologists and technical staff.

The Role of Voluntary Organizations.—(1) Assist with capacity building through provision of teaching slide sets and books and provision of consultation services. (2) Encourage visiting and exchange programs with African institutions. (3) Support visiting lecturers and faculty to African institutions, pathology departments, and African pathology summits.

Translational Research Working Group Report

Preamble.—It is common knowledge that high-quality research is a prerequisite for improved health. The World Health Organization encourages that health research should be an integral part of national strategies for its “Health for All” program (http://en.wikipedia.org/wiki/Health_For_All).¹

Pathology as the bedrock of medical practice and health care should lead in research and research training in Africa as it is being done elsewhere in the world. With technological advancement comes increasing competition in the research environment, hence the increasing challenge for pathologists in Africa to keep pace with the changing tide.

The Benefits of the Development of Translational Research in SSA.—There was a strong consensus that the building of active research programs was a necessary component of improving and increasing pathology capacity in SSA. The benefits to research programs were identified as follows: (1) better patient care at the local and national level, (2) greater engagement in the medical community at large, (3) improved job and professional opportunities and

satisfaction, (4) enhanced recruitment of students to registrar and training positions in pathology, and (5) more retention of pathologists within countries in SSA.

The Challenges in the Development of Translational Research in SSA.—There is a dearth of research publications from Africa due to a number of challenges. The group identified several obstacles for pathologists to engage in research, each of which would need to be addressed in order for a department to develop and sustain a robust research program. Good-quality and locally relevant research must be focused, multidisciplinary, and translational.² There is a need for the following: (1) establishing local research infrastructure, including the development of an ethics review board, availability of trained research assistants, access to a statistician, and facilities for record retention; (2) training in grant application writing, developing research protocols, and publishing data; (3) elevating research to a priority at the local and national levels and developing the appropriate advocacy systems to promote research; (4) addressing workforce issues so that pathologists have sufficient time to devote to research activities; (5) overcoming the often prevailing lack of information on who else is working on similar or related projects and could act as a mentor or collaborate on a given project; (6) having adequate mentorship; (7) overcoming a state of poor funding resulting from inadequate budgetary allocation, general economic downturn, misplaced priorities, multiple competing interests for scarce finances, scarcity of funding agencies, and so forth; (8) overcoming a state of inadequate infrastructure and decay in existing ones; (9) overcoming the current state of noncohesive or lack of multidisciplinary research culture; and (10) overcoming the current state of insufficient capacity for research.

The Initial Baby Steps to Improve Translational Research in SSA.—To address the above and improve research and research training in Africa, it was recommended that, for starters, research goals should be set to align with the research goals of the World Health Organization, which are as follows: (1) building capacity of individual and institutional competence to conduct research; (2) setting research priority to align with public health needs, global priorities, and sources of research funding; (3) establishing standards to promote good practice in research; (4) developing translational approaches to strengthen links between health research and industry by encouraging transfer of research-based knowledge into the health care system; and (5) creating organization competence to strengthen and sustain a research culture.

Leadership Roles for the African Organization for Research and Training in Cancer.—The African Organization for Research and Training in Cancer has a role as a leading organization. Major areas to prioritize include capacity building and developing standards for research.

Capacity building should include the following: (1) organize regular training in research skills, research methodology, and grant writing; (2) encourage research mentorship between established researchers and early career researchers; (3) promote formation of intrainstitutional, intranational, and international research networks to harness expertise, improve quality, and diversify the research skills in Africa; and (4) provide support for grant writing combined with advocacy and liaison with funding agencies so that the level of grant-supported research activity can be increased.

Developing standards for research should include the following: (1) assist in the establishment of institutional research offices; (2) encourage all institutions to establish a health research and ethics committee (or institutional review board), which will review and monitor all ongoing research studies and ensure conformity to national and international standards;³ and (3) facilitate training of researchers on responsible conduct of research (including scientific misconduct, conflict of interest, data management, authorship practices, human and animal research subjects, and academic ethics) to ensure that every researcher is certified nationally and internationally. This can be done through the use of the Collaborative Institutional Training Initiative template (www.citiprogram.org).

Advocacy Working Group Report

Defining Advocacy.—Advocacy must first be defined. According to the World Health Organization, advocacy is the “effort to influence people, primarily decision-makers, to create change, which in the context of cancer control results in comprehensive policies and effective program implementation, through various forms of persuasive communication.”⁴

The working group considered what the 6 unique areas of advocacy are and how they apply to pathology advocacy in SSA, including the following: (1) political advocacy, which is lobbying to impact public policy at local, state, and federal levels; (2) education advocacy to enhance information and education about pathology, including bidirectional dialogue with other providers to foster multidisciplinary care; (3) research advocacy to foster high-quality research that meets the needs of patients and the community; (4) fundraising advocacy to raise funds to support research, services, education, and community outreach; (5) support advocacy for patients with cancer, families, and caregivers; and (6) community outreach advocacy to engage and reach out to the community to foster cancer control.

All these 6 areas are considered important for pathology advocacy. A multipronged approach is recommended for successful advocacy.

Who Should Be Targeted for Advocacy?—(1) pathologists, to improve self-image; (2) other clinicians, to improve their collaboration with pathologists in clinical care, public health, and research; (3) ministries of health, to broaden the impact of pathologists; (4) the public, to improve the public image of pathologists; and (5) health care organizations, to foster team care and document evidence of care.

Proposed Next Steps and Recommendations for Advocacy.—(1) Institute an Annual Day of the Pathologist. A possible date is October 13 (the birthday of Rudolf

Ludwig Karl Virchow). A proclamation may be necessary for the day, and having multiple organizations champion it will be great (eg, start with a public statement by the African Organization for Research and Training in Cancer. (2) Provide public education on the value of pathology using appropriate population-based statistical data and so forth. (3) Develop an active and sustained public outreach, including media for outreach, public outreach provided in layman’s terms, visits and partnering with nongovernmental organizations and professional organizations, an awareness day for high schools (eg, October 13), health fairs in public venues (especially related to laboratory diagnoses), and a pathology ambassadors’ program. (4) Promote policy advocacy as an integral component of advocacy, with emphasis on adequate resource allocation, better service, and increased interaction with clinicians. (5) Improve the poor self-image of pathologists, who often lack professional standards in many low-income countries and are poorly perceived. There is a need to be inspiring teachers, good communicators, and leaders. They should to be visible publicly and be ambassadors for pathology. (6) Meet and greet with ministry of health representatives, including providing postmortem statistics. (7) Encourage other activities such as increasing peer-reviewed publications in the area of pathology; actively training and mentoring students to promote the profession; participating in tumor boards, teaching, and lecturing; and improving turnaround times for pathology service.

CLOSING REMARKS

The analysis of the current status of pathology service, training, education, research, and advocacy as detailed in this report is exhaustive. The report also contains reasonable recommendations on how to strengthen what now exists and how to address new and old challenges. This document will be relevant for many years to come and provides a starting point for change. It should be useful in guiding plans and policies that address pathology-related issues in SSA.

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Addendum

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