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Camille E. Introcaso

University of Pennsylvania, Camille.Introcaso@uphs.upenn.edu

Carrie Kovarik

University of Pennsylvania, carrie.kovarik@uphs.upenn.edu

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Keywords

international dermatology, volunteerism, teledermatology, tropical dermatology, dermatology education

Disciplines

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Dermatology in Botswana: The American Academy of Dermatology's Resident International Grant

Camille E. Introcaso, MD^{a,b} and Carrie L. Kovarik, MD^{c,d,*}

^aDepartment of Dermatology, Pennsylvania Hospital, 800 Spruce Street, Philadelphia, PA 19107, USA

^bPennsylvania Center for Dermatology, 801 Spruce Street, Philadelphia, PA 19107, USA

^cDepartment of Dermatology, Hospital of the University of Pennsylvania, 3600 Spruce Street, Philadelphia, PA 19104, USA

^dDivision of Infectious Disease, Department of Internal Medicine, Hospital of the University of Pennsylvania, Philadelphia, PA 19104, USA

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“Dumela, Ma!” Across the globe, a North American dermatology resident greets a patient at the skin clinic at Princess Marina Hospital in Gaborone, Botswana. The patient has waited that morning with as many as 30 other patients to see the resident, who is one of only two dermatologists working in the country’s public health sector. The resident conducts the interview and examination with the assistance of a nurse who speaks English and Tswana (Setswana), the language spoken by many in Botswana. The resident makes a diagnosis, discusses the plan of care with the patient, and writes a brief note and prescription in the chart the patient carries with her; the patient heads to the hospital pharmacy. Later that afternoon, the resident does inpatient consultations, discusses management with the teams of local doctors and nurses, and makes plans to give a lecture and see patients at a neighboring rural clinic the following week. At the end of the day, the resident returns to the Botswana-UPenn Partnership-owned flat with medical students and residents from North America, and the group shares dinner and the various experiences they have had that day conducting research in the clinics and on the inpatient wards.

The American Academy of Dermatology (AAD) has a long tradition of volunteerism. From its involvement with Camp Discovery to the multitude of AAD-supported skin cancer screenings and the monthly highlight of “Members Making a Difference” in its newsletter, the Academy has consistently provided its members with encouragement and opportunities to use their skills to reach vulnerable or underserved communities. Over the last 3 years, a group of motivated AAD members and educators have linked together a network of domestic and international health organizations to create a unique opportunity for dermatology residents to further their education and provide care to a sub-Saharan African

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*Corresponding author. Department of Dermatology, Hospital of the University of Pennsylvania, 3600 Spruce Street, Philadelphia, PA 19104. Carrie.kovarik@uphs.upenn.edu.

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population. This article highlights the history, elements, and scope of the program called the Resident International Grant.

HISTORY OF THE RESIDENT'S INTERNATIONAL GRANT

In 2008, the Education and Volunteers Abroad Committee of the AAD approached the AAD leadership and requested support and funding to send six residents to live and work in Gaborone, Botswana, and the Resident International Grant was created. Three main partnerships had been forged, providing housing, in-country support, and connection to health care services in Botswana needed by the dermatology residents. In the early 2000s, the Infectious Disease Division of the Hospital of the University of Pennsylvania (UPenn) established a relationship with the Ministry of Health and Princess Marina Hospital in Botswana. Since then, UPenn medical students and residents had lived in the community in shared flats in Gaborone and rotated through the adult inpatient wards of Princess Marina Hospital. Similarly, the Baylor International Pediatrics AIDS Initiative (BIPAI) had developed a partnership with Princess Marina Hospital, providing education, staffing, and funding for an outpatient pediatrics clinic for the care of pediatric HIV patients. These academic institutions were linked by a group of dermatologists with shared experiences with both, in particular Dr Carrie Kovarik, who would later become the director of the Resident International Grant. Through funding provided by the Association of Professors of Dermatology in 2007, the first two formally-supported dermatology residents traveled to Botswana and worked with the one existing dermatologist in the public sector.

From these early experiences, it became clear that both the patients of Botswana and the North American dermatology residents could benefit from the residents' presence at Princess Marina Hospital. The residents would receive the invaluable experiences of seeing and treating tropical and HIV-associated dermatoses and have the opportunity to learn to provide general dermatologic care and education to a different culture in a resource-limited setting. The patients would be provided with additional well-trained dermatologists, and the health care workers of Botswana would be provided with further education on dermatologic disease to build their capacity for future care. With these opportunities in mind and the instrumental support of Dr William James, the current President of the AAD, the Academy approved the initial positions. The responses of the residents who completed the program, the leadership of the organizations involved, and the patients were so positive that additional positions were and continue to be approved for virtually continuous coverage of the clinic through to the end of 2011.

“YOU'RE GOING WHERE?” AN INTRODUCTION TO BOTSWANA

Botswana is a landlocked country in sub-Saharan Africa. The population of Botswana is approximately 2 million, with most people living in the southwest corner of the country. Most of central Botswana consists of the largely uninhabitable Kalahari desert. The country is best known for tourism and has thriving safari parks in the north. Its economy is otherwise based on diamond mining and cattle herding. Since its independence from Great Britain in 1966, Botswana has been a democratic republic, and it has enjoyed a long history of peace and relative prosperity compared with the civil unrest experienced by some of its neighbors. However, in the 1990s, it became apparent that the people of Botswana were being disproportionately affected by the HIV epidemic; by 2006, it was estimated that 26% of the adult population was HIV-positive.¹ Parallel private and government-funded public systems comprise the health care system in Botswana, with most of the country dependent on the public system. In the early 2000s, the public health care system began a comprehensive HIV care program that included antiretroviral treatment, bringing many living with HIV into the health care system. HIV-related dermatoses are heavily represented in the diagnoses made in

the dermatology clinic where the residents work. Despite its relative stability, a large proportion of Botswana's population is poor, and the public health care sector is stretched thin in some areas. Access to specialty care, including dermatologic care, is very limited in the public sector, and many patients seen at the Princess Marina Skin Clinic have traveled great distances.

RESIDENT RESPONSIBILITIES

Residents who participate in the Resident International Grant spend four to six weeks living and working in Gaborone, Botswana. Approximately three days a week, 20 to 40 patients are scheduled in the outpatient "Skin Clinic" on the Princess Marina Hospital campus. The resident often sees patients independently but also works together with the other public sector dermatologist. Each weekday, the resident is responsible for seeing the clinic patients, working with the pathologist and microbiologist at the neighboring National Laboratory to follow up on the clinic's pathology and laboratory results, and providing pediatric and adult inpatient consultations at Princess Marina Hospital. Residents are expected to keep a basic log and when appropriate photographic record of patients that they have seen. The common diagnoses include much of what is seen in a general dermatology clinic in North America, such as acne and atopic dermatitis, with an emphasis on photodermatoses, including discoid lupus and phototoxic and photoallergic medication reactions; pigmentation abnormalities; oculocutaneous albinism; and infectious disease, including superficial fungal and bacterial infections. Also seen are many manifestations of HIV, such as papular pruritic eruption, herpes virus infections, human papilloma virus infections, molluscum contagiosum, deep fungal infections, atypical mycobacterial infections, and Kaposi sarcoma (Fig. 1). The hospital pharmacy stocks a very basic formulary and medication is provided to the patients at low or no cost through the public health care program.

Capacity-building in the form of dermatology education to local health care workers is a crucial component of the program. Over the course of the rotation, the resident gives several didactic presentations to groups of health care providers associated with Princess Marina Hospital, surrounding district hospitals, the BIPAI, and/or community organizations. Often, other opportunities to teach arise; the community living situation lends itself to the development of friendships and collaborative relationships, and dermatology residents are often shadowed by medical students or other residents living with them. The University of Botswana internal medicine and pediatrics residents formally complete a one-month rotation on the dermatology service, and the dermatology resident has the opportunity for hands-on teaching, while learning more about general medicine in Botswana from the local physicians. About once a week, the resident has the opportunity to travel by bus, taxi, or with other health care workers to one of four neighboring clinics and hospitals in the rural areas outside Gaborone. At these clinics, the resident sees out- and inpatients and lectures on helpful dermatology topics to local care providers. A one-week overlap between the residents ensures continuity in the service and gives residents a chance to interact with and learn from their peers.

Although running the dermatology service fairly autonomously is a valuable part of the experience, several programs are in place to ensure that residents have sufficient support to provide excellent care. The residents work closely with the public sector dermatologist in Princess Marina Hospital, Dr Gilberto Lopez, a Cuban physician who is currently living and working in Botswana. Another service that provides support is teledermatology, and one of the goals of the Resident International Grant is to educate the residents in using teledermatology services effectively. The resident can submit consultations on an Internet-based store-and-forward system (<http://africa.telederm.org>) or by mobile (cellular) teledermatology; the resident is provided with a cellular phone equipped with a 5.0-

megapixel camera and ClickDoc (Click Diagnostics, Boston, MA, USA) software, which allows for submission of cases without an Internet connection. The consultations are answered by a group of dermatologists organized by Dr Kovarik, who is always available for clinical or social support during a resident's time in Botswana. The residents are expected to submit a certain number of teledermatology consultations during their rotation to provide high-quality care, get feedback on their diagnoses and management plans, and have enough experience with the technology to teach the next resident.

Histopathology interpretation support is another important component of the residents' experience. Dr Scott Binder at the University of California, Los Angeles (UCLA) Department of Pathology generously facilitated the donation of a live telepathology system (Zeiss Mirax Live RT system, Carl Zeiss MicroImaging GmbH, Jena, Germany) for interpretation of skin biopsies and teaching local pathologists in Botswana (see Fig. 1). Along with Dr Kovarik, members of the UCLA dermatopathology faculty regularly volunteer and provide interpretations of cutaneous histopathology to assist and educate the dermatology residents and the busy pathology department at the National Laboratory of Botswana. Generally residents work as a team with the local pathologist, Dr M Kayembe, to determine which slides to load on the microscope, and the team discusses the case with the consulting dermatopathologists through teledermatology.

As the program has evolved and become better defined, there have been several opportunities for residents to participate in and conduct clinical research while in Botswana. Residents have assisted with local clinical trials, with research on teledermatology and teledermatopathology services, with human-papillomavirus-related malignancies, and with various case reports based on their experiences.

SUMMARY

Following their return home, the residents are asked to write a reflection on their experiences for the program leadership at the AAD to identify strengths of the program and areas for improvement and growth. These reflections have been a valuable source of information and have been extremely positive about the depth and breadth of the residents' experiences. For many, this was their first experience as dermatologists in a foreign culture or working in a resource-limited setting, and most comment on their desire to continue similar work or volunteer activities. As a testament to the popularity of the program, the number of applications received for the 2011 grant rotation has nearly doubled since 2008.

Since the first residents traveled to Gaborone, Botswana in 2008, more than 1500 patients have been seen as part of the Resident International Grant. Dozens of teledermatology and teledermatopathology consultations have been sent and discussed, and almost 50 dermatology lectures have been given across Botswana. More than 50 residents have applied, and by the end of 2010, 35 residents will have traveled to Botswana and completed the rotation. Anyone interested in learning more about the program or applying for a future position is requested to visit the AAD Web site for more detailed information. As the Resident International Grant enters its fourth year, it seems clear that although much work remains to be done, there are many academy members and dermatology residents who are more than willing to undertake it. Finally, the supporters of the program hoped that the local clinicians gain the knowledge and hands-on experience to allow them to sustain dermatologic care for the patients in Botswana.

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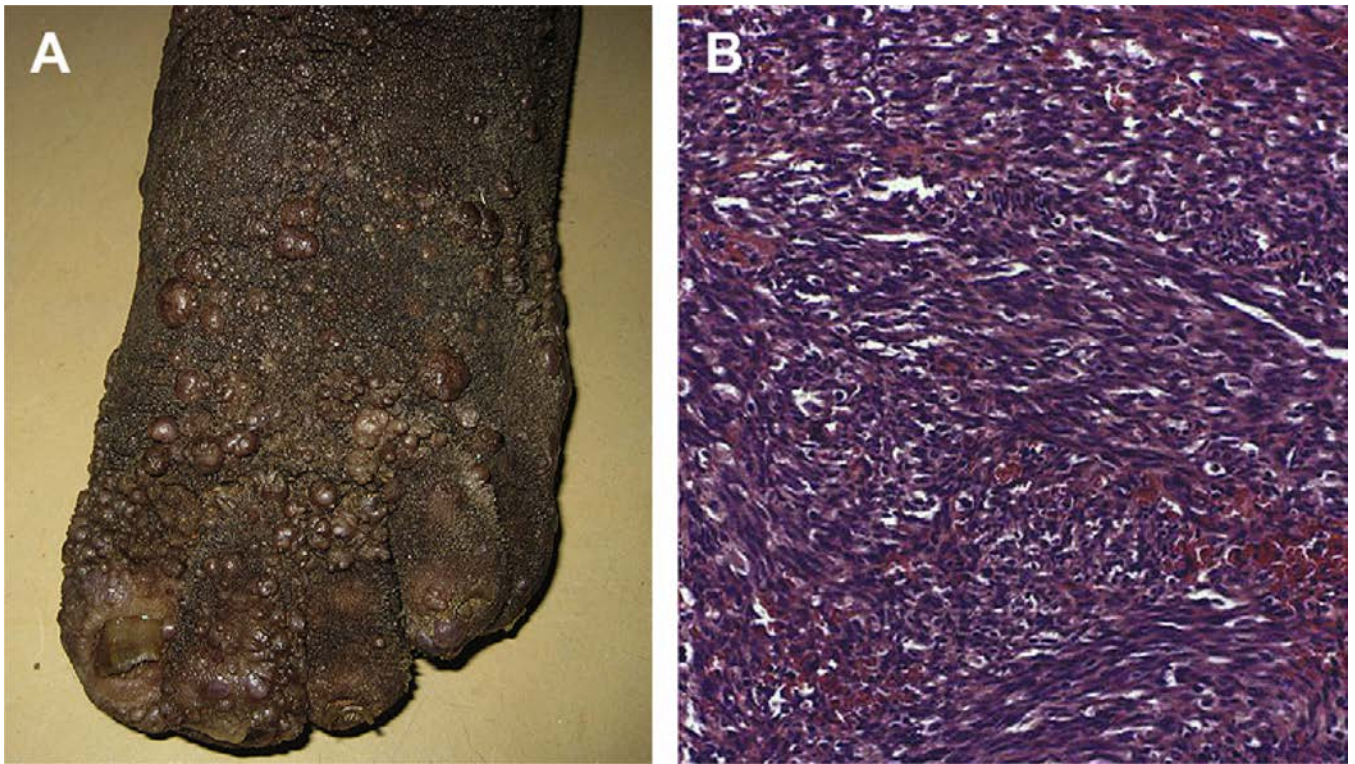


Fig. 1. (A) Clinical image of a patient at Princess Marina Skin Clinic with Kaposi sarcoma. (B) Photomicrograph taken using remote microscope. (Courtesy of Dr Saurabh Singh, MD, Washington, DC).