Background

Over the past two decades the world has seen tremendous medical advances in modern wound care and lymphedema management, principally due to new scientific knowledge, techniques, and materials. These advances have occurred mainly in developed countries. The diagnosis and treatment of chronic wounds and lymphedema, both primary and secondary in etiology, involves all medical specialties and all ages. The management of diseases and conditions such as diabetes mellitus, venous ulceration, pressure ulcers, traumatic wounds, and AIDS-related wounds have benefited from improved medical knowledge and technology, which leads to better care and reduction in both the morbidity and economic burden. Additionally, it is anticipated that utilizing modern wound care methods for wounds related to leprosy, Buruli ulcer, trauma, and common tropical ulcers would also lead to significant benefits.

The precise global burden of chronic wounds and lymphedema is not known and international statistics that provide the full picture of prevalence, disability, and impairment of wounds, burns, and lymphedema are difficult to acquire. The etiologies of these conditions are numerous with regional, national, and local specificities. However, the epidemiology and economic burden of the chronic wound is well documented in the developed world. Each year, in North America, between five and seven million chronic and/or complex wounds occur. A recent study in the UK showed a prevalence of patients with a wound was 3.55 per 1000 population. The majority of wounds were surgical/trauma (48%), leg/foot (28%), and pressure ulcers (21%). Prevalence of wounds among hospital inpatients was 30.7%. Wounds

Abstract: The World Alliance for Wound and Lymphedema Care (WAWLC) is a newly formed global health partnership that strives to work with communities to harmonize and intensify actions at country, regional, and global levels in support of optimal care for people suffering from chronic wounds and lymphedema. The following provides an overview of the organization’s mission.
in Australia represent a highly significant health issue: some estimates suggest that more than 200,000 Australians have problem wounds at any one time.²

With the growing epidemic of noncommunicable diseases and longer life expectancy, the prevalence and impact of chronic wounds and lymphedema are likely to increase. Furthermore, studies show worrisome data about the extent of chronic wounds and lymphedema in resource poor nations. A recent study in India estimated a prevalence rate of chronic wounds at 4.5 per 1000 population. The incidence of acute wounds was more than double at 10.5 per 1000 population.¹ The etiology of these wounds included systemic conditions such as diabetes, atherosclerosis, tuberculosis, leprosy, venous ulcers, pressure ulcers, vasculitis, and trauma. In India, filariasis may account for 23 million cases of lymphedema.¹⁵ According to data from epidemiological studies, the incidence of chronic ulcers among surgical hospitalized patients in China is 1.5%–20.3%.⁶ Diabetes is the third leading cause of general mortality in Mexico and between 8%–12% of the Mexican general population (4 to 6 million people) currently have diabetes.⁷ Buruli ulcer has been reported from 30 countries in Africa, the Americas, Asia, and the Western Pacific mainly in tropical and subtropical regions. In Ghana, more than 14,000 cases have been recorded since 1993—986 cases were recorded in 2008.

**Economic and Social Impact**

In the United Kingdom, the cost attributable to wound care in 2006–2007 was £9.89 million: £2.03 million per 100,000 members of the population and 1.44% of the local healthcare budget. Costs included £1.69 million spent on dressings, 45.4 full-time nurses (valued at £3.076 million) and 60–61 acute hospital beds (valued at £5.13 million). The cost of wound care is significant. The most important components are the costs of wound-related hospitalization and the opportunity cost of nurse time. The 32% of patients treated in hospitals accounted for 63% of total costs.¹

While the costs related to hospitalization, nursing time, and dressings and drugs are considerable, the economic and social impact that results from mismanagement of chronic wounds and lymphedema disabilities on families, communities, and nations is massive. In addition to the preventable human suffering and disabilities, this burden encompasses the cost of caring for disabled men, women, and children; lost earnings by the patients and sometimes family caregivers; and an ongoing cycle of poverty and deprivation for poor families and societies.

Social interaction may be impeded due to odor and drainage seen in some wounds. Chronic leg wounds in the United States account for the estimated loss of 2 million workdays per year.⁸ Loss of self-esteem, continuous pain, and possible depression are difficult to quantify, but are certainly real.

Chronic and complex wounds can lead to complications such as infection, pain, and limb amputation. The psychological problems that such patients and their families acquire are better managed today because of a greater understanding of each patient’s needs as a result of quality of life studies. Patients affected by these types of wounds often require assistance in performing common daily tasks. Neglect can lead to malnutrition, further morbidity, and, as with the diabetic foot, higher mortality rates.³⁰

In addition to any loss of earnings, people may have to choose between a commitment to work and a commitment to proper medical wound management. This scenario has increased significance in resource-poor nations. In many cases, a disabling wound results in the loss of two or more people from the work force—the patient and the family member caring for the patient. A wound can control a life. People may have to cope with specialized devices or beds, lack of mobility, dressing changes, drainage, odor, clothing limitations, and sleep deprivation. Healing may take months or years, and unsuccessful wound treatment can lead to limb loss or even death. Sixty percent of nontraumatic lower limb amputations are associated with diabetes.¹¹

**Limited Access to Modern Technology**

Advances in modern wound and lymphedema management have occurred mainly in the developed world. However, in developing countries outdated techniques, practices, and materials are used to manage these conditions, thus leading to prolonged morbidity, suffering, and high costs. Observations throughout the world have shown common mismanagement deficiencies and standard wound care most often is reduced to tissue toxic cleansing solutions, misuse of topical antibiotics, wet-to-dry gauze dressings, and the absence of compression bandaging. Management of lymphedema, filariasis in particular, often demonstrates a lack of basic hygiene and absence of compression bandaging. This scenario too often results in severe disability, isolation, and in far too many cases, amputation. In these countries, recycling dressings and bandages is common. Dressing changes are
not performed as often as necessary due to the limited availability of materials or high costs.

A New Global Health Partnership for Wound and Lymphedema Care

During the opening ceremonies at the 2005 Symposium for the Advancement of Wound Care (SAWC), the Association for the Advancement of Wound care (AAWC) startled the audience with the announcement that the mission of the AAWC was about to enter uncharted waters—the AAWC was going global! As with any new idea, the announcement was met with both emotional support and caustic criticism. To quote Joseph Campbell, “The big question is whether you are going to say a hearty yes to your adventure.” Members of the AAWC responded to the Global Alliance adventure with a hearty “Yes!” The AAWC-HVO program now has established active volunteer teaching sites in Cambodia (2 sites), India, Peru, and St. Lucia. In October 2007, representatives of the AAWC and HVO, through the cooperation of the NGO Handicap International (HI), met with representatives of the World Health Organization (WHO) in Geneva, Switzerland. At this meeting, it was agreed that a growing interest in wound and lymphedema care had led to the creation of many wound care and lymphedema associations throughout the developed world. These associations are both regional and country-specific. It was discussed that effective wound care and lymphedema management should be given a global priority so that this knowledge, techniques, and materials could reach those in need, particularly, in developing countries. A global policy on wound and lymphedema management, combined with a global coordination mechanism to unite all organizations, associations, industry and individuals with interest in these subjects would help to make further progress. This would most especially support these efforts in developing countries. At a subsequent meeting in October 2008 it was agreed that together we would create the Global Initiative for Wound and Lymphedema Care (GIWLC).

The GIWLC Becomes the WAWLC

The organization took a giant step during a 3-day meeting in October 2009 in Geneva, Switzerland. The meeting was attended by a collection of many of the world's wound and lymphedema expert clinicians. More than 40 participants representing the 43 nations (counting EWMA), 11 medical societies, 4 NGOs, and 2 medical industry observers were in attendance. Five representa-

The WAWLC

The WAWLC is a partnership of international organizations, governmental and nongovernmental agencies, partner countries, donors, foundations, health professional associations, and academic and research institutions. Also included are individuals and industry leaders sharing interest in, and a commitment to, improving the management of wounds and lymphedema around the world. Members are committed to providing adequate and sustainable technical, financial, and material support to ensure continued and successful operations of the initiative. The mission of the WAWLC is to provide guidance for safe and effective wound and lymphedema care through public health recommendations, education and training at all levels, and country support for implementation of such activities. These levels are to include tertiary, secondary, primary, and community involvement for lymphedema and both the acute and the chronic wound. The education philosophy of the WAWLC strives to “teach the teachers” optimizing local clinicians and integration into the existing healthcare structure. It is intended that such care be provided in a cost effective manner utilizing, where possible, locally available products and currently available essential drugs and dressing supplies. The teaching and training programs will include the use of therapies common to multiple disciplines. It is believed that significant benefit will be achieved by decreasing now prevalent, ineffective, costly remedies. Experience has shown that misdiagnoses and lack of understanding of the principles of modern wound and lymphedema care can be devastating to the overall health and economic welfare of all communities.

WAWLC Objectives

1. To raise awareness of the importance of chronic wounds and lymphedema, and their economic and social impacts.
2. To develop global policy on modern wound and lymphedema management.
3. To support countries to develop the capacity necessary to utilize current knowledge on wound and lymphedema in the care of patients. 
4. To contribute to strengthening the health systems in affected countries in order to achieve objective #3. 
5. To support research aimed at improving wound and lymphedema management.

**WAWLC Accomplishments**

- A White Paper titled “Best Practice Recommendations for Wound and Lymphedema Management” developed and expected to be published by WHO in 2010.
- Assessment of wound and lymphedema care and related issues completed in 4 countries—Cameroon, Ghana, Sierra Leone, and Uganda.
- Teaching seminars conducted in Accra and Kumasi, Ghana in 2009.

**The Ghana Experience—Find Your Champion**

It is essential that for each education initiative, a preliminary site visit be made. It is important to identify a local champion. A Ghana, West Africa site visit was completed in July 2008 and was funded by WHO with logistical support from the WHO Buruli Ulcer office in Ghana. At that time Terry Treadwell, MD, Mary Jo Geyer, PT, PhD, CLT, and John Macdonald, MD spent 10 days evaluating the needs and expectations of the clinicians in Ghana. We were hosted by the Plastic Surgery Departments of the primary teaching hospitals in Accra and Kumasi. Additional visits were made to three isolated regional hospitals in central and southern Ghana. In each hospital we made clinical rounds with the medical teams, exchanged ideas and in Kumasi and Accra gave announced power point presentations. We also met with representatives of the Ministry of Health and the Ghana WHO authorities. Unexpectedly, we found ourselves in a national talk radio station answering questions related to our observations in Ghana and the hope for our mission! Over the course of 10 days, we traveled, dined, and talked wound care and lymphedema. We had identified our Champions and began to plan our return for formal training.

**Formal Training Intervention—Keep it Simple**

Designing a curriculum for wound and lymphedema management in resource poor nations can be a challenge. The first challenge is for the teachers not to accept the label “expert” seriously. The “experts” in resource poor nations overseeing wound and lymphedema management are themselves in a learning phase. Wound care in most resource poor nations, as had been the case in much of North America, consists of betadine, acetic acid, dry gauze, and no compression. Lymphedema management is a critical problem in these nations because of filariasis and must be included in any comprehensive curriculum. We have found that “Wound care 101” is best defined by 5 basic principles that need to be stressed and expanded:

1. Comprehensive patient evaluation 
2. Avoid physical and chemical trauma to the wound 
3. Debridement and judicious infection control 
4. Moisture control 
5. Control of periwound edema/lymphedema.

**Teaching seminars.** In February, 2009, with the sponsorship of the AAWC Global Alliance and the WHO endorsed WAWLC, teaching seminars devoted to wound care and lymphedema were conducted in Ghana, West Africa. The faculty included Terry Treadwell, MD, Mary Jo Geyer, PT, PhD, CLT, Janice Young, RN, WOCN, and John Macdonald, MD. Seminars were given in the university teaching hospitals in Kumasi and the capital, Accra. Each seminar was scheduled for 2 and a-half days and included didactic lectures and 3 hours of hands-on workshops. The audience was composed of a balanced mixture of physicians, nurses, and physical therapists. Each participant was enrolled by invitation and represented hospitals from all regions in Ghana. Some had driven 8–10 hours over difficult terrain to attend. We were delighted and inspired by the fervor of their involvement. From the beginning of the seminars, we stressed that we, the “experts,” were in Ghana to learn as well as to teach. The goal that was set in advance was for this to be a team effort in creating wound and lymphedema centers of excellence for Ghana. We also stressed that the format for these seminars would be used as the template for future WAWLC/AAWC teaching interventions. Therefore we encouraged questions, advice, and critique of the educational content and style of presentation.

In the design of this training program, we stressed the importance of using locally available materials for dressings, topical agents and compression bandages. Much of the learning experience was gained by wandering through the ward supply rooms or by visiting local pharmacies and discovering bandages and supplies that were easily adaptable to our basic modern needs. Dr. Treadwell demonstrated “How to make your own Unna Boot” and...
“Growth factors—right here, right now!” The seminars were divided between didactic lectures and hands on workshops. The workshops were devoted to negative pressure therapy, lymphedema management, and bandage compression.

A multidisciplinary team is ideal when designing formal training sessions, similar to those carried out in Ghana. In this case, we had two MDs, one PT, and one RN. Of special note, our RN, WOCN teacher was Janice Young, representing KCI. Prior to our arrival in Ghana, KCI graciously donated two new V.A.C.® systems and 1-year of product support and supplies to the plastic surgery units of the two teaching hospitals in Accra and Kumasi. KCI is the first biomedical corporation to donate and become involved with WAWLC. This was a shining example of the best in medical cooperation and an example we believe others will follow. KCI is to be congratulated.

The Future of WAWLC

The training presented in Ghana represents a work in progress. Each future location will require innovative thinking and flexible adaptation (please see the Post and Geyer article in this issue). It is anticipated that after completion of the initial site visits and formal teaching seminars, pilot programs involving more advanced educational programs can be initiated. These programs would be designed to focus on integrating community-oriented, sustainable specific disease management initiatives and building country capacity. We believe that the design of #1 site visit, #2 formal seminars, and #3 repeated volunteer visits for re-assessment and mentoring is a realistic formula for success. It is appreciated that economic restraints and the availability of volunteer “teams” will determine the realities of interventions. Certainly there are opportunities for solo interventions by qualified volunteers. We are encouraged by the recent response given to volunteers in each of the established sites. In Ghana, for example, we were informed that both university teaching hospitals were making plans for establishing outpatient wound-lymphedema clinics. Ghana is looking forward to extending a warm welcome for future teaching volunteers.

The globalisation of modern wound and lymphedema management is beginning to take a giant step. The chronic suffering, disability, isolation, and limb loss resulting from inadequate or improper care for millions of men, women, and children will soon be alleviated not by unaffordable medications and dressings, not by difficult to learn techniques, and not by transient experts. This gift to millions will come from continuing to spread knowledge of the basic principles of wound and lymphedema management, application techniques, and the teamwork of both national and international medical teams.

The adventure is just beginning!

References