



Medical Support to Demining In Sudan

With an area of more than one million square miles (2.5 million square kilometers), Sudan is the largest country on the African continent and has been at the center of decades of conflict since it gained its independence in 1959. The Comprehensive Peace Agreement¹ signed in January 2005 brought to end a vicious civil war and marked the beginning of an era of relative peace. This article outlines the health challenges involved in mine action in Sudan and highlights the actions taken by the United Nations Mine Action Office in Sudan to address issues of medical support to humanitarian-demining operations in a particularly difficult environment.

by Russell Wyper [United Nations Mine Action Office]

The violence that abated when the government of Sudan and Sudan People's Liberation Movement signed the Comprehensive Peace Agreement claimed the lives of an estimated two million people and has left a legacy of under-development, destruction and widespread poverty, particularly in South Sudan.²

Despite the signing of the CPA, conflict continues in Sudan, most notably in Darfur. The country's problems are complex and diverse. An estimated 4.5 million Sudanese have been forced to leave their homes and live either as internally displaced persons in Sudan or as refugees in neighboring countries. Many refugees are expected to move back to their homes in Sudan by 2012. Political complexities have further hampered the country's development and diverted the focus of its global partnerships from investment and development to humanitarian assistance. In addition to the negative effects of conflict, urban-biased development policies—projects mainly focused in urban areas—contributed to massive urban-rural migration, and placed additional pressure on already weak social-service infrastructures.

While the conflict has negatively impacted all of Sudan, the situation is significantly worse in the Sudan People's Liberation Movement-controlled areas of the south. South Sudan's human-development index is among the lowest in the world,³ and its adult-literacy rate is the second lowest after Niger.³ The indicators for water, health and nutrition are similarly alarming.

The United Nations Mine Action Programme in Sudan was established in September 2002 and has grown significantly in addressing the needs of the Sudanese community and supporting the United Nations Mission in Sudan. Most of Sudan's borders are affected by mines, as are many roads and railway lines. Medical support is a vital component of all humanitarian-demining activities. In Sudan the provision of medical support is particularly challenging, given the many health threats inherent to the environment.

Medical Threats to Demining Staff

The greatest health threat to those living and working in Sudan is malaria; an estimated 24–26 percent of the population is affected annually.⁴ The *plasmodium falciparum* strain, which can progress to cerebral malaria,⁵ poses the most serious threat. Major outbreaks of other diseases are also common, with recent yellow fever,



Sudanese medics receiving medical training in southern Sudan.
ALL PHOTOS COURTESY OF THE AUTHOR

cholera and meningitis outbreaks occurring in areas where humanitarian-demining operations are in progress. Other major endemic, communicable diseases are *Onchocerciasis* (river blindness), guinea worm, *schistosomiasis* (snail fever), Kalazar, *trypanosomiasis* (sleeping sickness), tuberculosis, leprosy, sexually transmitted

infections (including HIV), Ebola virus and *Buruli* ulcer.⁶ The major causes of death in Sudan are:

- Malaria (28 percent)
- Diarrhea (13 percent)
- Respiratory infection (11 percent)
- Intestinal parasites (8 percent)
- Skin infections (5 percent)
- Trauma (5 percent)
- STIs including HIV (4 percent)

The deliberate targeting of humanitarian workers by the Lords Resistance Army poses another significant threat to demining staff. Following the humanitarian clearance of roads, which was conducted by the *Fondation Suisse de Déminage* in 2003, incidents of irresponsible driving are likely to increase, adding the potential of a traffic accident to the long list of hazards deminers already face. These threats highlight the need for well-equipped and well-trained medics to support demining operations in remote locations that have little indigenous health capacity.

National Health Infrastructure

In South Sudan there are currently 783 health-care facilities serving 7.5 million people (88 percent are minimal-level health posts and 6 percent are referral, or rural, hospitals mainly staffed by health assistants with less than nine months' training. Access to health care varies across Sudan, ranging from 35 doctors per 100,000 people in Khartoum to one doctor per 100,000 people in South Darfur.⁴ Currently, 40 percent of the total population of South Sudan has no access to health services at all.⁷ Central government and state expenditures on health is extremely low compared with nearby countries.⁴ In South Sudan, the situation is particularly poor because health care (mostly curative care and/or disease control) is mainly provided by nongovernmental organizations and religious institutions through a network of basic units.

Casualty Evacuation for Demining Victims

Prior to the arrival of the U.N. Mission in Sudan, demining organizations conducting survey tasks were dependent on the Sudanese National Health Service facilities or NGO Primary Health Care centers provided with fixed-wing⁸ (nonmedical) evacuation from a diverted World Food Programme flight or medical evacuation with the Kenyan Flying Doctors from Nairobi. UNMIS, however, has since developed an air medical evacuation capability (rotary and fixed-wing)⁸ and has constructed Level Two hospitals in each sector and a Level Three⁹ hospital in Kadugli. The U.N. Mine Action Office has established a memorandum of understanding with UNMIS for air evacuation of demining staff of all organizations and stabilization at a Level Two or Level Three hospital within Sudan. The UNMAO has also developed a national casualty-evacuation plan for all demining organizations operating in Sudan.

National Technical Standards and Guidelines

In addition to outlining site requirements, casualty-evacuation procedures and post-accident procedures, the NTSG have been developed to assist organizations in the training of medical support staff.



Medic providing treatment to an ill deminer in a remote region of northern Sudan.

As there are very few training centers for medics in Sudan, organizations intending to employ national medical staff must provide significant additional training to meet the minimum standards required to support humanitarian-demining operations. The UNMAO has prepared and distributed a complete training package to assist humanitarian-demining organizations in the training of medics for operational support.

*International Mine Action Standard 10.40*¹⁰ provides guidance for the development of on-site medical requirements for humanitarian-demining operations, yet gives little guidance on the minimum required knowledge or skill levels of medical support staff. The NTSG, on the other hand, provide a detailed medical training syllabus and list the required medical skills and knowledge for both medical support personnel and deminers. An NTSG equipment list further provides for the in-field safety of medical staff, recommending staff have access to barrier-protection equipment such as protective eyewear and gloves for medics as well as sharp-item disposal containers. It also recommends medics receive training on barrier-protection methods.

Cranfield University has since drafted a revision of *IMAS 10.40* and has produced Medical Technical Notes that, if approved, will assist demining organizations greatly by providing clear guidance on minimum medical standards, training and the quality management of medical support; these documents have been field-tested in Afghanistan and Sudan and have been enthusiastically welcomed by the medical

staff in these programs. Cranfield has also developed a medical coordinator course at the request of the national authorities to improve the level of medical managers within the program. The course will be delivered to medical managers in Sudan and Afghanistan.

Clinical Guidelines: Treatment Protocols

Humanitarian organizations with no medical coordinator are often uncertain as to what treatment protocols are appropriate for national medical support staff employed in demining operations. To address this issue, UNMAO, in consultation with medical coordinators of demining organizations in Sudan, developed a set of treatment protocols for medics and produced a pocket guidebook for all demining medical support staff in Sudan. The *Quick Reference Pocket Guide*¹¹ can be used for medics as a reference in an emergency, as a field-study manual and as an internal and external medical quality-assurance tool to test the medic's knowledge of treatment protocols and casualty-assessment criteria. The *Guide* also details a standardized, systematic approach to casualty management for assessing and treating a casualty.

Technical Support and Training

The appointment of a Medical Coordinator to UNMAO has been welcomed by demining organizations, particularly those without their own medical adviser. UNMAO provides technical support and medical training to demining organizations and UNMIS military demining contingents to improve the level of medical support for their operations. UNMAO, in cooperation with Cranfield University and the International Mine Action Training Centre, with funding by the U.S. Department of State, has provided national capacity development for Sudanese medics

through a training course in Nairobi, Kenya. Field medical documentation has been provided to assist demining organizations and provide standardization across the program. Medical standard operating procedures for all organizations have been reviewed by the UNMAO Medical Coordinator to ensure they are in compliance with the NTSG, and technical advice has been provided to help organizations improve their medical standard operating procedures.

Medical Quality Assurance in Sudan

UNMAO Quality Assurance Officers receive medical QA training to ensure standards across the program are monitored and improved. Medical quality assurance has been improved with modifications to the QA inspection forms so that medics are assessed on not only the on-site requirements and equipment for medical support, but also their technical knowledge of treatment protocols. The *Quick Reference Pocket Guide* contains treatment protocols that have been agreed to by organizations, and medics can be easily tested by the QA officer. Shortfalls in knowledge of emergency protocols are reported to the organization and the UNMAO Medical Coordinator for special monitoring and assistance.

Conclusion

In summary, the nature of work undertaken by deminers and the environmental hazards they face in Sudan mean medical support to humanitarian-demining operations is essential. The focus now must be to ensure standards are in place so if an accident does occur, adequately-equipped and trained medics will be able to provide life-and-limb-saving treatment. ♦

See Endnotes, page 113



Russell Wyper graduated from Monash University in Australia with a Bachelor of Science in genetics and human physiology in 1991 and is currently completing a Master of Science in international health with Curtin University in Australia. When he wrote this article, he was employed as the Medical Coordinator for the U.N. Mine Action Office in Sudan. He is currently the Southern/Eastern African Regional Manager for Cranfield University based in Malawi and Kenya. His position involves assisting countries and organizations to enhance their leadership and management skills. He also continues to assist mine-action and private-sector medical staff and managers to develop their management and emergency medical technical skills.

Russell Wyper
Southern/Eastern Africa Manager
Cranfield University
E-mail: r.wyper@cranfield.ac.uk,
russellwyper@yahoo.co.uk

News Brief

Schonstedt Gives More than US\$76K in Detectors

Schonstedt Instrument Company, based in West Virginia, has donated more than \$76,000 in magnetic detectors to global clearance organizations and operations since January 2007, when it began a public-private partnership with the U.S. Department of State's Office of Weapons Removal and Abatement in the Bureau of Political-Military Affairs. Schonstedt has donated more than 74 detectors, each worth a total of \$1,029, to deminers. The company sent 20 of the detectors to Kenya and Somalia.

The enterprise, Schonstedt Humanitarian Demining Initiative, is a partnership between the company, which donates one detector for every commercial detector sold, and the United Nations Mine Action Service, which helps prioritize donation requests. Full coverage of the partnership can be found in the Spring 2008 issue of the *Journal of Mine Action* (JMA 11.2, p. 54).