

**UMCOR'S PROSTHETICS  
AND ORTHOTICS PROGRAM**

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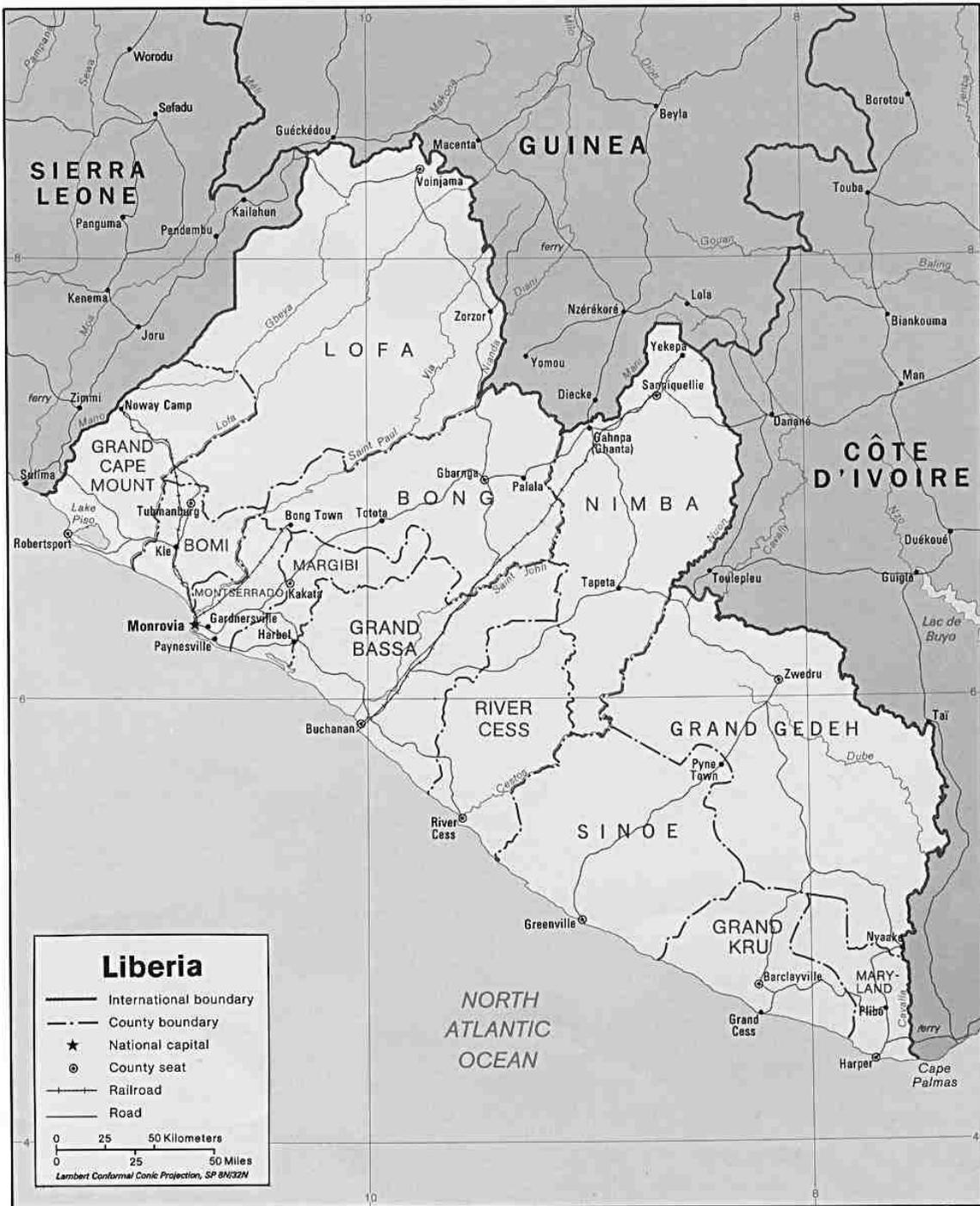
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## **ACRONYMS AND ABBREVIATIONS**

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BMC	Benedict Menni Center
CPO	Certified Prosthetist/Orthotist
GBGM	Global Board of Global Ministries
HI	Handicap International
KAFO	Knee-Ankle-Foot Orthoses
ICRC	International Committee of the Red Cross
LWVF	Leahy War Victims Fund
MEKP	Methyl Ethyl Ketone Peroxide
P&O	Prosthetic and Orthotic
TATCOT	Tanzanian Training Center for Orthopedic Technologists
UMCOR	United Methodist Committee on Relief



## **EXECUTIVE SUMMARY**

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Mel Stills and Cathy Savino of the Leahy War Victims Fund (LWVF) visited Liberia from April 1–6, 2002 to assess the United Methodist Committee on Relief (UMCOR) Ganta Rehabilitation Project. The \$1,915,901 award (grant number 669-A-00-00-00006) funded by LWVF, began on September 24, 2000 and is scheduled to end on September 24, 2003. To date, \$1,500,000 of that total estimated cost has been obligated with a mortgage of \$415,901 remaining.

USAID began support to this prosthetic and orthotic (P&O) workshop in 1997 through a grant to UNICEF. The UNICEF grant ended and UMCOR submitted an unsolicited proposal to take on the responsibility of the Ganta workshop. UMCOR inherited an activity with many problems. The salaries, based on a UNICEF scale, were high, the workshop was not a part of the hospital complex, and despite a state-of-the-art workshop with the best equipment, prosthetic and orthotic workers were technically unsupervised. The result was less-than-acceptable services.

### **Recommendations**

Only dramatic action will bring about the needed changes in this project. Based on site visits, reviewing records, and observations, the LWVF team makes the following eight recommendations:

1. The staffing and the salaries of workshop employees relative to their positions appear to be unsupportable at the existing levels. There are 21 people on staff at the Ganta P&O workshop, which includes 6 orthopedic technicians and 6 bench workers. The UMCOR budget for local salaries is reduced from year two to year three by \$9,384, but it is unclear how further cuts will be handled. A clear plan as to how the P&O workshop will fit under the administrative control of the Ganta hospital is necessary.
2. The number of devices delivered in 2001 was 115. The number of devices delivered in 2000 was 122. This is less than 20 devices per year per technician. One P&O standard calls for a production goal of 70 appliances per technician per year. By this estimate, the workshop could operate with less than two technicians. UMCOR's implementation plan aims for 600 amputees fit per year. Ganta falls far short of either goal. The workshop is overstaffed for its current clinical needs. A careful assessment of who should be retained in a downsizing process must be conducted. The hiring of a technical P&O consultant who does not necessarily have to stay on staff after reorganization should be considered.

3. Regardless of the time frame established for downsizing and transfer of control, a qualified Category I Certified Prosthetist/Orthotist (CPO) is needed to upgrade the quality of P&O services.
4. Management of physical space, equipment, and supply purchases must be reorganized.
5. A clear understanding of the role and responsibilities of UMCOR needs to be established, both with its staff and with the hospital.
6. The effect of downsizing and future placement of the two Liberian students in training at the Tanzanian Training Center for Orthopedic Technologists (TATCOT) must be considered.
7. Expanded support to the Benedict Menni center (BMC) should be considered.
8. The possibilities of transferring excess equipment should be explored to better enable the BMC, leprosy treatment center, or Handicap International (HI) to provide more quality care for the people with disabilities of Liberia.

# **INTRODUCTION**

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Mel Stills and Cathy Savino of the Leahy War Victims Fund (LWVF) visited Liberia from April 1–6, 2002 to assess the United Methodist Committee on Relief (UMCOR) Ganta Rehabilitation Project. The \$1,915,901 project, funded by LWVF, began on September 24, 2002 and is scheduled to end on September 24, 2003. To date, \$1,000,000 of that total estimated cost has been obligated with a mortgage of \$915,901 remaining.

USAID began support to this prosthetic and orthotic (P&O) workshop in 1997 through a grant to UNICEF. The grant ended and UMCOR submitted an unsolicited proposal to take on the responsibility of the Ganta workshop. UMCOR inherited an activity with many problems. The workshop salaries were high because they were based on a UNICEF pay scale, the workshop was not a part of the hospital complex in which it was located, and, despite a state-of-the-art workshop with the best of equipment, prosthetic and orthotic technicians were technically unsupervised. The result was that less-than-acceptable services were provided to patients.

This long-awaited LWVF trip had a two-pronged scope of work: (1) Technical: How well are people with disabilities being diagnosed and treated by the Ganta workshop? (2) Managerial: What are the prospects that the Ganta hospital will successfully integrate the workshop into its overall system (and thereby sustain its operation)?

## **Why Ganta?**

It is useful to know some of the history of the LWVF involvement in Liberia. In hindsight, it probably was not a good idea to build the workshop in Ganta. The whole basis for the decision, that there were large numbers of people awaiting limbs and needing prosthetic and orthotic services, has never materialized.

One can see, however, that there were and are few good choices in Liberia. None of the hospitals—JFK, Phoebe, St Joseph’s—offered a viable alternative. The Benedict Menni workshop, which helps children with polio and other orthopedic problems, had been looted three times. Ganta was chosen because of the perceived need and its strategic location—it is far from Monrovia and on the relatively safe compound with the Ganta hospital. It was a calculated risk to chose Ganta; while it may yet work out, it seems possible it will not.

## **UNICEF Stewardship**

LWVF awarded a grant to UNICEF from March 1998 to November 2000 for the physical rehabilitation of Liberians with disabilities, primarily those injured or effected by the long running war in the country. There were many difficulties encountered during the grant period. The workshop officially opened in December 1999, and for the first 2 months there were 65 patients seen each month. The number has dropped consistently since those first and all-time-high figures. (While it is true that there are larger numbers of people seen at the clinic each month for other rehabilitation services, primarily for physical therapy, the team focused on prosthetics/orthotics. This was the *raison d'être* of the workshop and of the USAID grant.)

The Ganta workshop was given an overabundance of equipment and supplies. Based on the long delays in getting imported materials, the uncertainty of conditions in Liberia, and the lack of professional oversight, the Ganta workshop ended up with a mishmash of both machinery and material, including a redundant set of machines in the event that one failed.

Lastly, the staff salaries and benefits package set up by UNICEF were overly generous. The salaries of the prosthetic and orthotic technicians far exceeded the salaries of hospital personnel.

At the end of UNICEF's grant, there existed an extremely well-appointed workshop, an eclectic inventory of supplies, machinery that no one knew how to work or maintain, a staff with some but not enough professional expertise to provide services, and a dwindling number of clients to be served. The question for USAID at this point, January 2000, was what to do next.

## **Why UMCOR?**

In January 2000, UMCOR and LWVF came together to discuss new opportunities. UMCOR, with its long standing history in Liberia, was planning to revitalize the Ganta Methodist Hospital. With independent funding and strong support from Methodist headquarters, UMCOR was prepared to revitalize the ailing hospital. (Methodist missionaries had founded the hospital and were instrumental in its upkeep until they were forced to leave because of the war in 1989.)

Management of the workshop was a natural progression within that plan. Located in the same compound as the hospital and providing potential resources in the fee-for-service plan envisioned, UMCOR's management plan made sense. Given that the plan addressed the sustainability of the workshop and presented a process to reach that goal, USAID agreed to help support the effort.

A cooperative agreement between USAID and UMCOR was signed on September 18, 2000, taking the grant to September 24, 2003 based on their unsolicited proposal "Strengthening and Upgrading the Ganta Prosthetics and Orthopedic Workshop and Revitalization of the Ganta United Methodist Church Hospital." The total estimated cost of the agreement was \$1,915,901.

## **UMCOR's Beginning**

One of the first requirements under the grant was to hire a professional certified prosthetist/orthotist (CPO). This proved to be difficult for a number of reasons.

Because of general insecurity in Liberia, there were frequently changing signals from USAID as to whether a full-time position was necessary. The aforementioned insecurity made Ganta a less-than-desirable posting. Lastly, UMCOR's relative inexperience in the rehabilitation field meant that they were unfamiliar with many of technical resources that might facilitate such a technical search. Perhaps this situation contributed to an over-reliance on USAID/Washington, putting UMCOR in the position of being tentative and reactive in their decision making when just the opposite was needed.

UMCOR assumed control of the workshop under terrible conditions. UNICEF let go of their responsibilities slowly (there were several extensions) and with minimal cooperation (in part because of staff changes).

Based on USAID advice, UMCOR brought in a consultant to review the state of the workshop and its staff. While it is true that the Ministry of Health in Liberia does not recognize the high level of skill involved in P&O work, it was a mistake for the report to recommend a 30 percent salary increase in the absence of other considerations. This recommendation was shared with the workshop employees. On top of already inflated salaries, UMCOR had to contend with workers who fully expected that the consultant's recommendations would be honored. The scene was set for a difficult transition.

## **Ganta Hospital**

Meanwhile, the hospital was in a deplorable state. In addition to the neglect and disrepair, there were serious personnel issues to deal with and it was proving difficult to find a hospital administrator willing and capable to do the job.

The hospital has a staff of 167 employees though it is planning to downsize to 100 employees soon. The new hospital administrator has ambitious plans to make the hospital and its environs a center of superior services. She has been given 3 years to complete the task. Plans are already under way to recruit new expatriate doctors and nurses, including an orthopedic surgeon. P&O is not, however, the highest priority. There are many competing demands, including basic issues of water and power. (The current cost of fuel is seriously affecting service throughout the country). Though the recruitment of an orthopedic surgeon would be a great step forward in terms of services offered, at this stage the management burden of the workshop is more a liability than an enticement.

The hospital is managed by the Global Board of Global Ministries (GBGM) of the United Methodist Church, New York. UMCOR is a subset of that larger entity. Funding for one entity does not necessarily apply to the other. It should be noted that the running cost for the hospital, estimated at about \$18,000 to \$20,000 per month is substantially less than the allotted costs for the workshop, approximately \$55,000 per month. This comparison is not technically a fair one because the \$55,000 includes costs beyond the Ganta workshop, but it is useful as an indicator of the work that will need to be done to make the workshop costs proportionate to the hospital.

The plan is to incorporate the workshop into the hospital's system as soon as possible but the slow progress of improving the hospital as well as the intractable problems at the workshop makes merging the two a more challenging endeavor.

## **The Workshop**

On one hand, the staff of the Ganta workshop are welcoming and eager. From their point of view, the grant experience has led to a strange set of circumstances. The staff live in Ganta solely to do their work. (Most are from other areas of Liberia.) As seen in the technical assessment, there is still a need for professional oversight and management. Staff have been trained in their professions, but they see a dwindling number of patients. They want to improve their professional expertise, but the long wait for a mentor has discouraged them.

On the other hand, the staff take little responsibility for improving things. No members understand how a workshop should be run; instead, the staff look to UMCOR to solve all problems.

The staff have been insulated from the real management of the workshop. With the number of clients as low as 115 patients per year, there should have been staff reductions long before USAID called for them. (The 115 number represents newly fitted patients. The overall figures for 2002, based on reports is 310, which includes physical therapy, wheelchair provision, and referrals.)

Although the LWVF team fully expected that its recommendations would include the need for a full-time CPO, the team is more concerned that the viability of the workshop be addressed. There is still a need for a mentor, but it is questionable whether this service, while necessary, will enhance the workshop's longevity.

Ganta hospital can not be expected to absorb a staff of 21 members. It would be useful to understand how the staff members view the circumstances. Time did not permit more than a cursory meeting with the hospital administrator.

Outreach efforts have not worked. Bundling clients so that 30 per month are seen does not appear to be working so well either and it underutilizes the talents of the staff. The clients seen during the team's visit had been waiting for hours. Although it is true that the presence of the team's CPO may have caused this particular wait, the clients visited in the transit area appeared to have been waiting for a long time. It appeared that client feedback was in no way sought or acted upon.

On the other hand, there have been considerable efforts to improve some areas. A new transit home is being built and will be completed in the next 6 months. The staff are anxious to transition away from the Otto Bok components to the International Committee of the Red Cross (ICRC) system.

Two students continue their studies at the Tanzanian Training Center for Orthopedic Technologists (TATCOT). The grant provides funding so that they can complete the Category II training.

# **TECHNICAL ASSESSMENT**

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The team visited the Handicap International (HI) workshop at JFK Hospital, the Benedict Menni workshop supported in part by the UMCOR grant, and the leprosy treatment center in Ganta, Liberia. The purpose of these other visits was to learn what P&O service is available in Liberia and to observe technical and operational methods used in providing rehabilitation services.

## **Ganta Workshop and Hospital**

The workshop began clinical operation in January 2000. No technical assessment of P&O services had been done.

A large number of patients were asked to come to the clinic so that the team might see what technical services they had received. The scenario the workshop staff had prepared was that the entire technical staff was to assess each patient and present their recommendations. There were between 25 to 50 patients in the waiting area. Patients were put into smaller groups to facilitate a more realistic treatment plan.

The patients presented provided a representative caseload receiving treatment at the center, namely, adult and child, prosthetic and orthotic, war injury, polio, trauma, snake bite, and disease. All the patients who had received an orthosis or prosthesis had benefited in some way from the services provided. The majority were independent ambulators. The majority would have also benefited from modifications, adjustments, and changes that would have increased comfort or functional levels or both. Greater attention to detail was needed.

### ***Prosthetics***

All prosthetic sockets were found to have sharp, unfinished edges. In some cases this resulted in calluses, and in some cases skin breakdown. Some patients were found also to have breakdown over the distal anterior area of the tibia. These problems would reduce wearing time of the prosthesis and possibly result in discontinued use of the device altogether. Some sockets did not fit well at all, but this may be a result of soft tissue atrophy common after first fittings.

Trans tibial amputees appeared to have benefited most from prosthetic services. Their gait patterns appeared appropriate and they ambulated unassisted, but greater attention to detail would have further improved comfort, wear time, and function.

Trans femoral patients appeared less functional. Some had well-matured, appropriate stumps but

continued to use crutches after fitting. Gait patterns were less than desirable. Sockets did not appear to fit well. The methods used to make a model for forming the sockets were unconventional.

The negative plaster wrap is modified, buildups are added and socket circumferences are reduced by adding a combination of plaster of paris from bandages and white cement. The modifications to the negative wrap are extensive. This very labor-intensive procedure is used because the workshop does not have the appropriate quality of plaster of paris. It is nearly impossible to determine accuracy of socket fit with this method. When the prosthetist determines that all the necessary modifications have been made, the cast is then filled with white cement. This results in a model that is very difficult to further modify.

Laminated sockets are not as smooth as they should be, and inadequate fit is addressed by adding padding to the internal socket wall. The edges of the padding are not tapered to reduce edge pressure.

Alignment fixtures are not used, but alignment is addressed both statically and dynamically during prosthetic fitting. This process was not observed or demonstrated to the technical assessor but was explained by one of the staff members.

Kerry Sly, mission head of UMCOR, noted an older gentleman with a trans tibial amputation who was walking in the area. He had no prosthesis, and the crutches he was using were worn out. Sly asked him to come to the center, which the gentleman did. He did not know of the workshop but lived in the area. He appeared to be a candidate for prosthetic management, and Sly asked that one of the workshop P&O technicians examine the patient and get him registered. Four hours later, Sly again saw the gentleman in the area, and he asked if he had been taken care of. The man stated that no one had come to see him and he couldn't wait any longer.

### ***Orthotics***

Lower extremity orthotic management is of the metal and leather design. The use of thermoplastics was not observed. The knee joints of the orthosis presented were found to be improperly aligned. The drop locks used had been improperly modified in order for them to drop into position. This resulted in a locked knee that was difficult to position in extension and permitted excessive motion between the lock and the joint head. This will result in joint wear and breakage.

Staff indicated that they were soon to be out of locking knee joints. A check of the storeroom indicated that there were five sets of drop lock joints available. There are 51 sets of off-set-free joints available of the 60 sets originally ordered. Because the storeroom manager was on vacation, it was difficult to determine what joints had been used and what was available. There are 50 to 100 sets of uprights available which would indicate that there are other joint heads available. The issue of the storeroom, supplies, and ordering will be covered in a later section.

Ankle joints are also of limited supply. Solid ankle Y stirrups were available, but not used. Staff had made a limited-motion ankle for one patient using a lap type configuration. Workmanship was somewhat primitive and the description of the internal design was unlike any previously

seen. It appeared to be a design of limited durability.

One KAFO design observed used a pin attachment in the heel of the shoe. The metal upright was coming into contact with the ground because the hole was made low on the heel of the shoe and the upright attachment was too long. The patient had been using the device for some time now, and the problem had not been identified or addressed.

Two patients were presented for orthotic consideration. Staff demonstrated a thorough physical assessment of the patients. Both patients were post-polio but were totally independent without assistance. Both patients had paralysis of the quadriceps muscle resulting in an inability to actively extend the knee against gravity. With muscle substitution and alignment, these patients were independent and very functional—generally the case in isolated paralysis of this type. Staff had recommended knee-ankle-foot orthoses (KAFO) with locking knees, which would reduce mobility. In the LWVF team's opinion, however, orthotic services were not indicated. With discussion and demonstration, staff indicated that they understood why orthotic services were not needed for these two individuals. Based on this experience, it may be assumed that other patients may have been treated inappropriately for similar conditions.

Two KAFOs were to be fabricated in the workshop, but no progress was noted during the visit. Polypropylene is not being used in orthotic fabrication, which is understandable because of the lack of quality plaster of paris.

### ***Other Clinical Services***

These services were not observed but were noted while reviewing monthly reports. Reports indicate staff has participated in many closed reductions of fractures and dislocations. This is not an appropriate service that a prosthetist or orthotist should provide and not an area in which they receive any training during P&O schooling. This does not add to the capacity of the P&O workshop and serious complications are possible. Medical doctors are available at Ganta and workshop staff may assist in the post reduction and casts, but no other role is indicated. Their involvement may have been overstated.

### ***Work Loads***

Records of P&O services and clinical visits to the workshop do not support current staffing levels. A treating staff of five to six P&Os and six bench technicians that delivers 110 to 120 devices is only 2 to 3 devices per month per staff member. The same staffing levels with appropriate components, materials, and patient numbers could support in excess of 600 devices per year. Current production numbers would be what is expected of one to two P&Os and one to two bench workers.

Outreach activities to identify and transport patients to the Ganta workshop are ineffective. It is unrealistic to expect patients to travel the distances required to come to the workshop. In the past two years, efforts to increase patients numbers have not been effective.

### ***Workshop Space***

All machines appear to be operational but some maintenance is needed. The electric switch on one carver was noted to be broken and Kerry Sly has undertaken repairs. No replacement sanding belts or sanding heads had been ordered for the shoe machine. An excessive number of sanding belts are available for the vertical sanders, and it does not appear that these machines receive much use. The LWVF technical assessor demonstrated how a pattern could be made and how replacement pieces could be fabricated from the available sandpaper belts. The staff has been repairing the one 6-inch belt for the shoe machine, and new ones could be made from the available supply.

Sanding sleeves were found for the carving machines in the storeroom. These had never been installed. This was done in a few minutes and the staff began using them.

The small lathes in the workshop appear to have been unused, as does the wood planer. The two drill presses were underutilized. The oven appeared to have had little use, but if thermoplastics are not used, this is understandable. The band saw does not have extra blades available and the blade welder is not working properly.

The patcher sewing machine was found to be non-operational. Thread tension was too tight, but once it was adjusted, the staff began to use the machine.

Window screens are being stored in the machine space along with some boards. Other items were also being stored in the workshop, such as a broken electric bed without mattress in the gait area, an oxygen bottle in the bathroom, and a broken oven from Benedict Menni in the machine room.

### ***Storeroom***

The storeroom space has been doubled since LWVF's last visit. Items are more visible now and the inventory can be more readily controlled. It is obvious that excessive amounts of some items were initially ordered. There are many more sanding belts and cones than can be used in the near future. A stack of 30 or more steel sheets (20x30 inches) were noted in storage. Excessive amounts of foam padding is also in storage and these materials may degrade due to heat and humidity. There are excesses of many items, such as six hand drills. One of the boxes of hand drills arrived empty, so that there are now only five drills available. There are enough anvils to equip 5 to 6 workshops.

Since there is so much excess material and equipment in some areas and a lack of such things in other areas, a complete inventory of the workshop should be completed as soon as possible. Comparisons against original orders should be undertaken along with the records of components used in the provided devices. UMCOR staff should observe the process for completeness.

The workshop has run out of some items. Treatment records do not provide an indication of the component types used, and use rates cannot be calculated. Re-order cycles cannot be determined by review of records. Excesses in some area are offset with shortages in others.

Component catalogs are not available, and staff is using the original purchase order records for re-ordering items. It was noted that staff originally ordered orthotic knee joints by the left and right sides. Also available from the same source are straight joints that can be used on either the left or right sides and in the United States are \$10 cheaper per set. Using the straight joint heads provides the same function, may increase fabrication difficulty slightly, but will reduce inventory and cost. Similar items are available from most component suppliers.

There are between 20 and 50 unused Otto Bock external KAFO set-ups still in the black plastic bags they were shipped in that have become useless. Due to heat and humidity, the glue has separated the urethane from the keel and the urethane has begun to deteriorate. These items cannot now be used or returned. There are other items that may have gone bad by this time or are in the process of going bad.

Staff obtained some plaster of paris from the HI workshop. Ganta staff reported that the plaster had expired and would not harden, a situation never encountered by the LWVF evaluator. Upon mixing this material per the instructions, it had not yet hardened on the second day. HI is using plaster from an Ivory Coast address, and the same plaster should be ordered for the Ganta workshop. A check with HI might indicate why the material they provided is not getting hard and what procedure they are using. The use of white cement should be discontinued.

Very little polyester resin is available. The Ganta staff have tried boat resin, (two gallons are in the storeroom), but staff notes that it does not harden. Methyl ethyl ketone peroxide (MEKP) was provided as a catalyst, and if enough was used it should have set up. Staff noted that the supplier could not provide information on the product. This product may also be available regionally, possibly in the Ivory Coast. UMCOR staff should follow up on this matter.

It was stated that operational manuals for all the equipment installed were unavailable and that UNICEF had not turned them over to the workshop. Kerry Sly had tried to encourage UNICEF to find these manuals, but her efforts were to no avail. While in the storeroom, however, the LWVF evaluator asked for the available catalogs and was brought a stack of material. Included in these papers were all the instructional manuals for the equipment at the Ganta workshop and the Benedict Menni Center (BMC).

## **Bennedict Menni Center**

BMC was established in the late 1980s by the Hospitaller Sisters. The workshop and physical therapy area was visited on Tuesday, April 2, 2002. Equipment has been purchased for the workshop through the cooperative agreement between UMCOR and BMC. An oven, shoe machine, and a large carver have been installed. This equipment has set idle for nearly two years because a transformer was not included in the original order. A great deal of pressure on UNICEF was required before they would provide the funds for this item. These items still remain underutilized. Proper gloves were not provided so that hot sheet plastics could not be properly handled. Sanding belts were not provided for the shoe machine. The cutting and sanding heads for the carver were not provided, so the carver has never been used. Sanding these heads could be done in the storeroom of the Ganta workshop.

The one Category II P&O and bench technician continue to make all knee and ankle joints from steel bar stock. To increase functional levels of these children, the weight of KAFOs and AFOs needs to be reduced. Aluminum should be substituted and affordable knee and ankle joints should be used. This workshop is using polypropylene donated through contacts in the United Kingdom. Tamarack ankle joints would be ideal for these children.

Upgrading components will greatly reduce fabrication time and social complications if these children stay in the center too long. Duplicate equipment is underused at Ganta and consideration should be given to giving it to Benedict Menni to enhance their capacity.

The Benedict Menni Sisters continue to be upbeat and positive concerning the future of this Center. They are a bright spot in Liberia.

## **Leprosy Treatment Center**

A short visit was permitted to this workshop. It is less than one mile from the Ganta workshop. Some new equipment has been installed. Electricity is only available for 1.5 hours per day three days per week. A new oven was installed, but the installer failed to note that the oven was rated for 115 volts and it was connected to 220 volts. It burned out during installation and has not and probably will not be repaired. The workshop primarily makes shoes and sandals for the Leprosy patients.

All handwork is completed in anticipation of when the power will come on so those projects can be completed on schedule. This workshop is supported in part by HI Belgium. Patients for prosthetic services are sent to Monrovia and the HI workshop at JFK Hospital.

Our guide of the center was a nurse whom we had met the first day at the Ganta Workshop. He is a trans tibial amputee from a reported tumor. He had been fit at the Ganta Workshop and was presented for evaluation. His prosthesis appeared to fit appropriately and he stated he was comfortable. At the leprosy treatment center a different story came out. He had also been fit at the HI workshop at JFK with the ICRC type prosthesis. He stated that the HI system was much lighter and he preferred it to the Ganta system because of its weight. He felt that he could walk much farther and was more comfortable in the ICRC system.

## **Handicap International JFK Hospital**

This facility was visited on April 2. The workshop was set up in the old P&O workshop area that had been looted 10 years earlier. There were usable pieces of equipment in position at one time, but all had been removed and placed in storage by the hospital.

The workshop is run by a clinical staff of 10 persons that include

- One Category II P&O from Togo
- Three Category III P&Os with on-the-job training
- Two shoemakers
- Four physiotherapists

In 2001, the workshop is reported to have provided

- 59 trans femoral prostheses
- 142 trans tibial prostheses
- 15 other items

The workshop is reported to have seen

- 171 polio patients
- 60 cerebral palsy patients
- 40 paraplegics
- 6 quadriplegics
- 28 orthopedic patients

The workshop uses the ICRC approach with thermoplastic components for both P&O. The workshop is small but well equipped to provide this technology. Data was not given regarding the total number of orthotic services provided but polypropylene KAFOs of the design developed by Vesin were being fabricated in the workshop. This design does not incorporate metal uprights or knee joints.

Four rehabilitation workers were interviewed. They are conducting a house-to-house search for people with disabilities. A sophisticated transportation system has been established to pick patients up and bring them to the center. Currently there are 48 stops the van makes to pick up and discharge patients. All the data collected is filed in binders that are available on the shelves in the office.

## **Summary**

The Ganta project needs a complete management overhaul. No actual harm is being caused to any one patient, but it is far from providing a quality service. The prosthetic and orthotic errors that are occurring are due to a basic lack of understanding of principles. Not addressing basic concepts of smooth, rounded edges, properly aligned joints, proper manufacturing and modification procedures, and prescription rationale can be addressed with proper mentoring. The inability to find and procure appropriate materials when other groups in the country can and the inability to maintain equipment and be creative in making substitutions (as is the case with available sandpaper for the shoe machine) demonstrates a lack of leadership. This workshop has had the finest equipment and components available, but the staff does not know how to use these tools to their fullest potential.

The monthly and quarterly reports demonstrate a very low workload, though staff have ample time and human resources to do a proper job. The Ganta staff has the capacity to perform well;

they have been trained but never have been properly directed, supervised, or mentored. Staff are willing to listen and ready for change. Hard decisions must be made to appropriately address the lack of management and leadership, the lack of oversight regarding administration of the Ganta workshop, and the lack of supervision and mentoring of workshop staff in the operation and delivery of clinical services.

No one can manage, supervise, or mentor this workshop off site. Appropriateness of items to be ordered cannot be determined without also knowing what is available in inventory, the needs of patients, and the volumes needed. Questions can be asked and misuse can be prevented as was the case with the excess order of cosmetic hands from outside the site, but how many orthotic joints, prosthetic feet, resin, PVA, or plaster of paris is needed is based on use history and future projections. This is a portion of the job of an onsite mentor, not an offsite technical consultant. The technical consultant's willingness to help in the interim has resulted in needless delays and unrealistic expectations.

## **APPENDIX A: SCOPE OF WORK**

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Mel Stills and Cathy Savino of the Leahy War Victims Fund contract will assess the United Methodist Committee on Relief project in support of the Ganta United Methodist Church Hospital, orthopedic workshop, and Benedict Menni Center.

UMCOR became active in Liberia in 1996 in areas related to the support of farmers. The Ganta Orthopedic Workshop was built, equipped, and made operational through funds provided by the LWVF to UNICEF starting in 1997, but did not become operational until December 1999. UMCOR assumed operational control of the workshop and the LWVF grant from UNICEF at about the same time.

UMCOR recognizes its lack of experience in the disability sector and the serious problems facing the establishment of a sustainable, quality prosthetic/orthotic service delivery program at the Ganta Hospital. UMCOR remains optimistic that they can effectively

- Identify appropriate prosthetic/orthotic technology
- Revise personnel practices
- Establish an advisory board for the P&O workshop
- Define a schedule of fees for disabled patients
- Carry out a limited survey on fees for service
- Define Ganta's relationship with the JFK Hospital
- Enable the workshop to become fully operational
- Provide essential training to workshop staff
- Put in place a schedule of fees
- Further define the role of the Ganta P&O Workshop
- Upgrade buildings and provision of supplies to Ganta Hospital
- Strengthen administrative and management systems
- Provide primary health care
- Establish a cost-sustainable facility

The last technical and administrative assessment of the Ganta project was undertaken in January 2000. Serious discrepancies in the technical capacity of those providing P&O services were noted and recommendations were made. Since the last LWVF assessment, modifications to the structure have been made to better accommodate patient care and security of expensive materials and components utilized. Some staff has received upgrade training at the TATCOT P&O school and quarterly reports indicate P&O services are ongoing at the workshop.

A workshop mentor was hired but his employment was short lived. A suitable replacement has not been identified to date, resulting in little outside technical oversight of P&O services provided to date.

This assessment will review and access

- Quality of P&O services provided through the workshop
- Quantity of P&O services provided through the Ganta workshop
- Diagnostic conditions of the patients managed through the workshop
- Established waiting and priority list for patients awaiting treatment
- Medical/surgical/therapy services available for pre and post O&P treatment
- Transportation services available for patients receiving treatment
- Hostel accommodations
- Maintenance of facilities and equipment
- Safety in the workshop
- Modifications made to the workshop
- Inventory and ordering practices
- Progress made in identification of appropriate P&O technologies
- Progress made in introduction of ICRC component
- Staff structure and appointments
- Working relationship with the nearby leprosy treatment center
- Organizational structure of the workshop
- Referral systems to the hospital and workshop
- Level and nature of current support activities for the Benedict Menni center

This assessment will require that there be an opportunity to observe a wide range of patients previously managed by the workshop, either at the workshop or in the field. Patients selected should represent the majority of cases treated, such as transtibial and transfemoral prosthetics, ankle foot orthosis, and knee ankle foot orthosis. Other areas such as upper extremity and spine may also be informative to see.

Visits to any other programs providing rehabilitative services should be arranged.

For the development of the program the team will

- Report the findings of the reviews and assessments undertaken
- Make specific recommendations regarding any concerns or deficiencies identified
- Identify any methods, techniques, procedures that will have benefit to other LWVF-funded projects
- Provide a written report of all findings of this project evaluation

## **APPENDIX B: ADDITIONAL TECHNICAL ASSESSMENT**

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Approximately 25 patients were seen. Overall, function was acceptable, but many discrepancies were noted.

- Majority of prosthetic devices demonstrated lack of attention to detail (for example, proximal edges are left sharp and unfinished resulting in patient discomfort (and ultimately device will not be used.) Additionally, sharp edges contribute to early liner deterioration. Orthotic knee joints are noted to be misaligned and inappropriate modifications were made in order to permit locking mechanisms to be engaged.
- Providing smooth edges is a very basic principle of appropriate prosthetic delivery. Without the basics being adhered to, there's no assurance that more advance and sophisticated procedures are being addressed.
- The extensive machinery in the workshop is of the best quality. However, it is neither being used to capacity nor properly maintained. On a previous visit machinery (a router) was improperly wired so that it ran backwards. On this visit the shoe machine was not operating because it lacked sandpaper but inventory was available that could have been modified to make it work
- Two patients were presented for orthotic prescription both patients independently ambulatory without assistance. Use of orthoses would not enhance function. Ganta team prescribed inappropriate device when none was needed
- Review of records indicate workshop staff actively participate providing orthopedic reduction of dislocation and fractures. Their O& P training does not provide for this and lack of medical surgical oversight may result in therapeutic misadventures.

## **APPENDIX C: CONTACTS**

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### USAID/US Embassy/Monrovia

*Tel: 231-226-370 ext 1476, Fax 226-150 or 148*

Edward Birgells, Mission Director, USAID

Edward Collins, Regional Security Officer

Tom White, Deputy Chief of Mission

### Benedict Menni

Sister Incarnation (Inca) Gonzalez

### General Board of Global Ministries of The United Methodist Church

*Ganta Hospital/ Liberia*

Ann Gorton, Hospital Administrator

### Handicap International

*JFK Hospital, hilib@wanadoo.be*

Corinne Bali, country director

Mahmadou Soule, chief orthopedic technician

Josephine Grose, RN/physical therapist supervisor

Henrique Edward Russell, orthopedic technician

### Leprosy Center/Ganta

John Willie, nurse

Martha Wyah, nurse

Richard K. Duana, ortho shoe technician

### United Methodist Committee on Relief

*UN Drive, Monrovia, Liberia tel 231-227-317*

Mr. Kerry Sly, Head of Mission

Mr. Julius K. Sele, Project Manager

United Methodist Committee on Relief /Ganta

Nestor Suah, Chief Orthopedic Technician  
Moses D.K. Lenyazwe, prosthetic technician  
Oveintor P Sanghay, ortho shoe technician  
James B. Daniel, orthotic technician  
Sylvestor Neufville, orthotic technician  
Dia Gonquoi, orthotic technician  
Peter Q. Jones, physical therapy Assistant  
Menah H. Sumo, physical therapy Assistant  
Sheraton Nye, bench worker  
Dennis Wonyench, bench worker  
Segfred Gogoel, bench worker  
Nora Johnny, social worker  
Rebecca Williams, administrative assistant  
Kuoh Kemah, radio operator

UNICEF

*Hotel Africa Road, Banjor, Virginia, Monrovia Tel 231-22-61-38*  
Samuel N. Momanyi, Programme Coordinator  
Ms. Wokie Weah, SWAYS project coordinator

## APPENDIX D: ITINERARY

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<b>Day</b>	<b>Time</b>	<b>Activity</b>	<b>Venue</b>	<b>Persons</b>
Monday, April 1	2:00pm	Arrival of the LEAHY War Victims Fund Team	Roberts International Airport	Mel Stills and Cathy Savino
	3:45pm	Arrival at the U. S. Embassy	U. S. Embassy	Mel Stills and Cathy Savino
	4:15pm	Debriefing with the RSO	Chancery	Mel Stills and Cathy Savino
	5:20pm	Settling in the Apartment	Sam and E Apartment	Mel Stills and Cathy Savino
Tuesday, April 2	8:30am	Meeting with the USAID Director, Edward W. Birgells	USAID	Mel Stills and Cathy Savino
	9:30am	Meeting with Handicap International	Handicap International Rehabilitation Center in the JFK Compound	Mel Stills and Cathy Savino
	11:00am	Meeting with the UNICEF Representative	UNICEF	Mel Stills and Cathy Savino
	2:30pm	Meeting with the Project Officer and Country Representative of UMCOR	UMCOR	Mel Stills and Cathy Savino
Wednesday, April 3	8:00am	Travel to the Ganta, Nimba County with the Project Officer and County Representative of UMCOR	Ganta Prosthetic and Orthopedic Workshop	Mel Stills and Cathy Savino
Thursday, April 4		Continuation of activities in Ganta	Ganta Prosthetic and Orthopedic Workshop	Mel Stills and Cathy Savino
Friday, April 5	8:00am	Travel to Monrovia	USAID	Mel Stills and Cathy Savino
	2:00pm	Debriefing the USAID Director	USAID	Mel Stills and Cathy Savino
	4:00pm	Briefing the U. S. DCM	Chancery	Mel Stills and Cathy Savino
Saturday, April 6	9:00am	Departure	Roberts International Airport	Mel Stills and Cathy Savino