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Standards Working Group Meeting Recap September 7, 2022

The ISWP Standards Working Group met by conference call on Wednesday, September 7 12:00 – 1:30 pm U.S. Eastern Standard Time/17:00 – 18:30 GMT. This provides a meeting recap. Action items and individuals responsible are shown in bold/underline.

Next call: Wednesday December 14 , 2022 12:00 p.m. U.S. Eastern Standard Time/17:00 GMT.

- 1. ISWP Update:** ISWP has been working to move the organization outside of the university. The separate entity is established, and an offer has been made to a new executive director who is an occupational therapist, has led several wheelchair clinics in UK and currently works in South Africa as part of an NGO supporting healthcare in Africa. We anticipate he will join in November 2022. ISWP received a commitment from USAID for over \$1 million which will be awarded to the new entity beginning in January 2023. At that time, Pitt's role will shift from leadership to program initiatives.

WHO is holding a late October 2022 meeting with stakeholders to review the Global Wheelchair Service Standards, a joint WHO/ISWP/ISPO initiative which has been under way for the past two years. ISWP is working with ATScale to co-host a side meeting in conjunction with the WHO event to review wheelchair sector priorities established at a 2018 Bangalore meeting, discuss promoting and adopting product and service standards, and establish a method for tracking information such as services provided and wheelchairs delivered worldwide.

ISWP launched the Wheelchair Educators' Package, developed by a group of over 80 volunteers worldwide, at the World Federation of Occupational Therapists (WFOT) World Congress in Paris in late August ([hyperlink to presentation at WFOT](#)). The Educators' Package is designed to support the inclusion of wheelchair services training in academic training institutions.

Jon Pearlman has been the convener of the ISO technical committee working group. In October 2022, Bill Ammer, Ammer Consulting, will be the new convener, and Stephanie Vasquez will continue as secretary.

2. **Wiki and Wheelchair Testing Centers.** There currently are two ISWP working Groups: Standards and Wheelchair Testing Centers. The Wheelchair Testing Centers group is focused on those who are doing wheelchair testing but has evolved to include other types of AT testing. Since there is overlap, the ISWP team decided to consolidate the groups. The final Wheelchair Testing Centers call will take place on Wednesday, September 14. Wheelchair Testing Centers' members will be invited to participate on the Standards Working Group calls which are held quarterly on the second Wednesday of the month. The next Standards Working Group call is on Wednesday, December 14.

The meeting recording is available here: <https://wheelchairnetwork.org/kb/meeting-recordings/> Testing centers: <https://wheelchairnetwork.org/kb/wc-testing-centers-map/>

3. **ISWP Testing Updates:**

Rolling Resistance Testing: Holly Wilson-Jene is developing a calculator which will combine test results and wheel and caster rolling resistance data to help clinicians assess different combinations of wheels and casters for specific clients' weights and surfaces. She is working to get clinician feedback now on the current prototype.

Caster Testing: Jack Fried reported that the manuscript for the bushings versus bearings study was accepted by RATE, the *Journal of Rehabilitation and Assistive Technologies*, with some suggested revisions. We are discussing working with Participant Assistive Products to develop a caster using bushings for the organization's chairs, test the casters in our lab and then put them in the field to obtain real world performance data. From previous failure trend analysis work, The Pitt team, including Mark Sullivan and Weeze Walker, are developing a position paper based on maintenance and repair best practices for caster components.

4. **Steve Williams, Kyaninga Child Development Centre, Uganda:**

The child development center has been focused on rehabilitation and therapy for 9 years, but past few years started to focus on mobility. The massive need for wheelchairs and mobility equipment and inability to get equipment has spurred their work. They had been obtaining second hand equipment but the lack of spare parts was a major reason for creating a team to develop locally produced wheelchairs. Their focus is on bamboo because of local material availability and low cost. They have worked for over two years to find an effective method to join bamboo to obtain a strong, durable joint, have developed multiple prototype versions, and are continuing to run tests to determine how their current design (version 7) withstands use in the local environment, which includes wet and dry seasons. Wheels and cushions are currently purchased for their wheelchair. To test real life durability of the bamboo structure, they have built trailers and carts from the bamboo joint technology, which local farmers are using to transport goods to market. They are constructing a workshop and expanding testing capabilities, and are working to gain user feedback on their products. They built a carousel for durability testing and also run impact tests. They are developing assembly jigs to ensure consistency between wheelchairs during production. Standards Working Group members provided input on the following:

- a. **Caster testing:** This testing is available at the University of Pittsburgh (Pitt). Jon Pearlman reported that some groups set up jigs and test casters on a double drum.
- b. **Ball impact test:** Pitt does seat impact testing using a soccer ball filled with lead beads which are used in shotgun shells, which can create something heavy enough to swing against the back rest. An alternative is to use metal nuts and bolts mixed with sand.
- c. **Testing dummy:** Each lab makes its own. There are two sets of drawings available – one on the ISWP Product Wiki and another available through ISO. Bill Ammer has developed a wood dummy and stacks metal in the base and up the torso to change the load and center of mass. A supplier in the U.S. built one of Pitt’s dummies, but it would be cheaper to build in Africa.
- d. **Physical wheelchair for review:** Shona mentioned the need for clinically oriented standards that focus on the interface between user and product, and prioritizing those tests and standards. She is concerned about the wheelchair user injuries she has seen over the past few years, and that this is not currently being prioritized. It is not clear how to bring the seating interface with the user into the wheelchair standard to measure and ensure quality.

Jon agreed, and outlined the current standards processes. Product standards are first tested in lab environments and prior to any product going to market. Next, there is a process where clinicians and technicians review the product and agree it is usable and safe. There is value in standardizing this clinical assessment procedure and having a way to approve a product not only based on technical aspects but also on clinical standards of usability. Pitt helped to establish this with veteran’s hospitals in US and Jon helped to develop CLASS’s technical committee to review products for sale through CLASS. Pitt also proposed developing procurement guidelines in a recent grant proposal which was not funded.

Shona thinks this needs to be done as current standards focus on physical design and function of the chair itself, not the interface between the user and the product. Being measurable, safe and easily repeated should be a goal as a responsibility to end users. Jon explained it might be a challenge for an organization to take ownership of the process and approve products. For example, the RESNA Standards Committee backed away because of challenges approving a product which is marketed as “approved by RESNA” without the necessary controls in place to ensure quality has not changed over time; otherwise, the organization could be at risk by consumer who was harmed by a product. This is a major gap in product and human rights standards and could be a role for ISWP. Shona also mentioned the importance of funding testing for urine damage and various materials.

5. **Colman Ndetembea, Kyaro Assistive Tech (www.kyaroassistive.org):** Kyaro Assistive Tech is an NGO in Tanzania which designs and produces assistive devices. The organization started in 2018 as a project to design a wheelchair that could perform multiple functions for a client – sitting, reclining and standing. The problem is that it is difficult to obtain assistive devices locally. Their mission statement is to make assistive devices that are affordable,

appropriate and appealing. Collaborative design is key in their work. Products are made at the organization's workshop in Arusha or are available through other organizations. Product include wheelchairs, gait trainer, standing frame, walkers, and other AT devices.

The wheelchair design is based on the Motivation and Wheelchairs for Kids products and the TATCOT wheelchair technician training course. Kyaro has delivered 341 assistive devices since opening its workshop. The organization employs 8 Tanzanians and has provided 28 wheelchairs provided free of charge. They use pressure relief and comfort cushions based on the user's needs, which are made locally, They test products with users and refine based on users' feedback. Shona will connect with them to assist in the seating parts of their design.

Colman expressed an interest in finding a nearby wheelchair testing center. Currently, the closest is South Africa, which is still some distance away. Shonaquip and the South African Board of Standards provide testing, although the standards board testing is more limited. Shona suggested there is an opportunity to establish an African Standards Working Group to support each other in the region.

6. Group updates: No group updates

7. Next Call: Wednesday December 14, 2022, 12:00 p.m. U.S. Eastern Standard Time/17:00 GMT.

	Bonnie Gonzalez, Free Wheelchair Mission		Andy Maynard, Mobility Worldwide
	Ben Judge, GRIT		Carlos Galvan Duque, Universidad Iberoamericana
	Keoke King, Participant Assistive Products	✓	Isabel Bolívar, Universidad Iberoamericana
✓	Dean Mubaiwa, ShonaquipSE		Marjelle Scheffers, BambooAbility
✓	Shona McDonald, ShonaquipSE		Anand Mhatre
	Matt McCambridge	✓	Jon Pearlman
	Norman Reese, LeTourneau University	✓	Nancy Augustine
	Chris Rushman, Motivation	✓	Holly Wilson-Jene
	Don Schoendorfer, Free Wheelchair Mission	✓	Stephanie Vasquez
	Scott Walters, Mobility Worldwide		Keyner Gonzalez, UEIA University
	Eric Wunderlich, Latter-day Saint Charities		Carlos Alberto Costa, Universidade de Caxias do Sul
✓	Jack Fried	✓	Elia Bernabeu Mira
✓	Bob Appleyard	✓	Jim Watson, CIC
	Laura Ramirez		Mariana Castro Medina
✓	Steve Williams, Kyaninga Child Development Center	✓	Pearl, Kyaninga Child Development Center
✓	Clive Brett, Kyaninga Child Development Center	✓	Colman Ndetembea, Kyaro Assistive Tech

Prepared by: ISWP Pitt Team