February 25, 2008

To Whom It May Concern:

Medical, Functional, Social, and Equipment History

John Doe is a 28-year-old male with a medical history significant for a C2 spinal cord injury, sustained 8/27/2000. He has a surgical history for a phrenic nerve pacer, and continues to utilize the ventilator as back up throughout the day. He has a history of stage II sacral and occipital ulcers, with car tissue present. John lives in an accessibly private home with ramp entrance. He is dependent for all self-care and home management and independent for all mobility with his power wheelchair. Due to his spinal cord injury, John cannot walk. Furthermore, due to his level of injury he has no volitional movement in his arms and has poor balance. For this reason he can neither propel a Manual Wheelchair nor control a Scooter. Only with a Power Wheelchair can John access his kitchen for food. John has been utilizing an Invacare Ranger X Power Wheelchair (SN: 01C815695) with Power Tilt and Recline, and a Biodynamics Custom Back Support, controlled via a Sip and Puff mechanism. This wheelchair was paid for by Medicaid and provided by ABC Medical 7/10/01. Since receiving this wheelchair, John has gained weight and can no longer be supported in this wheelchair. It is now too small, with new onset of stage I ulcer along the trunk and ulcers on both lower legs. John weighed 140 pounds when he received this wheelchair. He now weighs 290 pounds. Furthermore, this wheelchair is damaged beyond repair at numerous components, requiring replacement. Since he has developed postural deformity and impaired skin integrity, and since the wheelchair is damaged beyond repair, this wheelchair is no longer a safe mobility device for him. As such, he requires a new power wheelchair. John was referred to “ABC” Therapy Department for evaluation of his wheelchair and seating needs.

Physical Assessment and Sensory Evaluation

A physical assessment was performed, which demonstrated spinal and pelvic deformity, as well as limitations in upper and lower extremity range of motion. Specifically, John presents with a fixed posterior pelvic tilt and fixed thoracic Kyphosis. There is a flexible scoliosis in his cervical spine, with apex on the right, and thoracic spine, and there is a flexible rotational deformity to the right. In addition, he presents with fixed thoracic rotation to the right. Bilateral scapulas are fixed in protraction. John is limited in hip range of motion, lacking 20-degrees of flexion from a functional seated position. In addition, he is limited in internal rotation by 15 degrees and adduction by 4 degrees. The result is both legs roll outward. His hamstrings are tight, but he is able to achieve functional extension when the seat to back angle is opened. There is edema in both lower extremities, which worsens as the day progresses. Both ankles are limited in dorsiflexion. John has no functional upper extremity or scapular movement. Due to his spinal cord injury, John presents with significant increased tonicity in extension, necessitating pharmacological intervention. This worsens when jostled or maneuver uneven terrain, like doorway thresholds or carpeted transitions in his home. When spasm is elicited he is thrust forward in the seat into a sacral sit position. In addition, due to his spinal cord

injury, his sensation is impaired below his level of injury. He has a history of sacral, occipital and heel ulcers: stage II to III. In addition, he has a recent incidence of increased pressure along his trunk and the lateral aspect of his bilateral lower legs, with stage I ulcer developing. John has recent complaints of significant pain in his pelvis, hip and knee along the left side. This appears to be positional due to his wheelchair being too small. John's measurements are as follows:

Hip Width=18"	Seat to Shoulder= 24"	Weight= 290
Seat Depth= 20"	Seat to Head= 34"	Height= 69"
Knee to Heel= 20"	Seat to Elbow= 19"	Chest Width= 15 ½ "
Trunk Depth= 9"	Elbow to Hand= 20"	

Accessories

A Biodynamics angle adjustable, 3 piece head support system with gel inserts is requested with additional covers for the pads. This headrest must be **detachable** for positioning. Once transferred in, his caretakers will tilt the wheelchair back and slide him back to transition his pelvis into the seat. If the headrest cannot be removed, he will not be safely transferred. The **Lateral Head Support Pads** are necessary to maintain his head upright. These two separate pads will be placed on each side of his head to support lateral control to maintain his head upright. Without these, his head falls to the side. Several alternative manufacturers were considered, but there was no single headrest to provide this extensive stability. John has been utilizing these since sustaining his injury with good results. **Gel Inserts** to overlay the pads are necessary due to his history of impaired skin integrity on the skull. Since these pads are placed snug to the head, without gel overlays he gets significant pressure on his skull. Although the pads are padded, the padding is not enough to ensure good skin integrity. Therefore, gel overlays are essential for good skin integrity. The **Extra Covers for all Three Pads** are requested due to his tendency to sweat and release oils. These covers become dirty easily, requiring a replacement for good hygiene. For safety and increased trunk stability, a **Biodynamics Custom Chest Strap** is necessary. This will allow for good support, preventing injury during transportation. When exploring options for chest support, we were unable to find a Strap that was wide enough or padded enough to support his trunk. John's chest width is 15.5" and his trunk width is 9". Those Straps commercially available were not thick enough to provide support. The result being John folded over the Strap and developed redness and complaints of discomfort. The current off the shelf option worked well for him when he weighed 150 pounds less and was leaner. However now, due to his girth, this thin strap cannot support him. He requires on that is 3" think and 42" long. We could not locate an equivalent that consisted of these measurements and was padded. Therefore, since he is development impaired skin integrity with the alternative, he requires a replacement that will provide support and promote good skin integrity.

Recommended Seating System

To halt the progression of deformity and promote improved skin integrity, a **Biodynamics Custom Contoured Back with Laterals and Hip Guides** is recommended for use with a Jay 2 Deep Contour Cushion. The **Custom Back Insert** is recommended for the addition of **Mixed Foams.** The pad of the ABS Back is not adequate to allow for accommodation to his spinal deformity and to promote good skin integrity. As indicated above, John presents with asymmetrical spinal deformity, with a fixed thoracic rotation. Furthermore, he has developed impaired skin integrity along the lateral aspect of his thoracic spine, near the spinous processes. The only way to promote improved skin integrity is with a Custom back, made of viscous foams, which can contour to this asymmetrical deformity. This can only be achieved with the Custom Insert fabricated with Mixed Foams. Several off the shelf manufacturers were considered but ruled out due to the need for asymmetrical support. Furthermore, John requires a back height of 24" for full posterior support due to poor balance and no trunk control. Off the shelf back supports run 20" tall at their max. Therefore, John can only be properly supported with a Custom back to accommodate to his asymmetrical deformity and provide him with the necessary height. In addition, **Custom Contoured Swingaway Trunk Laterals** are necessary to support his trunk and halt the progression of spinal deformity. John has developed a flexible spinal scoliosis. This deformity can only be controlled with properly placed laterals that contour to his trunk. Standard off the shelf laterals will not fully conform to John's trunk, resulting in peak pressure along his trunk. Furthermore, John has a trunk depth of 9". There is no off the shelf contoured lateral able to support a 9" deep chest. This can only be achieved with a Custom Lateral. Custom Contoured Laterals will fully conform to his trunk, halting the progression of deformity and promoting good skin integrity along his trunk. The Laterals must be able to **Swingaway** to allow for safe transfers into and out of the wheelchair. Peter is transferred via a Hoyer. Since the Lateral Trunk Supports must be snug to provide full support, they will have to be moved aside to allow for safe transfers into and out of the wheelchair. In addition, a **Pair of Small and a Pair of Large Hip Support Pads with two sets of TRx Removable Adjustable Lateral Hip Mounting Hardware** are recommended to be mounted off the pan. The **Large Hip Support** will be utilized to stabilize his pelvis, encouraging his body remains seated within the center of the seat. Without a Hip Support, John will shift to the side, worsening the existing deformity and creating peak pressure along his seating surface. The **Small Supports** will be placed distally to control the rotational deformity and encourage his lower extremities remain within the seat. Without this, his legs will splay out placing him at risk for injury at his knees during mobility by hitting walls or doorways. Removable Hardware is necessary since these will have to be removed for transfers. Otherwise, he will injure himself during transfer by hitting in the Supports. In addition, they must be Adjustable since he will require custom placement. He cannot utilize a Pad randomly placed, but rather requires a Pad to be placed in a specific location for adequate support and control. If the Hip Supports cannot be removed or adjusted, they cannot be properly utilized by John, negatively impacting his alignment and placing him at a higher risk for impairment in skin integrity injury. **Extra Covers** are recommended since John sweats a lot and will require a cover to utilize when the soiled one is being cleansed. This is necessary for good hygiene.

Justification

John has been living with a devastating injury for many years. He can no longer move, relying on a wheelchair for all his mobility. His current wheelchair is no longer able to meet his needs due to it being damaged beyond repair and weight gain, resulting in impairment in skin integrity with the existing seating system. Providing John with the equipment recommended above will halt the progression of deformity and promote good skin integrity. In addition, functional activities of daily living can be completed including eating and communication. Without the above, John will be dependent on other, will be bed bound, and will develop worsening deformity and skin integrity.

Your consideration of the above recommended equipment is appreciated. Thank you.

Sincerely,