THE SKY IS THE LIMIT WHEN YOU WORK TOGETHER AS A TEAM

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Webster describes teamwork as, "work done by several associates with each doing a part but all subordinating personal prominence to the efficiency of the whole". While the desired outcome of optimizing a seating system and mobility device for a client is the same, each individual in the team has their own area of expertise, which makes the concept of teamwork even more important to reach the desired end result. Whether it is the clinician, provider, manufacturer's representative or the caregiver, each person brings something unique to the table that needs to be taken into account when designing the most appropriate system for a client. This had never been truer prior to me meeting Kevin.

Kevin has a smile that lights up the world and a laugh that is contagious. He also has severe functional and cognitive limitations. Kevin was born with spastic quadriplegic cerebral palsy. He arrived at my clinic in a wheelchair that was delivered to him when he was 15 years old. He is now 22. His muscle tone and range of motion limitations are so severe that he is sitting on top his custom molded seating system instead of in it. He needed a new seating system and wheelchair due to frequent and numerous repairs, growth and lack of postural support in the current seat However, it took the team to educate his mom that his posture needed to be addressed in addition to simply getting a new frame.

We knew immediately that Kevin's severe postural asymmetries would require custom seating. Initially, we thought a custom molded seating system would be recommended to capture the severity of the nonreducible asymmetries with the hope of minimizing further collapse. That was before we got Kevin on the mat (see Figure 1). The mat evaluation led to a whole new slew of limitations that were not visible with him seated in the wheelchair and that is when our wheels started turning and questions arose (see figure 2) How will we ever seat Kevin? What kind of system is best? Can he even tolerate upright? Can another Quickie Iris accommodate his hip flexion limitations while minimizing risk of aspiration during eating due to a very open seat to back angle?

The mat assessment revealed left hip flexion limitations beyond 30 degrees, left abduction to neutral, right hip flexion limited to 45 degrees,

FIGURE 1 Kevin in his current wheelchair.

FIGURE 2 Mat examination.

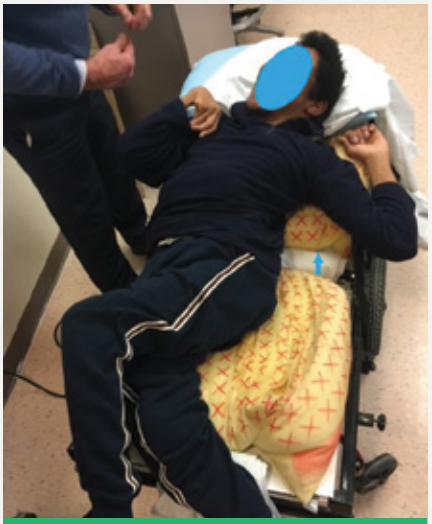

FIGURE 3
Kevin seated in molding system with 6" gap between the seat/back bags.

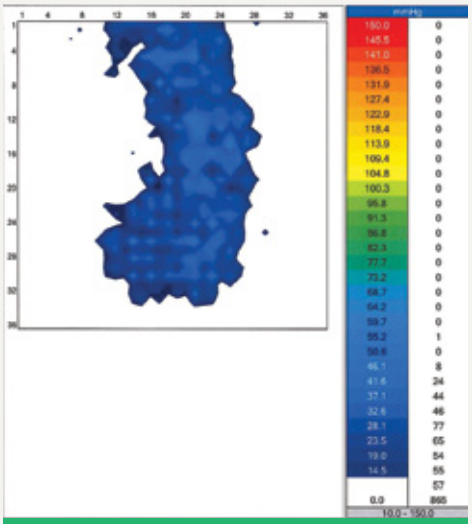

FIGURE 4
Pressure mapping image seated on Roho cushion.

and bilateral severe knee flexion contractures. He sits scissored with a nonreducible rotational kyphoscoliosis, right pelvic obliquity (right high), left anterior pelvic rotation (left forward), and leg length discrepancy (left side longer). He is unable to isolate any muscle movement due to the severity of his tone. Kevin did have a Baclofen pump at one point, however this failed twice, and he developed an infection, so it had to be removed. We decided after this first appointment that a molded seating system would indeed best meet his positioning needs.

Appointment number two was scheduled for a shape capture. What once seemed so obvious, however, was now seeming impossible. The PRM shape capture was unsuccessful. There was a 6-inch gap between the back and seat molding bags at a location that was crucial in providing support and stability for Kevin at the posterior pelvic and lower back (see Figure 3). The DME provider and I looked at each other and wondered what to do.

We went back to the drawing board which fortunately coincided with the 2019 International Seating Symposium. My provider and I strategized and planned our attack in the exhibit hall. We were optimistic that our answer would be there or that at least we would find guidance in our next steps. All our eggs were in the manufacturer's proverbial baskets, hoping that they could shed some light on something we may had missed. Was there another way to seat him outside of a mold? How will we accommodate for his hip range of motion limitations? How will he safely eat without risking aspiration at the required seating angles? And maybe most importantly, how will the world still see his smile and interact with him?

Our first stop was Broda, as Kevin needed a reclined position to accommodate his hip limitations. However, they would not be able to tilt him in a way that would allow him function and socialization. They referred us to PDG Mobility. The Stellar Leap would allow for 30 degrees of anterior tilt. This seemed like the most logical option that would allow for safety with eating and a reclining back. Unfortunately, he would still need posterior tilt-in-space and this would be limited to only 20 degrees.

Our time at the exhibit hall was running out, so we decided to divide and conquer. We hit up Ki Mobility and Invacare and discussed different molded seating options including PRM, PinDot, and Ride Designs. We ultimately met at the Sunrise Medical booth. While all of the product options have their advantages and disadvantages, we looked at Kevin's range of motion and postural specifications and, after discussing our concerns and needs with the Sunrise team, determined we could accomplish what we needed from a functional and safety standpoint using the Quickie Iris.

We were still stumped on the best way to position Kevin. We decided to take a break and enjoy the festivities, allowing food and some sleep to recharge us. That proved a good decision. One of the ISS lectures I attended the following day gave me an idea of how to capture Kevin's back. We knew he needed a mold for his back since there are no prefabricated backs that would come close to matching his contours for pressure distribution and support. I was still unclear what to do with the seat, but thankfully I was not figuring this out on my own - my provider had come up with a solution. We had accomplished what we had wanted from ISS.

Kevin was scheduled for a third time. We borrowed a standard recliner wheelchair and placed a High Profile Roho cushion on the seat and a Ride Designs molding bag on the back. We set the seat-to-back angle to accommodate his hip flexion limitation, adjusted the Roho cushion pressure, and proceeded to mold him. Once we felt we captured his back adequately, we also pressure mapped his seated surface. His bony prominences are problematic as he weighs only 95 pounds, and we wanted to ensure we were not putting him at a higher pressure risk with our new solution (see Figure 4). His pressure map

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FIGURE 5 Delivery day!

was unconventional in that his support base is narrow, however it was good in terms of pressure distribution and pressure relief.

Fast forward to Nov. 14, 2019, — delivery day. It had now been a while since we had seen Kevin, and I was hoping that our hard work paid off. I was nervous that Kevin's molded seating system would turn out how we hoped it would. Kevin arrived with his mother in typical Kevin spirit and in the nick of time. His mother told us that his current foot box was no longer attached to the foot plates and his posture was really deteriorating within his present seating system. We transferred him into his new wheelchair and seating system and, before he was even adjusted, a significant improvement was observed. The Roho cushion was set using a Smart Check device, ensuring no subjectivity in measuring the air pressure which was imperative due to his narrow support base and bony prominences. Adjustments were then made to the back and a long discussion was held with the DME provider to ensure we captured his lower extremities using the recommended components. Even without his foot box and custom soft knee abductor, his positioning has been significantly improved (see Figure 5). Final delivery will take place in his home by the DME provider based on foot box modifications discussed during delivery and first fitting.

I have been fortunate enough to be part of a seating and mobility team for the past eight years. It gives me the opportunity to problem solve and think outside the box for clients like Kevin to meet their unique needs. This would not have been a successful outcome without the team including, but not limited to, the DME provider, the rehab technician, multiple manufacturer's representatives, his mother, and myself, the physical therapist. Too many point guards will not get you the points down low, which is why so many team members are crucial for a big win. Experience may guide you in one direction, but that may not always be the right road to take. Being open to reaching out to the other team members and the seating and mobility community can make a very challenging situation most pleasant. Having been a team sport player my whole life, never did I think that the need for teamwork would carry over into my professional career. We are all after the same "win" and now take others under our wings. Now onto the next client, because delivery day results have opened the door to a solution for another challenging scenario.

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REFERENCES

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Jillian Cacopardo, MPT, ATP/SMS, is the clinical program coordinator for Wheelchair Assessment Services, a provider of complex medical care and rehabilitative services located in Wallingford, Connecticut. She worked as a physical therapist specializing in inpatient rehabilitation prior to focusing on seating and wheeled mobility. She received her Bachelor of Health Science and her master's degree in physical therapy from Quinnipiac University. She lives with her family in Portland, Connecticut.