

Service user background

- ▶ 12 years old.
- ▶ Diagnosis: Cerebral Palsy, Epilepsy, Hypoxic Ischemic Encephalopathy, Registered Blind, West Syndrome.
- ▶ Recently started spending weekdays at residential setting and splits time between here and family home.
- ▶ Attends Specialist School.
- ▶ Community and school-based therapists involved in his care.
- ▶ Immobile, requires assistance with all activities, hoist transfers.

Current equipment

- ▶ Discovery manual transit wheelbase.
- ▶ Virtus seating system with Type G Headrest, 2-point body point pelvic belt and RMS chest harness. On issue since February 2021.

Reason for Referral

- ▶ Referral from physiotherapist due to concerns that optimal posture is not being maintained over time, primarily head falling forwards and trunk leaning over side of lateral.
- ▶ Concerns from carers that the seating is not tolerated for long (20 minutes max), they suspect that it is not very comfortable.

Assessment January 2024

- ▶ Change in presentation, no longer extending at hips with increased tone.
- ▶ Low tone.
- ▶ Reduced head control, further exacerbated by limitations of head position due to concern over aspiration on saliva.
- ▶ Family and carers opting to encourage head slightly forwards resulting in head then falling forwards.
- ▶ No independent sitting balance.
- ▶ Posterior pelvic tilt, mostly correctable.
- ▶ Significant kyphosis, flexible.
- ▶ Very heavy to correct pelvic and trunk deviations.
- ▶ Confusion by multiple care providers regarding set up of seating as previously seat cushion has been found to be fitted back to front.



Analysis/considerations

- ▶ At appointments, a good position can be obtained in the current seating, however this is not being maintained when in use at home and in school.
- ▶ Comfort is not achieved in current seating and tolerance of the seating is very low.
- ▶ Preference by family to keep head in very slightly forwards position is extremely difficult to maintain.
- ▶ Complex headrest with facial pads ruled out due to risks associated with seizures.
- ▶ Alternative headrests such as RMS rollercoaster headrest trialled and although initially successful, head continued to fall forwards. Others were ruled out due to seizures and/or movement of head.
- ▶ Community physiotherapist requested moulded seating; this referral was not accepted by REU.
- ▶ Due to very heavy lean, increased support to lateral trunk with maximal surface area contact would be advantageous and may also help head position and stability.
- ▶ V-Trak backrest was potentially considered to address this need as it would potentially offer increased trunk support and strong posterior pelvic block.
- ▶ V-Trak backrest is also segmented therefore middle segment can be adjusted to support lumbar lordosis and encourage trunk extension.

Plan

- ▶ Out of Range request to trial V-Trak was made and approved via MDT meeting.

Learning and reflections...

- ▶ Increased contact with trunk improved posture, reduced risk of fixed deformity, improved position and comfort enabling increased access to functional tasks and community.
- ▶ Adjustable backrest has enabled growth to be accommodated as required.
- ▶ Mounting of the headrest and shoulder harness being transferred to the frame of the wheelchair reduced forces going through the backrest and therefore reduced likelihood of damage/repair need.
- ▶ Having stock of Rea wheelchair and accessories and flexibility from backrest supplier enabled same day provision, facilitation of this approach would have many benefits to service users and service efficiency.
- ▶ Education of carers has helped positioning, particularly to encourage use of tilt and ceasing pushing head forwards with a pillow but education an ongoing and long-term need.
- ▶ Managing expectations of what is achievable is crucial, building trust helps this!
- ▶ A multi-professional approach is optimal for the service user.

Trial

- ▶ V-Trak backrest fitted to Rea transit base.
- ▶ RMS seat cushion working well therefore transferred across.
- ▶ Achieved increased lateral trunk support, to reduce leaning.
- ▶ Achieved effective posterior pelvic block and enhanced support of lumbar region, encouraging extension of trunk.
- ▶ Type G Headrest transferred across and continued to offer support posteriorly and laterally.
- ▶ A referral to be made to Orthotics to request a bespoke collar that can be used as required (e.g. in transport or over uneven terrain) as the hensing collar is too low.
- ▶ Increased support to trunk had positive impact on head position and the slightly forwards position was achieved and maintained.
- ▶ Education to family and carers on importance of not pushing head too far forwards and utilising tilt in space feature to help maintain position against gravity.
- ▶ V-Trak backrest does not require any adjustment therefore will be easy for all care providers to use consistently.
- ▶ The RMS contoured cushion continued to provide good positioning support for pelvis.
- ▶ Extremely successful trial. Added body point 2-point pelvic belt and body point shoulder harness. Able to issue the wheelchair, V-Trak backrest and accessories on the same day.

Wheelchair positioning guidelines

Ensure wheelchair is tilted when transferring into the seating, this helps pelvis reach the rear of the seat.



Head should be upright and central, within the support of the headrest. Tilt can be used to support this position, particularly when fatigued. Collar to be used as required.

Trunk should look central and symmetrical. Shoulder harness should be adjusted to a firm fit and avoiding PEG site.

Ensure pelvis is level and positioned at the back of the seat.

Belt should be firmly fitting to help keep pelvis in position.

Feet should be well supported by the footplates.



Follow up

- ▶ Positioning guidelines were attached to back of chair to provide a guide to all carers when helping position in the wheelchair.
- ▶ Mum is designated link person for headrest and the headrest risk assessment was completed and shared with mum.
- ▶ Follow up call with mum and residential home indicates that the seating was working well, tolerance improved.
- ▶ 12-month review listed.

Longer term follow up (18 months)

- ▶ Backrest has been adjusted three times to accommodate growth.
- ▶ Repair to backrest required, moving headrest and shoulder harness mount off backrest resolved this.
- ▶ Head position not maintained. Orthotics referral unsuccessful, alternating hensing and headmaster issued by PMS.
- ▶ Changing presentation of intermittent increased tone has led to multiple appointments with clinicians and repair engineers.
- ▶ Reviewed jointly with REU, mould taken for headrest, with the aim to provide increased support and improve head position.

