Your World, Your Way: Environmental Control Solutions for Individuals with Spinal Cord Injury and Other Neurological Conditions

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**INTRODUCTION AND PURPOSE**

Traditional Environmental Control Units (ECUs) are designed for individuals with physical disabilities to control their home environment through a single unit. Environmental Control Systems (ECSs) are designed for the mass market as systems that integrate multiple smart home accessories for home automation. Both play an integral role in increasing independence for individuals with spinal cord injury (SCI) and neurological conditions. The VA frequently recommends and orders ECUs and ECSs for their clients. The purpose of this project was to provide the VA Puget Sound SCI Unit with a comprehensive resource for clinicians to choose and implement ECUs and ECSs.

**ECU/ECS RESOURCE DEVELOPMENT**

- The resource is designed to guide clinicians with any level of experience in recommending an ECU/ECS solution.
- How to use Your World, Your Way Manual:
  1. Complete the initial ECU/ECS Client Questionnaire to identify the client’s priorities, level of function, and activation options.
  2. Input client information on the spreadsheet to find best matches.
  3. See Information Sheets and Schematics for further details.
  4. Select, order, and install the ECU/ECS.
  5. Complete the follow-up ECU/ECS Questionnaire to measure the client’s satisfaction and make adjustments if needed.
- Additional resources included in the manual: a case study, instructions and templates for updates, a glossary of terms, and a resources page.

**LITERATURE REVIEW AND NEEDS ASSESSMENT FINDINGS**

- Though research on environmental control options for the SCI population is limited, findings suggest ECU users have improvements in these areas: communication, safety, security and health, recreation, household appliance use, employment, time spent alone, and independence from caregivers.\(^1,2\)
- Specific needs vary widely based on client’s functional ability and preferences with some users requiring traditional ECU solutions and other users desiring more modular ECS solutions that are universally designed.
- ECSs are becoming increasingly popular compared to traditional ECUs.
- An editable, comprehensive, organized, and easy-to-use resource is needed to aid both new and experienced clinicians in identifying the most appropriate ECU/ECS solutions for their clients.
- It is important to demonstrate the potential benefit of ECSs to clients, clinicians, and payers since ECSs are more affordable, customizable, and culturally acceptable compared with traditional ECUs.

**METHODS**

- Meetings with Community Mentors
- Meetings with Vendors
- Literature Review
- Creation of the Resource
- Interactive Spreadsheet
- Feedback Sessions
- Final Resource

**EVALUATION**

**FEEDBACK FROM OT STUDENTS**

- All of the students agreed that the resource provided a good array of ECU/ECS options and that it explained how each is used and set up.

**FEEDBACK FROM CLINICIANS**

- Clinicians provided suggestions to make the resource easier to navigate. On average, clinicians were knowledgeable about fewer than two ECUs, which demonstrated the importance of the resource for clinical practice.

Positive feedback confirmed the value of the resource:
- “(The resource) is a great tool to have, especially because I don’t have the tech know-how or time to investigate what is on the market.”
- Of the 15 clinicians and OT students who completed the follow-up survey, 100% said they would use the resource in their clinical practice.

**DISCUSSION AND NEXT STEPS**

Environmental control technology is a fast-moving target without a one-size-fits-all approach. The resource created will help clinicians identify family-centered environmental control solutions for clients with SCI and neurological conditions. This could increase early adoption, reduce caregiver burden and unnecessary home automation costs, and increase awareness of the value of ECU/ECS to both the VA Health Care System and public at large.

Potential Next Steps:
- Disseminate the resource to VA SCI units outside of the Puget Sound.
- Create a sustainable system for future manual and spreadsheet updates.
- Foster new UW MOT assistive technology projects with the VA.
- Promote the resource to vendors, payers, online media and healthcare publications and organizations.

**REFERENCES**