Complex Rehabilitation Technology Policy Investigation

M. Betz[1], T. Beauregard[2], A. Stojkov[2], R. Schein[1], C. Digiovine[2,3]

[1]University of Pittsburgh, Department of Rehabilitation Science and Technology [2]The Ohio State University, School of Health and Rehabilitation Sciences [3]The Ohio State University Wexner Medical Center, Assistive Technology Center

BACKGROUND

Service delivery of complex rehabilitation technology (CRT) is an eight-step process outlined in the RESNA Wheelchair Service Provision Guide, highlighting steps from referral and assessment by clinicians and providers to delivery of the wheeled mobility device (WMD) (Arledge et al., 2011). A scoping review performed by an interdisciplinary team from the University of Pittsburgh, The Ohio State University, and University of Michigan investigated CRT service delivery practices, resulting in a collection of peer-reviewed articles from a range of countries, clinical environments, and funding sources (Betz et al., 2021). This scoping review identified barriers and facilitators to past and current service delivery practices and identified common themes in the literature, of which "policy" was a central result. An in-depth investigation into policies that regulate the provision of wheeled mobility devices is needed to supplement the results of the scoping review.

The policies that regulate wheeled mobility device provision vary in interpretation and implementation across clinical settings and payor sources. In the United States, the Center for Medicare and Medicaid Services (CMS) is the primary driver behind wheeled mobility device policy. Private insurance companies often use CMS guidelines to create their own mobility device provision policies. Alternatively, the Veteran's Health Administration (VHA) is a unique system which acts as both the provider and the payor of assistive technologies. The policy documents for each of these entities are examined.

The goal of this investigation is to examine policy language, identify commonalities and differences between policies, and extract relevant themes. This on-going investigation will be used to support efforts by the Disability and Rehabilitation Research Projects (DRRP) Program: Research on Healthcare Policy and Disability to create and implement a novel CRT service delivery policy that promotes value-based care, improved health outcomes, and satisfaction for wheeled mobility device users.

METHODS

The team searched through the results of the scoping review and selected articles with the themes of policy, Medicare, or Medicaid (Betz et al., 2021). A full-text review and data extraction for each article was performed to identify relevant information. These data categories include the country or state the article originated in, a population description, the type of mobility devices addressed (i.e., manual wheelchair, power wheelchair, scooter, other), device service and maintenance coverage, device use for "in-the-home" only, and potential themes.

State Medicaid policies were evaluated, including Alaska, California, Colorado, Florida, Georgia, Illinois, Michigan, Ohio, Oregon, Pennsylvania, and Texas. These states were chosen by internal project stakeholders and subject matter experts as a sample of the US. Categories of extracted information included the type of mobility device that's covered, if device service and maintenance are covered, and potential themes.

The team investigated mobility device policy for private insurance companies, including United Healthcare, Blue Cross Blue Shield, Anthem, Cigna, Humana, Kaiser Permanente, Centene and Health Care Service Corporation. The strategies for locating official policy documents included search phrases such as "wheelchair provision policy insurance", "(insurance company) wheelchair coverage policy" and "(insurance company) durable medical equipment (DME) policy". Each private insurance website was individually searched if the documents could not be located with an internet search.

The final category examined was WMD policy for the VHA under the Prosthetics and Sensory Aids Service. The most recent policy documents were investigated including the VHA Directive for Wheeled Mobility Devices, as well as Prosthetic and Rehabilitative Items and Services: A Rule by the Veterans Affairs Department. The team analyzed policy language to identify themes as well as similarities and differences with other US based WMD policies.

RESULTS & DISCUSSION

There were 30 peer-reviewed articles from the initial scoping review that addressed wheeled mobility device policies. Twelve articles were from a range of countries including Australia, Canada, Columbia, Denmark, Kenya, Norway, Philippines, Singapore, South Africa, and the United Kingdom. The remaining 18 articles investigated US

states including Washington, Georgia, New York, and Ohio. These papers addressed a range of information on wheelchair service provision policy that fell into several distinct categories. The first category is articles that addressed the gaps between policy documentation and actual service delivery that negatively impact end-users (Boss & Finlayson, 2006; L. J. Cohen & Perling, 2015; Eggers et al., 2009; Pedersen et al., 2014; Smith et al., 2018; Sneed, 2004; Sund et al., 2013; Toro-Hernández et al., 2019; Visagie et al., 2013). Articles also addressed common challenges with navigating existing funding policies or accessing alternative funding sources (Bamer et al., 2010; Gallagher et al., 2020; Paguinto et al., 2020; Sanderson & Place, 2001; Smith et al., 2018; Sund et al., 2013; White, 1998). In addition, there is a lack of standardized methods for identifying consumer needs and eligibility criteria for acquiring CRT, including the ambiguity in defining "medical necessity" in current policy (Anslow, 1998; Dicianno & Tovey, 2007; Eagles, 1996; Ferguson-Pell et al., 2005; Stanley, 2015; Wolff et al., 2005). The need to operationalize and standardize data collection for assistive devices is needed to support the development of evidence-based coverage policies (L. Cohen et al., 2013; Sheldon & Jacobs, 2007). Options for identifying optimal mobility devices may be limited, impacting consumers' need for highly individualized products (Groah et al., 2014; Margolis, 2021; Pedersen et al., 2014; Stanley, 2015; Williams et al., 2017). Additionally, current policy incentivizes a focus on profit margins ahead of positive patient care (Goodwin et al., 2007; Groah et al., 2014). A significant number of articles describe Medicare's "in-the-home" restriction, which restricts the consumers ability to be active participants in their work, school, and community (Medicare Rights Center, 2005). Alternatively, the VHA does not have a home restriction for device use, thereby promoting community participation for their veterans (Hubbard Winkler et al., 2010). One article that stood out described the Independence Care System in New York, which combined Medicare and Medicaid funding into a fully integrated health insurance plan that showed overall healthcare savings when functional needs are prioritized (Minkel, 2015). A resulting theme is although there are policies and guidelines in place, specific consumer clinical needs cannot always be met. There is a need for policy that is clear and standardized regarding the qualification for and coverage of wheeled mobility devices.

The research team investigated 8 state Medicaid policies for language related to the provision, maintenance, and replacement of wheeled mobility devices. In these policies, manual wheelchairs, power wheelchairs, scooters, seating, and accessories are all addressed (Alaska State Legislator, 2021; Colorado Department of Health Care Policy & Financing, 2022; Florida Agency for Health Care Administration, 2010; Illinois Department of Healthcare and Family Services, 2015; Medi-Cal, 2020; Michigan Department of Health and Human Services, 2022; Oregon Health Plan, 2020; Texas Medicaid, 2022).There are many commonalities and few differences between state Medicaid policies. For example, a similarity throughout Medicaid policy, the same as Medicare, is the definition of medical necessity for a wheeled mobility device. This definition varies slightly state to state, but overall includes assisting an individual to achieve or maintain maximum functional capacity in performing one or more activities of daily living, to protect life and prevent significant illness, injury, or pain, and be consistent with generally accepted professional medical standards. CMS policies use Healthcare Common Procedure Coding system (HCPCS) to classify technology and require a licensed/certified medical professional (LCMP) to prescribe devices. In contrast to the Medicare policy that restricts the use of WMD in the home, Medicaid policies include the community environment in this definition for ADLs.

Similarities and differences among the state Medicaid policies address the prescription process, maintenance and repair process, and the categorization of WMD. All policies require the WMD prescription must come from a physician, nurse practitioner, clinical nurse specialist, or physician's assistant. One of the differences between states is how maintenance and repairs are managed. Most states only cover extensive servicing that is performed by authorized technicians, and not routine maintenance. However, in Florida and Michigan both routine maintenance and major repairs are reimbursed services (Florida Agency for Health Care Administration, 2010; Michigan Department of Health and Human Services, 2022). Replacement of the device is warranted if repairs cost more than 75% the price of a new device, as is the case for most states. Another difference is Colorado Medicaid may cover a secondary device for use in scenarios in which an individual's primary device is inadequate (Colorado Department of Health Care Policy & Financing, 2022). There is variability among states on the rental period before the device is considered purchased, ranging from 10 to 13 months. Some states lump together complex rehabilitation technology with prosthetics and orthotics, making it difficult to ascertain specific applications for wheeled mobility devices (Alaska State Legislator, 2021). Overall, Medicaid policies are very similar with only small differences that are not particularly noteworthy when evaluating US CRT service delivery policy broadly.

For private insurance companies, there is a significant amount lot of overlap with CMS CRT policy. This included definitions of medical necessity, assessment, and prescription by a licensed medical professional, and that backup chairs, Group 4 power wheelchairs, and power seat elevator are not considered medically necessary (Aetna, 2021; Anthem, 2021a, 2021b, 2021c; BlueCross BlueShield of North Carolina, 2021; Centene, 2021; Cigna, 2021; HCSC,

2018; Humana, 2021; Kaiser Permanente Health Plan of Washington, 2021; United Healthcare, 2021). There are small differences between insurances on the coverage of routine maintenance versus extensive repair, typically only extensive repair is reimbursed. Based on the specific plan for a beneficiary, the percentage of the covered item owed by the customer can range from 0-35%(Cigna, 2021). Most of these policies also highlight the "5-year rule", in which a device will not be replaced before five years unless there is a change in the member's physical condition, or the wheelchair is inoperable and cannot be repaired at a cost less than a rental or replacement. There are minor differences between insurance companies' policies on the provision of mobility devices.

VHA policy is different in that the requirements to qualify for a mobility device, receive the appropriate parts and accessories for that device, and receive more than one device are more accessible. The VHA considers quality of life an important factor when determining medical necessity for prescribing for a wheeled mobility device (Department of Veterans Affairs, 2021). This could include the provision of adaptive sports technology, which supports "quality of life opportunities that are uniquely presented by recreation, like personal enjoyment and fulfillment, and socialization with friends, family, and fellow veterans" (Federal Register, 2020). Additionally, there is discussion on the consideration of comfort and convenience when prescribing mobility devices. Unlike other payor sources, the VHA believes comfort and conceive should be an important consideration when comparing multiple devices to identify the optimal one for a veteran. Common themes amongst all US policies are the discussion around the definition and qualification for medical necessity, and the involvement of an experienced LCMP. Comments suggest the VA struggles with the definition of medical necessity and therefore should not be considered when providing prosthetic or rehabilitative items or services (Federal Register, 2020). However, policy clearly states that durable medical equipment is expressly listed as medical services that "promote, preserve, or restore the health of the individual and is in accord with the generally accepted standards of medical practice" (Federal Register, 2020). This policy is important to evaluate as it models an alternative payor system.

CONCLUSION & FUTURE WORK

This investigation identified common policy language, current regulations, and coverage criteria for wheeled mobility devices. Extracted themes include definitions of medical necessity, the use of HCPC coding for CMS and private insurances, and LCMP required to perform assessments in all US policies. Private insurance companies' guidelines are very similar to Medicare, specifically the restriction of device use for in the home. Both Medicaid policy and VHA policy consider community interaction a part of performing ADLs, so WMD are covered for use outside of the home. VHA policy is different in that quality of life and secondary devices for community and social interaction are covered. This broad investigation of policy provides clarity and understanding of current language, and the similarities and differences between payor sources. The information from this review will be used to supplement current and future research projects with the goal of creating and implementing an updated CRT service delivery policy.

ACKNOWLEDGEMENTS

The contents of this publication were developed under a grant from the National Institute on Disability, Independent Living, and Rehabilitation Research (NIDILRR grant number 90DPGE0014-01-00). In addition, the authors would like to recognize Theresa Burner (OSU), Rachel Hibbs (Pitt), and Mark Schmeler (Pitt) for their contributions to this project.

REFERENCES

Aetna. (2021, December 14). *Wheelchairs and Power Operated Vehicles (Scooters)*. Medical Clinical Policy Bulletins.

Alaska State Legislator. (2021). *Article 2 Durable Medical Equipment and Medical Supplies; Related Services*. 32nd Legislator Alaska Admin Code.

Anslow, R. (1998). Electrically Powered Wheelchairs: Prescribing Guidelines. *British Journal of Therapy and Rehabilitation*, *5*(11).

Anthem. (2021a, December 29). *Wheeled Mobility Devices: Manual Wheelchairs-Ultra Lightweight*. Clinical UM Guidelines.

Anthem. (2021b, December 29). *Wheeled Mobility Devices: Wheelchair Accessories*. Clinical UM Guideline.

Anthem. (2021c, December 29). *Wheeled Mobility Devices: Wheelchairs-Powered, Motorized, With or Without Power Seating Systems and Power Operated Vehicles (POVs)*. Clinical UM Guideline.

Arledge, S., Armstrong, W., Babinec, M., Dicianno, B. E., Digiovine, C., Dyson-Hudson, T., & Schmeler, M. (2011). *RESNA Wheelchair Service Provision Guide*.

Bamer, A. M., Connell, F. A., Dudgeon, B. J., & Johnson, K. L. (2010). Frequency of purchase and associated costs of assistive technology for Washington State Medicaid program enrollees with spina bifida by age. *Disability and Health Journal*, *3*(3). https://doi.org/10.1016/j.dhjo.2009.10.009

Betz, M., Galbreath, P., DiGiovine, C., & Schein, R. (2021, July). Complex Rehabilitation Technology Service Delivery: Scoping Review Process & Methodology. *Rehabilitation Engineering and Assistive Technology Society of North America (RESNA)*.

BlueCross BlueShield of North Carolina. (2021, November). *Wheelchairs (Manual and Power Operated)*. Corporate Medical Policy.

Boss, T. M., & Finlayson, M. (2006). Responses to the Acquisition and Use of Power Mobility by Individuals Who Have Multiple Sclerosis and Their Families. *American Journal of Occupational Therapy*, *60*(3). http://AOTA.org/terms

Centene. (2021). *2021 Major Medical Expense Policy*.

Cigna. (2021, May 15). *Wheelchairs/Power Operated Vehicles*. Medical Coverage Policy.

Cohen, L., Greer, N., Berliner, E., & Sprigle, S. (2013). mobilityRERC State of the Science Conference: considerations for developing an evidence base for wheeled mobility and seating service delivery. *Disability and Rehabilitation: Assistive Technology*, *8*(6). https://doi.org/10.3109/17483107.2013.823577

Cohen, L. J., & Perling, R. (2015). Barriers to Mobility Device Access. *Topics in Geriatric Rehabilitation*, *31*(1). https://doi.org/10.1097/TGR.0000000000000047

Colorado Department of Health Care Policy & Financing. (2022). *Durable Medical Equipment, Prosthetics, Orthotics, and Supplies (DMEPOS)*.

Department of Veterans Affairs. (2021, December 13). *WHEELED MOBILITY DEVICES*. VHA DIRECTIVE 1173.06.

Dicianno, B. E., & Tovey, E. (2007). Power Mobility Device Provision: Understanding Medicare Guidelines and Advocating for Clients. *Archives of Physical Medicine and Rehabilitation*, *88*(6). https://doi.org/10.1016/j.apmr.2007.03.024

Eagles, C. P. (1996). Technology and Disability ELSEVIER A comparison of state Medicaid policies regarding the purchase process, rental, and repair of wheelchairs. In *Technology and Disability* (Vol. 5).

Eggers, S. L., Myaskovsky, L., Burkitt, K. H., Tolerico, M., Switzer, G. E., Fine, M. J., & Boninger, M. L. (2009). A Preliminary Model of Wheelchair Service Delivery. *Archives of Physical Medicine and Rehabilitation*, *90*(6). https://doi.org/10.1016/j.apmr.2008.12.007

Federal Register. (2020, December 28). *Prosthetic and Rehabilitative Items and Services: A Rule by the Veterans Affairs Department* .

Ferguson-Pell, M., Nicholson, G., Bain, D., Call, E., Grady, J., & deVries, J. (2005). The role of wheelchair seating standards in determining clinical practices and funding policy. *Assistive Technology*, *17*(1), 1–6.

Florida Agency for Health Care Administration. (2010, July). *DURABLE MEDICAL EQUIPMENT AND MEDICAL SUPPLY SERVICES COVERAGE AND LIMITATIONS HANDBOOK*. Florida Medicaid.

Gallagher, A., Cleary, G., Clifford, A., McKee, J., O'Farrell, K., & Gowran, R. J. (2020). "Unknown world of wheelchairs" A mixed methods study exploring experiences of wheelchair and seating assistive technology provision for people with spinal cord injury in an Irish context. *Disability and Rehabilitation*. https://doi.org/10.1080/09638288.2020.1814879

Goodwin, J. S., Nguyen-Oghalai, T. U., Kuo, Y.-F., & Ottenbacher, K. J. (2007). Epidemiology of Medicare Abuse: The Example of Power Wheelchairs. *Journal of the American Geriatrics Society*, *55*(2). https://doi.org/10.1111/j.1532-5415.2007.01063.x

Groah, S. L., Ljungberg, I., Lichy, A., Oyster, M., & Boninger, M. L. (2014). Disparities in Wheelchair Procurement by Payer Among People With Spinal Cord Injury. *PM&R*, *6*(5). https://doi.org/10.1016/j.pmrj.2013.11.004

HCSC. (2018, July 15). *Wheelchairs and Accessories*. Medical Policy.

Hubbard Winkler, S. L., Cowper Ripley, D. C., Wu, S., Reker, D. M., Vogel, B., Fitzgerald, S. G., Mann, W. C., & Hoenig, H. (2010). Demographic and Clinical Variation in Veterans Health Administration Provision of Assistive Technology Devices to Veterans Poststroke. *Archives of Physical Medicine and Rehabilitation*, *91*(3). https://doi.org/10.1016/j.apmr.2009.10.028

Humana. (2021, June 23). *Mobility Assistive Devices (Wheelchairs)*. Medical Coverage Policy.

Illinois Department of Healthcare and Family Services. (2015). *Chapter M-200 Policy and Procedures For Medical Equipment And Supplies*. Handbook for Providers of Medical Equipment and Supplies.

Kaiser Permanente Health Plan of Washington. (2021, September 29). *Mobility Assistive Devices*. Clinical Review Criteria.

Margolis, S. (2021). *Access denied: Consequences of federal policy on seating and wheeled mobility*.

Medi-Cal. (2020). *Durable Medical Equipment (DME): An Overview*. State of California.
Medicare Rights Center. (2005). *Forcing Isolation: Medicare's "In the Home" Coverage Standard for Wheelchairs*.
Michigan Department of Health and Human Services. (2022). *MEDICAID PROVIDER MANUAL OVERVIEW*.
Minkel, J. L. (2015). Integration of Complex Rehabilitation Technology (CRT) into Long-term Care Supports. *Topics in Geriatric Rehabilitation*, *31*(1). https://doi.org/10.1097/TGR.0000000000000044
Oregon Health Plan. (2020). *Durable Medical Equipment, Prosthetics, Orthotics and Supplies - Policies, Rules and Guidelines*.
Paguinto, S.-G., Kasparian, N. A., Bray, P., & Farrar, M. (2020). Multidisciplinary perspectives and practices of wheelchair prescription for children with neuromuscular conditions. *Disability and Rehabilitation: Assistive Technology*. https://doi.org/10.1080/17483107.2020.1839793
Pedersen, J. P., Harmon, D., & Kirschner, K. L. (2014). Is an Appropriate Wheelchair Becoming out of Reach? *PM&R*, *6*(7). https://doi.org/10.1016/j.pmrj.2014.06.001
Sanderson, D., & Place, M. (2001). Evaluation of the powered wheelchair and voucher schemes . *British Journal of Therapy and Rehabilitation*, *8*(2), 46–51.
Sheldon, S., & Jacobs, N. A. (2007). ISPO consensus conference on wheelchairs for developing countries. *Prosthetics & Orthotics International*, *31*(2). https://doi.org/10.1080/03093640701419744
Smith, E. M., Roberts, L., McColl, M. A., Martin Ginis, K. A., & Miller, W. C. (2018). National evaluation of policies governing funding for wheelchairs and scooters in Canada. *Canadian Journal of Occupational Therapy*, *85*(1). https://doi.org/10.1177/0008417417719723
Sneed, R. C. (2004). Policy Versus Practice: Comparison of Prescribing Therapy and Durable Medical Equipment in Medical and Educational Settings. *PEDIATRICS*, *114*(5). https://doi.org/10.1542/peds.2004-1063
Stanley, R. J. (2015). Medicare and Complex Rehabilitation Technology. *Topics in Geriatric Rehabilitation*, *31*(1). https://doi.org/10.1097/TGR.0000000000000045
Sund, T., Iwarsson, S., Andersen, M. C., & Brandt, Å. (2013). Documentation of and satisfaction with the service delivery process of electric powered scooters among adult users in different national contexts. *Disability and Rehabilitation: Assistive Technology*, *8*(2). https://doi.org/10.3109/17483107.2012.699584
Texas Medicaid. (2022, January). *DURABLE MEDICAL EQUIPMENT, MEDICAL SUPPLIES, AND NUTRITIONAL PRODUCTS*.
Toro-Hernández, M. L., Kankipati, P., Goldberg, M., Contepomi, S., Tsukimoto, D. R., & Bray, N. (2019). Appropriate Assistive Technology for Developing Countries. *Physical Medicine and Rehabilitation Clinics of North America*, *30*(4). https://doi.org/10.1016/j.pmr.2019.07.008
United Healthcare. (2021, April 14). *Mobility Devices (Non-Ambulatory) and Accessories*. United Healthcare Medicare Advantage Policy Guideline.
Visagie, S., Scheffler, E., & Schneider, M. (2013). Policy implementation in wheelchair service delivery in a rural South African setting. *African Journal of Disability*, *2*(1). https://doi.org/10.4102/ajod.v2i1.63
White, E. (1998). Effectiveness in Wheelchair Service Provision. *British Journal of Occupational Therapy*, *61*(7).
Williams, E., Hurwitz, E., Obaga, I., Onguti, B., Rivera, A., Sy, T. R. L., Kirby, R. L., Noon, J., Tanuku, D., Gichangi, A., & Bazant, E. (2017). Perspectives of basic wheelchair users on improving their access to wheelchair services in Kenya and Philippines: a qualitative study. *BMC International Health and Human Rights*, *17*(1). https://doi.org/10.1186/s12914-017-0130-6
Wolff, J. L., Agree, E. M., & Kasper, J. D. (2005). Wheelchairs, Walkers, And Canes: What Does Medicare Pay For, And Who Benefits? *Health Affairs*, *24*(4). https://doi.org/10.1377/hlthaff.24.4.1140