

Health Services Research and Occupational Therapy: Ensuring Quality and Cost-Effectiveness

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Health services research focuses on access, quality, and cost-effectiveness of care. As a result of increasing emphasis on value-based reimbursement models, conducting health services research to demonstrate the value of occupational therapy is timely. This special issue serves to highlight health services research relevant to occupational therapy practice. Articles included in this special issue describe (1) clients' access to and use of occupational therapy, (2) the effects of occupational therapy on important quality-of-care indicators and client outcomes, and (3) the value of occupational therapy services through the lens of cost-effectiveness. This special issue illustrates the state of health services research in the field of occupational therapy and reveals key insights to advance occupational therapy practice using health services research.

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Hhealth services research is an interdisciplinary field that examines how people get access to health care, how much care costs, and what happens as a result of this care (Lohr & Steinwachs, 2002). The central focus of health services research is to identify the most effective ways to organize and deliver high-quality care to maximize health outcomes. In the past decade, value-based care initiatives such as the Hospital Readmissions Reduction Program (HRRP; Centers for Medicare & Medicaid Services [CMS], 2021b) and the Bundled Payments for Care Improvement initiative (CMS,

2021a) have continued shifting the focus from volume-based to value-based care. As such, it is critical that occupational therapy practitioners and researchers align with value-based care initiatives to advocate for their professional role and value in health care settings. Health services research is one powerful approach to demonstrating the value that occupational therapy practitioners bring to client care.

This special issue focuses on the intersection of occupational therapy and health services research. Included articles provide valuable information about factors affecting

access to occupational therapy, quality and outcomes as a result of occupational therapy services, and considerations for the cost-effectiveness of occupational therapy. This special issue also highlights the state of the science using health services research to provide a road map for advancing occupational therapy research and practice in this field.

Access to and Use of Occupational Therapy

To benefit from occupational therapy, clients must first be able to access services. The growing

evidence base on access to rehabilitation suggests that disparities exist across multiple sociodemographic characteristics (Jaffe & Jimenez, 2015). Two articles in this special issue focus on the utilization of occupational therapy services among specific populations to advance knowledge in this area.

Benevides et al. (2022) explored utilization of occupational therapy services among children and adults covered by Medicaid who are on the autism spectrum, have intellectual disability, or both. Their study found lower utilization of occupational therapy services among adolescents and adults compared with younger children and points to potential disparities in access to care by age, race and ethnicity, sex, and urbanicity. Kinney, Graham, et al. (2022) examined whether utilization of occupational therapy services in five acute care hospitals in a regional health system was moderated by sociodemographic characteristics. They found that clients with lower activities of daily living (ADL) performance are more likely to receive occupational therapy services, but disparities based on race and ethnicity, insurance type, and age were observed even after accounting for ADL performance.

Despite using different data sources, examining different practice settings, and studying distinct populations, both studies found disparities in occupational therapy utilization as a function of client race, ethnicity, and age, highlighting that these disparities in access to care are particularly salient. Opportunities for future research in this area include developing and evaluating initiatives to minimize known disparities in access to care, examining less frequently studied disparities (e.g., disability status, gender identity) and intersectionality, and studying more nuanced ways of quantifying access to care (e.g., time to care receipt, amount of care).

Another study in this special issue relevant to access to care addresses opportunities to increase occupational therapy's role in

primary care. Rouch et al. (2022) explored occupational therapists' experiences practicing in primary care to make recommendations for occupational therapy's role in this setting. Results underscore the need to gain buy-in from the inter-professional team, and they add to the calls advocating for the profession's unique contributions to primary care (American Occupational Therapy Association, 2020b; Halle et al., 2018; Pape & Muir, 2019; Winship et al., 2019). The authors conclude that a greater presence of occupational therapy practitioners in primary care would increase access to occupational therapy services in the community.

Quality of Occupational Therapy

Occupational therapy practitioners commonly define outcomes as the change in client functional status from pre- to posttreatment, which is one important aspect of demonstrating quality of care. One systematic review included in this special issue (Pisegna et al., 2022) focused on the extent to which occupational therapy led to reductions in clients' depressive and anxiety symptoms. Pisegna et al. found limited, moderate-quality evidence that occupational therapy interventions reduced depression and anxiety symptoms in the physical disability inpatient rehabilitation setting.

It is critical, however, that practitioners consider quality-of-care outcomes used by payers to determine reimbursement. For example, quality outcomes defined by CMS include client outcomes from treatment in addition to other quality-of-care indicators such as 30-day hospital readmission, falls, and successful discharge to the community. Therefore, it is imperative to connect occupational therapy outcomes and care with CMS quality measures to promote the value of occupational therapy services.

Five review articles in this special issue focus on associations between occupational therapy care and outcomes that are part of CMS

quality measures. Lockwood and Porter (2022) conducted a meta-analysis and found low-quality evidence that occupational therapy reduced 1-mo readmission rates among hospitalized adult clients compared with standard care. Two review articles (Feldhacker et al., 2022; Molitor et al., 2022) describe how occupational therapy interventions can improve client outcomes in areas aligned with the Improving Medicare Post-Acute Care Transformation (IMPACT) Act of 2014 (Pub. L. 113-185). These reviews found mixed evidence for readmission prevention across chronic conditions (Molitor et al., 2022) and low strength of evidence to support occupational therapy interventions to reduce pressure ulcers or promote skin integrity (Feldhacker et al., 2022).

Shaw et al.'s (2022) review examined the extent to which occupational therapy interventions reduce unplanned hospital readmission among clients admitted to skilled nursing facilities and found that although many interventions were aligned with domains of occupational therapy practice, evidence focused on evaluating occupation-centered intervention was notably lacking. Hunter and Rhodus's (2022) review found strong evidence supporting inpatient and home health exercise programs to decrease the risk of falls and moderate evidence supporting evidence-based pressure ulcer programs, multidisciplinary rehabilitation and swallow strengthening exercises for dysphagia, and manualized depression interventions.

This special issue also includes three articles consisting of secondary data analyses to examine relationships between occupational therapy care and quality outcomes. Kubiak and Sklar (2022) found that clients with spinal cord injury who exercised monthly had fewer hospital readmissions during the first year after discharge from inpatient rehabilitation than those who did not exercise. Malcolm et al. (2022) found that clients who received

occupational therapy services in the neurological critical care unit had a higher likelihood of noncommunity discharge than those who did not receive occupational therapy. [Edelstein et al. \(2022\)](#) found that higher frequency of acute occupational therapy services was linked to lower odds of readmission among clients with HRRP-qualifying diagnoses (i.e., acute myocardial infarction, chronic obstructive pulmonary disease, heart failure, pneumonia, coronary artery bypass graft, and elective total hip or knee arthroplasty).

The results of these analyses reveal the state of the evidence on the use of occupational therapy to improve client outcomes in CMS quality measure areas and highlight opportunities for future research directions. Most studies in this area are reviews that examine the impact of occupational therapy services on quality and client outcomes, indicating that the field of occupational therapy is in the early stages of capitalizing on health services research and highlighting the need to advance research on the impact of occupational therapy on quality measures, particularly those mandated by CMS. To advance the profession in this area, it will be important for educational programs and clinical educators to inform future occupational therapy practitioners about the most updated health care policies relevant to occupational therapy practice (e.g., the IMPACT Act, bundled payment models) and provide resources that occupational therapy practitioners can use to stay current as the reimbursement policy landscape evolves. Alignment of occupational therapy research and practice with quality measures may also be facilitated by embedding CMS quality measures that are relevant to occupational therapy services into future iterations of the *Occupational Therapy Practice Framework: Domain and Process* to enhance occupational therapy practitioners' familiarity with health care policy (see [AOTA, 2020a](#)).

Cost-Effectiveness of Occupational Therapy

Beyond access to and quality of care, another key area of health services research is the cost-effectiveness of care provision. Cost-effectiveness research examines the balance between the costs of providing care and the resultant outcomes, thus addressing the value of care and aiding decision making about resource allocation. Three studies in this special issue discuss the value of occupational therapy services through the lens of cost-effectiveness.

[Kinney, Fields, et al. \(2022\)](#) describe a learning health systems approach to identify and promote high-value occupational therapy across practice settings. The authors offer a road map for how the profession can use the outlined action steps to advocate for developing learning health systems in other practice settings. [Wales et al. \(2022\)](#) performed a systematic review of economic evaluations of occupational therapy services in acute and subacute care. Although some studies included in the review provide preliminary evidence of the value of occupational therapy in these settings, the review also underscores the relative dearth of economic evaluations of occupational therapy services.

[Morrow and Simpson \(2022\)](#) describe cost-effectiveness analysis (CEA) as a method for economic evaluation and provide an example to illustrate the utility of CEA using a hypothetical new intervention for stroke rehabilitation. CEA is growing more common in many areas of health care, and the demand for CEA to help inform decisions about care provision in the United States continues to increase ([Kim & Basu, 2021](#)). The underutilization of CEA in occupational therapy research represents an opportunity to use this approach to study the value of occupational therapy and promote high-value services to key stakeholders. Together, these studies emphasize a clear need for more health services research on the cost-

effectiveness of occupational therapy services to demonstrate the value of occupational therapy to health systems, policymakers, and payers.

Conclusion

This special issue contains a collection of articles focused on occupational therapy care access, quality, and cost-effectiveness. Studies included in this special issue have important implications for occupational therapy practitioners and researchers. For example, occupational therapy practitioners can use these articles to advocate for initiatives to reduce disparities in access to care, inform the selection of evidence-based occupational therapy interventions that yield improvements in CMS quality measures, and focus on the value of services and work to lead initiatives to improve value. The articles contained in this special issue also point to a need for continued health services research to further elucidate different factors influencing access to occupational therapy care and more nuanced indicators of access to occupational therapy care; demonstrate the influence of occupational therapy interventions on quality measures tied to reimbursement; and develop and test cost-effective, high-value models of occupational therapy care delivery. Using health services approaches to inform occupational therapy research and practice is timely, imperative, and crucial. Practitioners and researchers are encouraged to use this special issue as baseline evidence to enhance future occupational therapy practice and health services research. 📖

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References

- American Occupational Therapy Association. (2020a). Occupational therapy practice framework: Domain and process (4th ed.). *American Journal of Occupational Therapy*, 74(Suppl. 2), 7412410010. <https://doi.org/10.5014/ajot.2020.74S2001>
- American Occupational Therapy Association. (2020b). Role of occupational therapy in primary care. *American Journal of Occupational Therapy*, 74(Suppl. 3), 7413410040. <https://doi.org/10.5014/ajot.2020.74S3001>
- Benevides, T. W., Tao, S., Becker, A., Verstreat, K., & Shea, L. (2022). Occupational therapy service delivery among Medicaid-enrolled children and adults on the autism spectrum and with other intellectual disabilities. *American Journal of Occupational Therapy*, 76, 7601180100. <https://doi.org/10.5014/ajot.2022.049202>
- Centers for Medicare & Medicaid Services. (2021a, June 29). *Bundled Payments for Care Improvement (BPCI) initiative: General information*. <http://innovation.cms.gov/initiatives/bundled-payments/>
- Centers for Medicare & Medicaid Services. (2021b, August 6). *Hospital Readmissions Reduction Program (HRRP)*. <https://www.cms.gov/medicare/medicare-fee-for-service-payment/acuteinpatientpps/readmissions-reduction-program.html>
- Edelstein, J., Walker, R., Middleton, A., Reistetter, T., Gary, K. W., & Reynolds, S. (2022). Higher frequency of acute occupational therapy services is associated with reduced hospital readmissions. *American Journal of Occupational Therapy*, 76, 7601180090. <https://doi.org/10.5014/ajot.2022.048678>
- Feldhacker, D. R., Molitor, W. L., Jensen, L., Lohman, H., & Lampe, A. M. (2022). Occupational therapy and the IMPACT Act: Part 2. A systematic review of evidence for functional status, medication reconciliation, and skin integrity interventions. *American Journal of Occupational Therapy*, 76, 7601180010. <https://doi.org/10.5014/ajot.2022.049324>
- Halle, A. D., Mroz, T. M., Fogelberg, D. J., & Leland, N. E. (2018). Occupational therapy and primary care: Updates and trends. *American Journal of Occupational Therapy*, 72, 7203090010. <https://doi.org/10.5014/ajot.2018.723001>
- Hunter, E. G., & Rhodus, E. (2022). Interventions within the scope of occupational therapy to address preventable adverse events in inpatient and home health postacute care settings: A systematic review. *American Journal of Occupational Therapy*, 76, 7601180060. <https://doi.org/10.5014/ajot.2022.047589>
- Improving Medicare Post-Acute Care Transformation (IMPACT) Act of 2014, Pub. L. 113-185, 128 Stat. 1952.
- Jaffe, K. M., & Jimenez, N. (2015). Disparity in rehabilitation: Another inconvenient truth. *Archives of Physical Medicine and Rehabilitation*, 96, 1371-1374. <https://doi.org/10.1016/j.apmr.2015.04.017>
- Kim, D. D., & Basu, A. (2021). How does cost-effectiveness analysis inform health care decisions? *AMA Journal of Ethics*, 23, E639-E647. <https://doi.org/10.1001/amajethics.2021.639>
- Kinney, A. R., Fields, B., Juckett, L., Read, H., Martino, M. N., & Weaver, J. A. (2022). The Issue Is—Learning health systems can promote and sustain high-value occupational therapy. *American Journal of Occupational Therapy*, 76, 7601347030. <https://doi.org/10.5014/ajot.2022.049071>
- Kinney, A. R., Graham, J. E., Bukhari, R., Hoffman, A., & Malcolm, M. P. (2022). Activities of daily living performance and acute care occupational therapy utilization: Moderating factors. *American Journal of Occupational Therapy*, 76, 7601180040. <https://doi.org/10.5014/ajot.2022.049060>
- Kubiak, S., & Sklar, E. (2022). Relationship of exercise and hospital readmission after spinal cord injury: A secondary analysis. *American Journal of Occupational Therapy*, 76, 7601180070. <https://doi.org/10.5014/ajot.2022.047944>
- Lockwood, K. L., & Porter, J. (2022). Effect of hospital-based interventions by occupational therapy practitioners on reducing readmissions: A systematic review with meta-analyses. *American Journal of Occupational Therapy*, 76, 7601180050. <https://doi.org/10.5014/ajot.2022.048959>
- Lohr, K. N., & Steinwachs, D. M. (2002). Health services research: An evolving definition of the field. *Health Services Research*, 37, 15-17. <https://doi.org/10.1111/1475-6773.01020>
- Malcolm, M. P., Kinney, A. R., & Graham, J. E. (2022). Predicting community discharge for occupational therapy recipients in the neurological critical care unit. *American Journal of Occupational Therapy*, 76, 7601345010. <https://doi.org/10.5014/ajot.2022.045450>
- Molitor, W. L., Feldhacker, D. R., Lohman, H., Lampe, A. M., Jensen, L. (2022). Occupational therapy and the IMPACT Act: Part 1. A systematic review of evidence for fall prevention and reduction, community discharge and reintegration, and readmission prevention interventions. *American Journal of Occupational Therapy*, 76, 7601180020. <https://doi.org/10.5014/ajot.2022.049044>
- Morrow, C., & Simpson, K. (2022). Measuring value: Cost-effectiveness analysis for occupational therapy. *American Journal of Occupational Therapy*, 76, 7601347010. <https://doi.org/10.5014/ajot.2022.049068>
- Pape, S. B., & Muir, S. (2019). Primary care occupational therapy: How can we get there? Remaining challenges in patient-centered medical homes. *American Journal of Occupational Therapy*, 73, 7305090010. <https://doi.org/10.5014/ajot.2019.037200>
- Pisegna, J., Anderson, S., & Krok-Schoen, J. L. (2022). Occupational therapy interventions to address depressive and anxiety symptoms in the physical disability inpatient rehabilitation setting: A systematic review. *American Journal of Occupational Therapy*, 76, 7601180110. <https://doi.org/10.5014/ajot.2022.049068>
- Rouch, S. A., Klinedinst, T. C., White, J. S., & Leland, N. E. (2022). Exploring occupational therapists' experiences in U.S. primary care settings: A qualitative study. *American Journal of Occupational Therapy*, 76, 7601180010. <https://doi.org/10.5014/ajot.2022.049001>
- Shaw, A., Cabrejo, P. T., Adamczyk, A., & Mulcahey, M. (2022). Reducing hospital readmissions of older adults pursuing postacute care at skilled nursing facilities: A scoping review. *American Journal of Occupational Therapy*, 76, 7601180010. <https://doi.org/10.5014/ajot.2022.049082>
- Wales, K., Lang, D., Rahja, M., Somerville, L., Laver, K., & Lannin, N. A. (2022). Economic effects of occupational therapy services for adults in acute and subacute care settings: A systematic review. *American Journal of Occupational Therapy*, 76, 7601180080. <https://doi.org/10.5014/ajot.2022.049078>
- Winship, J. M., Ivey, C. K., & Etz, R. S. (2019). Opportunities for occupational therapy on a primary care team. *American Journal of Occupational Therapy*, 73, 7305185010. <https://doi.org/10.5014/ajot.2019.030841>

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