Courage Kenny Research Center
Q3 2025
Allina Health
COURAGE KENNY REHABILITATION INSTITUTE

Understanding Open Notes in Rehabilitation: What Patients and Providers Really Think

In this newsletter:

Since the 2021 Cures Act made medical notes accessible to patients, a significant gap has emerged between what patients with acquired brain injuries want from their rehabilitation notes and what their therapists think they need. Our recent research at Allina Health, conducted in partnership with the University of Minnesota, surveyed 284 patients with acquired brain injury and 740 rehabilitation providers (physical therapists, occupational therapists, and speech-language pathologists) to understand their experiences with "open notes."

The Enthusiasm Gap

The findings reveal a striking divide. An overwhelming 96% of patients with brain injury like having access to their rehabilitation notes, and 80% believe they can easily understand them. Patients told us that open notes help them remember their therapy activities, track their progress, and feel more connected to their care. As one patient shared, "After my brain injury I really struggled with my memory... Having access to my open rehab notes helped me remember what I did and what I was supposed to be doing."

In contrast, rehabilitation providers expressed significant concerns. While patients were enthusiastic, providers worried that notes might confuse (70%), offend (62%), or upset (56%) their patients. Perhaps most telling: 68% of providers reported that documentation is already a huge burden, and 56% said that open notes have made this worse. When asked to rank the purposes of their documentation, providers rated "communicating with my patient" as their *least important* priority—below legal protection, insurance justification, and communicating with other clinicians..

Could AI Help Bridge the Gap?

In the second phase of our study, we explored whether artificial intelligence (AI) might offer solutions. Both patients and providers had limited experience with AI tools, and both groups expressed concerns about accuracy and privacy. However, providers showed more openness to AI-assisted solutions than patients did. Three-quarters of providers said they would trust AI tools developed specifically for rehabilitation, and 61% would use organization-approved AI tools to help with documentation.

The most promising finding? Both groups strongly agreed that having a patient-directed summary section in rehabilitation notes would improve their usefulness. Providers and patients also aligned perfectly on what should go in these summaries: progress toward goals, the goals themselves, therapy activities, and home exercise programs. This suggests a clear path forward—using AI to generate patient-friendly summaries without increasing the documentation burden that providers already find overwhelming.

What's Next: The ReOPEN ACCESS Study?

Building on these survey findings, our team is planning to launch the *Rehabilitation Open Provider Encounter Notes: Assessment of Comprehension and Communication through Electronic Health Records Systems* (ReOPEN ACCESS) study in 2026 to answer the logical next question: *Can AI deliver on this promise?* We're currently conducting focus groups with both patients and providers to dig deeper into the survey responses *(Continued)*

Understanding Open Notes... *Continued*

and better understand their priorities for note summaries.

Our next phase of research will address three complementary issues. First, we'll measure actual comprehension—not just perceived understanding—to identify exactly where communication breakdowns occur and whether patient-directed summaries help people focus on the most important information in their notes. Second, we'll use eye-tracking technology to objectively measure the cognitive effort required to read rehabilitation notes, helping us determine how summaries should be formatted to reduce mental burden. Third, we'll systematically evaluate current AI tools by comparing AI-generated summaries against expert-written ones, with providers rating them on accuracy, completeness, and clinical usefulness. This approach is therefore designed to address the accuracy and safety concerns raised by both patients and providers expressed in our surveys.

Data from this pilot study will inform larger research trials and provide evidence-based guidance for rehabilitation providers considering AI-assisted communication tools. Our ultimate goal is to generate the evidence needed to design and test interventions that can improve rehabilitation outcomes through better patient-provider communication.

The Bigger Picture

These findings highlight an important opportunity to improve patient-provider communication in rehabilitation. Effective engagement with rehabilitation depends on patients understanding their treatment plan, recognizing progress indicators, and following through with home-based interventions. Yet only about half of patients in our survey had actually read their rehabilitation notes, suggesting significant untapped potential for patient engagement.

Katy O'Brien, PhD CCC-SLP

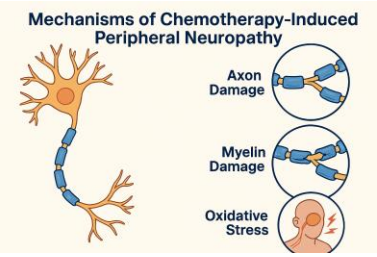
The stakes are high: health literacy is known to impact rehabilitation outcomes after brain injury, and with cognitive-communication challenges common in this population, we need to ensure that open notes truly support rather than complicate the rehabilitation process. By listening to both sides of this conversation and rigorously testing potential solutions, we can work toward documentation practices that serve all audiences: patients, caregivers, providers, and payers alike.

This research was funded by an Allina Health Foundation Research Innovation Grant. For questions about this work or to learn about participation in future studies, please contact Dr. Katy O'Brien at katy.obrien@allina.com.

SENSE Study Update

Laura Gilchrist, PT, PhD

Chemotherapy is a major treatment component for a variety of common cancers. Chemotherapy-induced peripheral neuropathy (CIPN) is one of the major dose limiting side effects of this treatment. Typically, CIPN symptoms include numbness, tingling, pain, and weakness in the feet and hands. Decreased reflexes and neurophysiological changes can also be detected with CIPN. While many adults who receive these neurotoxic agents will develop CIPN, the onset and severity of symptoms can vary widely.



Declines in sensory and motor function, common with neurotoxic agents, can lead to a variety of functional deficits, including an increased fall risk. A recent systematic review found that, based on three studies, individuals treated for cancer who developed CIPN were more likely to fall than those without CIPN. When falls occur, it can lead to increased health care costs, potential delays in treatment, and increased mortality. Early identification of CIPN symptoms and modification of oncologic treatment or rehabilitation intervention may help ameliorate the risk for falls. Who will develop CIPN impacting fall risk is not always clear. Clinicians have struggled to accurately predict which patients will develop severe and persistent CIPN or postural instability, and efficient and convenient screening methods are not readily available for cancer populations receiving neurotoxic treatments. A technology-based solution, such as a smartphone application (app), may be a feasible and cost-effective method for filling this need.

A repeated measures study design was conducted at Courage Kenny Research Institute to address this gap. In a collaborative partnership between College of St. Catherine's and Courage Kenny Rehabilitation Institute, Dr. Laura Gilchrist, PhD PT and a team of Courage Kenny clinician-researchers developed and conducted this study funded by the Allina Health Foundation. This study examined the feasibility of using ecological momentary assessment (mEMA) in a phone-based app to identify CIPN symptoms and progression, falls, and end-user experience with the data collection app.

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SENSE Study Update... *Continued*

Self-reported CIPN symptoms and fall-related data were collected via mEMA, and clinical data were collected at in-person testing sessions. Of the 12 participants, 83.3% completed the mEMA survey 3 or more times in the first 3 weeks of the study and continued to use the app to report symptoms for at least 3 months. One or more symptoms of CIPN were reported by 75% at any point during the study.

One fall without injury and 2 near falls were reported by 3 (25%) individuals in their mEMA surveys during the study period. Of these 3 participants, 2 reported previous falls as well as numbness or pain in their feet or toes prior to the fall/near fall. Results of the study indicated that participants reported that the mEMA survey was easy to use with no concerns about the time required. Screening for early onset of CIPN and balance instability is possible with a phone-based survey, and further study of this screening assessment is recommended.

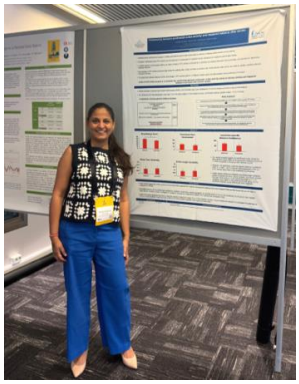
Comprehensive results and discussion were accepted for publication in the journal, Rehabilitation Oncology, Gilchrist et al. (2025). Screening for chemotherapy-induced peripheral neuropathy and instability with a phone-based application: A pilot feasibility study. This article was also chosen for the journal's podcast interviewing the author.

Many thanks to the study team in CK Research, our cancer care collaborators, partners at CKRI sites that allowed us to use their spaces for testing (Mercy & Centennial Lakes), and the Allina Health Foundation for their financial support.

Recent Conference Presentations

Shraddha Srivastava PhD Shares Research in Sweden

Senior Scientific Advisor, Shraddha Srivastava traveled to Stockholm, Sweden for an opportunity to present her work on evaluating prefrontal cortex activity in people with chronic stroke using the Cutting-edge fNIRS (Functional Near-Infrared Spectroscopy) technology at the Congress of the International Society of Biomechanics, Stockholm. This provided her with the unique opportunity to gain an understanding of the current status of research in the field and make valuable personal/professional contacts with scientists from a large variety of disciplines including anatomy, physiology, engineering, orthopedics, rehabilitation medicine etc. Shraddha also received positive feedback on her current research work from international clinical biomechanists in the field. On a personal note, Shraddha had the opportunity to meet with an old colleague from her PhD program who is currently faculty at University of Iceland. As biomechanics plays a major role in the study of all biological systems, from the level of the whole organism down to molecular size scales, this meeting provided a unique career development opportunity for Dr. Srivastava.



Shraddha presenting poster in Stockholm

Recent Conference Presentations (cont.)

Natalie Covington, PhD CCC-SLP Shares Research on the Power of Purpose at KNN Conference

Natalie Covington, PhD CCC-SLP recently presented at the Kern National Network for Flourishing in Health (KNN) Conference. As a national collaborative of medical schools and healthcare systems with a mission "to drive national impact by advancing character, caring and practical wisdom in the profession of medicine," the KNN provided an ideal platform for her talk, "Purpose in Allied Health Rehabilitation: Bi-directional Opportunities for Promoting Flourishing in Patients and Providers."

Her presentation highlighted findings from a feasibility trial focused on helping patients find purpose after brain injury and a focus group study of allied health clinicians. The results suggest a promising bi-directional benefit: not only does the intervention appear to improve patient well-being, but the clinicians who deliver it also reported significant professional and personal benefits. This work underscores the profound impact that purpose-driven rehabilitation can have on both the individuals we serve and on our own clinical practice.

Natalie Covington, PhD CCC-SLP

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Courage Kenny Research Council/Scientific Review Committee Update

The Courage Kenny Research Council Scientific Review Committee congratulates Lori Froehling on her retirement and thanks her for her service to the committee over the years. Lori provided thoughtful review of research projects for many years and shared keen clinical insights with the committee.

With recent changes in CKRI leadership, the following committee roster changes have also occurred:

- Dr. Kristine Spiewak has agreed to become the CK Research Dyad Clinical Partner and to Co-Chair the Research Council.
- Jeannine Voshel, PT, Director of Therapies Ortho/MSK and Lora Anderson, PT, Director of Therapy Services, have both agreed to join the CK Research Council following Lori Froehling's retirement.

Lori Froehling, PT

Kristine Spiewak, MD

Jeannine Voshel, PT

Lora Anderson, PT

Recent Q3 2025 Presentations

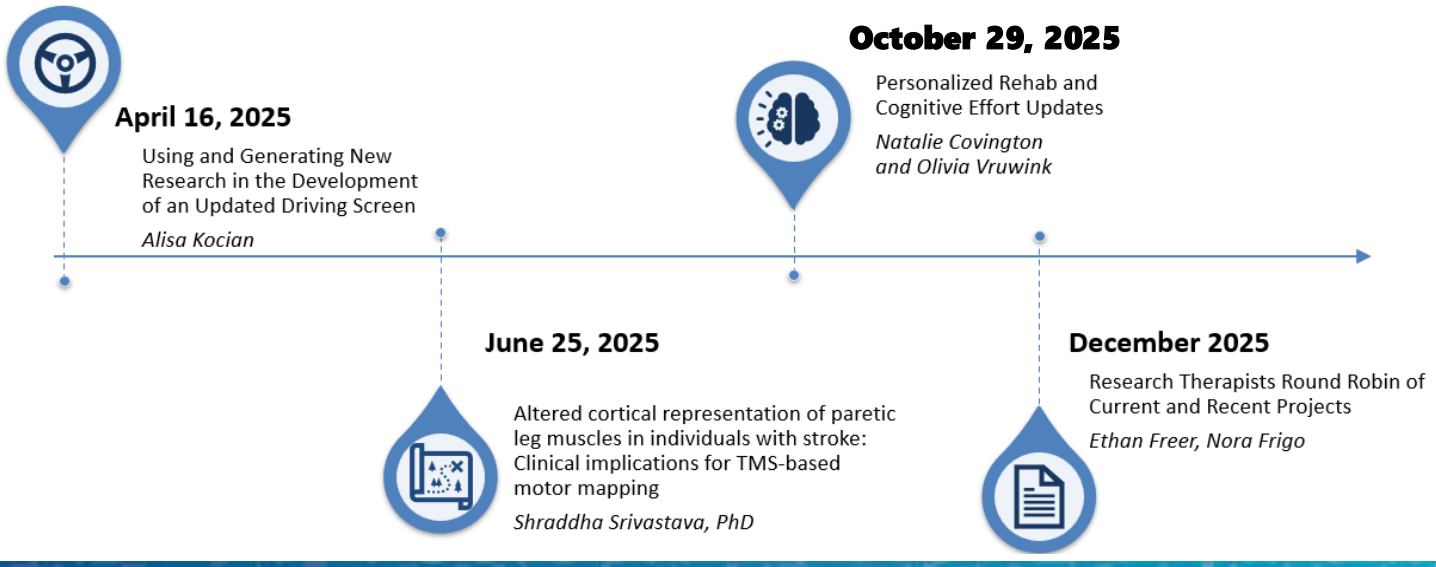
Covington, N. V., & **Vruwink, O.** (2025, September). Purpose in allied health rehabilitation: Bi-directional opportunities for promoting flourishing in patients and providers. Oral presentation at the Kern National Network for Flourishing in Medicine Conference.

Vruwink, O., Smith, L., **Covington, N. V.** (2025, September). "Everybody has purpose": A Qualitative Examination of Perspectives on Purpose in Life from Adults with Moderate to Severe Acquired Brain Injury. [Poster Presentation] Eleanor M. Saffran Conference on Cognitive Neuroscience & Rehabilitation of Communication Disorders, Philadelphia, PA.

Srivastava, S., Cash, J., Bowden, M., & Kautz, S. (2025, July). Relationship between prefrontal cortex activity and impaired balance after stroke. Oral presentation at the International Society of Biomechanics, Sweden.

2025 Research Meets Practice

(Content subject to change)



2025 Publications

Wallace, T. D., Cotner, B., Klyce, D., Walter, A., Hodge, A. T., Gore, R. K., & **O'Brien, K. H.** (in press). Implementing goal attainment scaling as a person-centered measurement tool to direct care and evaluate outcomes in brain injury rehabilitation settings. Archives of Physical Medicine and Rehabilitation.

Kemp, A. M. & **O'Brien, K. H.** (in press). A comparative evaluation of two telehealth neurocognitive assessments for older adults with and without traumatic brain injury. Journal of Head Trauma Rehabilitation.

Covington, N. V., Radomski, M. V., Kocian, A., Castro-Pearson, S., Herrmann, A., **Kath, K**., Lindenfelser, L., Schwalbe, S.A., **Wagener, S. G., Zola, J.** (in press). Purpose renewal in adults with persisting symptoms after concussion: Results of a non-randomized feasibility trial. Journal of Head Trauma Rehabilitation.

Ramachandra, V., Dew, C., Duff, D., **Covington**, N. V., Antony, R., Pakulski, L., . . . Glassman, J. (in press). ChatGPT responses to questions about clinical decision making: A preliminary analysis of accuracy and completeness. *American Journal of Speech-Language Pathology.*

Gilchrist, L., **Kocian, A.**,...**Castro-Pearson, S., Radomski, M.** (in press). Screening for chemotherapy-induced peripheral neuropathy and instability with a phone-based application: A pilot feasibility study. Rehabilitation Oncology.

Domin, M., Liew, S-L., Hordacre, B., Boyd, L.A., Conforto, A. B., Andrushko, J. W., Borich, M. R., Craddock, R. C., Donnelly, M. R., Dula, A. N., Warach, S. J., Kautz, S. K., Tavenner, B. P., Seo, N. J., **Srivastava, S.**, Wong, K.A., Zavaliangos-Petropulu, A., Thompson, P. M., Lotze, M. (2025) Comparison of post-stroke white matter assessment using disconnectome-symptom mapping versus quantitative diffusion MRI. *NeuroImage*. https://doi.org/10.1016/j.neuroimage.2025.121347.

Covington, N. V., Radomski, M. V., Kocian, A., Castro-Pearson, S., Herrmann, A., **Kath, K., Lindenfelser, L., Schwalbe, S.A., Wagener, S. G., Zola, J.** (2025) Purpose renewal in adults with persisting symptoms after concussion: Results of a non-randomized feasibility trial. *Journal of Head Trauma Rehabilitation*.

Wallace, T., Pei, Y., Gartell, R., Kemp A.M., Appleberry, C., & Gore, R.K., and **O'Brien**, K.H. (2025). Exploring person-centered goals in speech-language pathology services for mild traumatic brain injury. *American Journal of Speech-Language Pathology,* 1–11. https://doi.org/10.1044/2025_ajslp-24-00117

Kemp, A. M., **Vruwink**, O., & **O'Brien**, K. H. (2025). Finding a "NEW VOICE to tell my story": Storytelling and wellness as revealed through the Unmasking Brain Injury Project. *Disability and Rehabilitation*. Online ahead of print.

O'Brien, K.H., Messina, A., Pei, Y., Kemp A.M., Gartell, R., Brown, G., Appleberry, C., Gore, R.K., & Wallace, T. (2025). Factors influencing speech-language pathology referral and utilization in mild traumatic brain injury: An exploratory analysis. *American Journal of Speech-Language Pathology*. Online ahead of print.

Kemp, A. M., & **O'Brien**, K. H. (2025). Examining implementation outcomes of a self-regulation strategy for health education: Perspectives of clinicians and older adults with and without traumatic brain injury. *American Journal of Speech-Language Pathology.* Online ahead of print.

Covington, N. V., **Vruwink**, O., & **Radomski, M. V**. (2025). Purpose in life after brain injury: Expanding the focus and impact of interdisciplinary rehabilitation. *American Journal of Speech-Language Pathology.* Online ahead of print.

Covington, N. V., & Duff, M. C. (2025). Hippocampus supports long-term maintenance of language representations: Evidence of impaired collocation knowledge in amnesia. *Cortex*. Online ahead of print.

McCurdy, R., **Covington, N. V.,** & Duff, M. (2025). Naming ability in the chronic phase of moderate-severe traumatic brain injury. *American Journal of Speech-Language Pathology.* Online ahead of print.

Fino, P. C., Antonellis, P., Parrington, L., **Weightman**, M. M., Dibble, L. E., Lester, M. E., Hoppes, C. W., & King, L. A. (2025). Objective turning measures improve diagnostic accuracy and relate to simulated real-world mobility/combat readiness in chronic mild traumatic brain injury. Journal of Neurotrauma. Advance online publication. doi:10.1089/neu.2024.0127

Hoppes, C. W., Garcia de la Huerta, T., Faull, S., **Weightman**, M., Stojak, M., Dibble, L., Pelo, R. M., Fino, P. C., Richard, H., Lester, M., & King, L. A. (2025). Utility of the vestibular/ocular motor screening in military medicine: A systematic review. Military Medicine, 190(5-6), e969–e977. doi:10.1093/milmed/usae494

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CKRC Summer Highlights

Clockwise (L-R), row 1: CKRC and Care Delivery research teams at happy hour event; Katy O'Brien spending time in North Carolina; CKRC team at happy hour event; row 2: Ned Tervola overlooking Prague, CZ with his wife; CKRC team paddleboarding; CKRC team paddle boarding; Natalie Covington spending time with her family.

Courage Kenny Research Center Contacts

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Shraddha Srivastava, PhD – Senior Scientific Advisor

Courage Kenny Research Center

Our mission is to conduct innovative, relevant clinical research that advances the field and improves rehabilitative care provided to people served by Courage Kenny Rehabilitation Institute and Allina Health.

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