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The American Occupational Therapy Association
September 10, 2018



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Editor's Note

Professional Fixer Uppers

This issue's cover story (p. 8) provides an extensive overview of the key role occupational therapy can play in a crucial societal trend—aging in place. Following up on previous coverage in *OT Practice* of the Baltimore-based Community Aging in Place, Advancing Better Living for Elders (CAPABLE) program, authors Marianne Granbom, Allyson Evelyn-Gustave, Laura N. Gitlin, and Sarah Szanton describe the process and outcomes for helping low-resourced older adults with functional difficulties receive environmental modifications for a variety of goals, including showering safely, preparing meals, improving safe mobility, and decreasing the risk of falls, through a team effort that included occupational therapists, nurses, and licensed handymen. Costs for repairing aspects of the homes, such as replacing old banisters, broken steps, or burned-out light bulbs, were minimal—the budget was approximately about \$1,300 per participant—but the results were significant, often greatly boosting participants' ability to do basic and instrumental ADLs. Low-resourced older adults may in general have to cope with many environmental challenges, but the good news is that a concerted effort, client input, and little bit of money can help a lot.

“One could argue that so many changes in a home could be overwhelming to older adults; however, all environmental modifications were a result of a brainstorming process in which both the participant and the clinician suggested ideas,” Granbom, Evelyn-Gustave, and Gitlin note.

Planning to participate in AOTA's Hill Day in person or virtually on October 1 (#OTHillday)? Authors Nicole C.S. Barker and Gail Fisher in their article on page 18 provides some suggestions about setting up workshops wherever you may be in the country to help occupational therapy practitioners learn more about reaching out to lawmakers and their staff. Among other things, they note, “Make it an event with a little pomp, circumstance, and fun,” to boost the enthusiasm and motivation for encouraging others to advocate for occupational therapy with elected officials and make change happen.

Any strategies or tactics you've found successful in communicating about the value of the profession with lawmakers or other decisions makers? Send us a note and let us know!



Best regards,

Ted McKenna

Ted McKenna, Editor, *OT Practice*, tmckenna@aota.org

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AOTA Board Member Throws Out First Pitch at Red Sox Game

Occupational therapy practitioners know that to make a difference, they sometimes need to think outside the box. AOTA Board Director **Melissa Tilton**, OTA, BS, COTA, ROH, took this mentality to a new level on August 20, live in Boston's Fenway Park in front of thousands of cheering baseball fans.

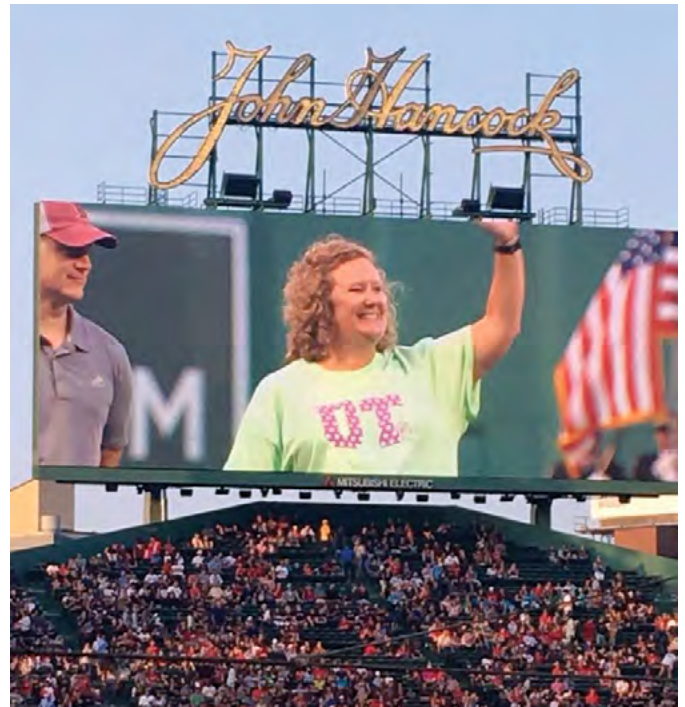
Throwing out the ceremonial first pitch, Tilton kicked off Boston Red Sox Rehabilitation Night. The evening, created by the baseball organization, was originally advertised to recognize "PTs, OTs, and SLPs," according to a social media posting passed along to her by a colleague. As an occupational therapy assistant (OTA) for more than 20 years, Tilton found the omission of OTAs and physical therapy assistants (PTAs) frustrating. But instead of stewing about it, she took action.

"I reached out to a Red Sox employee to thank her for having this Rehab Night and to ask a few more questions about it," Tilton said. "I also asked her if it was OK to give some feedback. I shared that both the OT and PT professions have OTAs and PTAs, who are licensed and credentialed practitioners. She was great. She stated she had no idea and was grateful to get some info. She was willing to take back the flyer to the Red Sox to talk to them about it. From then on, the language changed to OTs, PTs, SLPs, OTAs, and PTAs. It was such a win for me."

Tilton then learned that the Rehabilitation Night organizers were seeking nominations for five people to be on the field, one of whom would throw the first pitch. She was nominated and chosen.

Tilton, who said she did not own a ball or glove before embarking on this assignment, took training very seriously, practicing throws across the required 60-foot 6-inch distance each evening with her partner, Ben, and "studying Top 10 bloopers in hopes of learning a little something."

In the end, the practice paid off. Her pitch reached home plate and was no small part of what Tilton said was "the best OT night ever."



Tilton's contribution to the Boston Red Sox Rehabilitation Night also included designing a Jumbotron memorial that ran during the 6th inning for fellow OT and Red Sox fan Janet Wright, who passed away last spring.

In the end, the Red Sox fell to the Cleveland Indians 4 to 5, but for Tilton, the night was a big win for rehab professionals, especially OTAs.

"I've never been more proud to be an OTA, to be part of an amazing profession, and to have had a chance of a lifetime," Tilton said, "I still can't believe it happened. I even got some cheers going 'OT, OT, OT, OT' in the crowd."

—Katie Riley, AOTA's Manager of Media and Public Relations

VCU, Longwood Get \$1M Training Grant for Children With Disabilities

The U.S. Department of Education's Office of Special Education Programs recently awarded a 5-year, \$1.07 million grant to train 40 occupational therapy, physical therapy, and speech-language pathology students at Virginia Commonwealth University (VCU), in Richmond, and

Longwood University, in Farmville, Virginia, to work with students, teachers, and families to support children with disabilities.

Training will include online learning modules, lectures, clinical affiliations, and mentorship.

Faculty members overseeing the effort include **Carole**

K. Ivey, PhD, OTR/L, Principal Investigator on the grant and an Associate Professor in the Department of Occupational Therapy in VCU's College of Health Professions; and **Patricia Laverdure**, OTD, OTR/L, BCP, Project Coordinator, Assistant Professor, and Director of Fieldwork in the

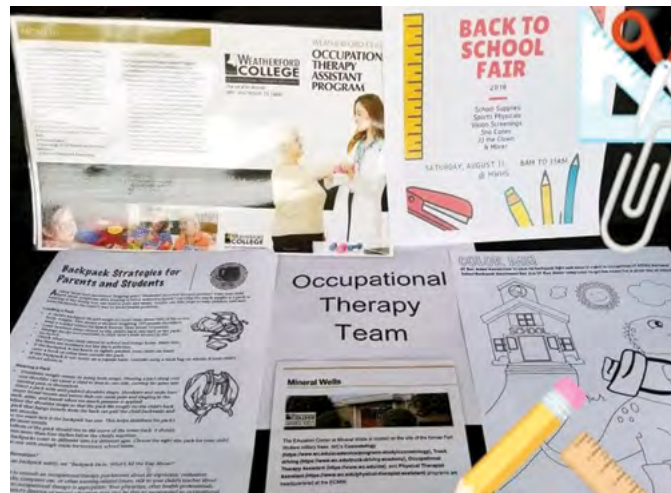
Department of Occupational Therapy.

This service-learning element involves partners from the Down Syndrome Association of Greater Richmond, Children's Hospital of Richmond at VCU, and REACHcycles. For more, visit <https://bit.ly/2LdRpVS>.

Podcast: Tips for Planning a Backpack Awareness Day Event

From hosting a backpack weigh-in event to sharing resources, there are a variety of ways to help commemorate AOTA's National School Backpack Safety Awareness Day, to be held this year on September 26.

Backpack Awareness Day founder **Karen Jacobs, EdD, OTR/L, CPE, FAOTA**, and **Jacquelyn M. Sample, DrOT, MEd, OTR/L**, in a recent podcast discussed the following suggestions on how to create a successful backpack awareness activity.



Backpack Awareness Day founder **Karen Jacobs, EdD, OTR/L, CPE, FAOTA**, and **Jacquelyn M. Sample, DrOT, MEd, OTR/L**, in a recent podcast discussed the following suggestions on how to create a successful backpack awareness activity.

Weigh-in Event: Read AOTA's tips for a successful weigh-in event, and review the free resources. Grab a scale and AOTA's weigh-in sheet and record the weights of students' backpacks. Send home AOTA materials to parents on how to select a safe backpack, and how to wear a backpack (also available in Spanish).

Skit: Jacobs can provide a skit for students to perform based on *The Incredibles*. For this year's skit, visit www.promotingot.org.

School Assembly: Speak with student groups about the dangers of heavy backpacks and the items that can be removed or rearranged to lighten the load.

Math Lesson: Depending on the age of the students, weigh backpacks; talk about what makes them heavy; create bar graphs and dot charts on how much they weighed; and find the mean, median, and average of the weights.

Table of Materials: Share AOTA's handouts on backpack safety.

Write a Blurb for the School Newsletter

Coloring Contest: Download AOTA's OTRex Coloring Sheet and distribute to children. This is also available in Spanish.

Backpack Giveaway: Coordinate with a local company to donate backpacks to your students or another group.

Stickers: Download AOTA's Backpack Awareness Day logo onto labels, and distribute as stickers.

Share Tips on Social Media: Using #BackpackSafety, share tips for safe backpack use.

To listen to the podcast and get links to these resources, visit <https://bit.ly/2LhYi8T>. Many resources are also available at www.aota.org/backpack.

New Video: Know When Your State License Expires

Do you know when your state license expires? A new video from AOTA's Ethics Commission talks about why practitioners should stay on top of their state licensure renewal to avoid unnecessary ethical and legal problems. To watch the video and get links to resources on understanding your professional obligation as an occupational therapist or occupational therapy assistant, visit www.aota.org/Practice/Ethics/video-license.

AOTA for You



Occupational Therapy Practice Guidelines for Home Modifications
C. Siebert, S. Smallfield, & S. Stark

Using an evidence-based perspective, these guidelines provide an overview of the occupational therapy

process and best practices for home modification interventions. **\$74 for members**, \$148 for non-members. Order #900357. eBook **\$49 for members**, \$89 for non-members. Order #900459.



Occupational Therapy and Home Modification: Promoting Safety and Supporting Participation
M. Christenson & C. Chase

This text was created for occupational therapy students and professionals new to home modification but

also will benefit those who have been practicing in this area through discussions of the latest assessment tools and new assistive technology. **\$69 for members**, \$98 for nonmembers. Order #1259.



To Order: <http://store.aota.org> (enter order # preferred) or call 800-729-2682

Intersections

AOTA had a major presence at the National Conference of State Legislatures (NCSL) Legislative Summit in August at the Los Angeles Convention Center. AOTA representatives included **Kristen Neville**, AOTA's State Affairs Manager; **Katie Jordan**, OTD, OTR/L, of the University of Southern California; **Heather Kitching**, OTD, OTR/L, President of the Occupational Therapy Association of California; and **Shawn Phipps**, PhD, MS, OTR/L, FAOTA, former AOTA Vice President. The summit provided a great opportunity to showcase the work of occupational therapy practitioners; answer questions about the profession from state legislators, legislative staff, and government officials from around the world; interact with NCSL staff regarding occupational licensing issues, and hear many inspirational stories about attendees' positive experiences working with occupational therapy practitioners. The more than 5,300 attendees were most interested in occupational therapy's role in mental health as well as in treating autism and dementia. AOTA's OT Rex stress balls were also a big hit!

—Kristen Neville

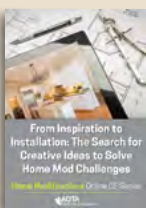


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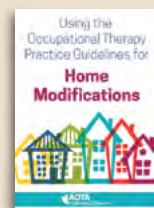
Nicolaas van den Heever, OTD, BOT, OTL, was recently appointed as

Founding Program Director and Professor to develop the Occupational Therapy Doctoral Program at Yeshiva University, in New York City. Prior to this engagement, van den Heever served as Associate Professor and Director of the School of Occupational Therapy at Brenau University, in Gainesville, Georgia, and Founding Dean and Program Director at West Coast University, in Los Angeles.



Webcast: From Inspiration to Installation: The Search for Creative Ideas to Solve Home Mod Challenges
C. Chase
 Earn .1 AOTA CEU (1.25 NBCOT PDU's/1 contact hour). This course contains multiple opportunities to

explore the creative side of practitioners while problem-solving throughout the home modification process.
\$24.95 for members, \$34.95 for nonmembers.
 Order #WA1221.



Online Course: Using the Occupational Therapy Practice Guidelines for Home Modifications
C. Siebert & S. Smallfield
 Earn .15 AOTA CEU (1.88 NBCOT PDU's/1.5 contact hours). This course uses a multimedia format to present a case study

illustrating important concepts in the practice guidelines for home modifications. **\$34.95 for members, \$49.95 for nonmembers.** Order #OL4895.



Questions?: 800-SAY-AOTA (members); 301-652-AOTA (nonmembers and local callers)

In Memoriam: Jim Hinojosa



It is with the deepest sadness that we announce that Jim Hinojosa, OT, PhD, FAOTA, Professor Emeritus in the Department of Occupational Therapy at New York University (NYU) Steinhardt, passed away on August 6, 2018, in his sleep.

Hinojosa began his career as a therapist at Blythedale Children's Hospital, moving into academia at the State University of New York at

Downstate Medical Center, and then in 1999, he came to NYU. He was Chair of the Department from 2000 to 2007 and was awarded the NYU Distinguished Teaching Award in 2011. Hinojosa served the profession through his leadership in multiple AOTA and American Occupational Therapy Foundation (AOTF) committees and commissions. He chaired AOTA's Commission on Practice, and he served on AOTA's Executive Board (1989–1995) and Commission on Continuing Competence and Professional Development. He was also a Director on the AOTF Board (1993–1999).

Hinojosa was a leader in the field of occupational therapy and was named as one of the top 100 most influential

occupational therapists during the centennial celebration of AOTA in 2017. He received many major awards in occupational therapy, including the Roster of Fellow of AOTA in 1984; the Award of Merit in 1994; the Meritorious Service Award in 2000; and the Eleanor Clarke Slagle Lectureship, the profession's highest academic honor granted by AOTA, in 2006. Additionally, he was the co-author of 14 books and numerous book chapters, and he had more than 150 peer-reviewed publications.

Hinojosa is survived by his partner of 42 loving years, Steven A. Smith; his mother; and two brothers. A celebration of his life will be held at NYU on the evening of September 27, 2018, and a scholarship will

be established in his name at NYU for those who wish to remember him.

Hinojosa leaves behind a strong legacy, especially his contributions to the occupational therapy profession. He was a dear friend and mentor to many, and his kindness and generosity will be remembered by all who came in contact with him. He touched so many personally and through his writings. This brief statement doesn't begin to describe the wonderful person that Hinojosa was and how much he meant to all of us, as a true gentleman and a scholar, and a wonderful part of the NYU family who will be dearly missed.

—Paula Kramer, Kristie Patten Koenig, and Tsu-Hsin Howe

Ethics Commission: Public Disciplinary Actions—August 2018

The Ethics Commission (EC) has taken the following recent disciplinary action. According to Section 1.3 of the *Enforcement Procedures for the Occupational Therapy Code of Ethics*, with the exception of those cases involving only reprimand, the American Occupational Therapy Association (AOTA) “will report the conclusions and sanctions in its official publications and will also communicate to any appropriate persons or entities.”

Name: Michelle L. Cirigliano, OT

Sanction: Censure, effective August 16, 2018
Occupational Therapy Code of Ethics (2015)

Please contact Deborah Slater, Ethics Program Manager, at dslater@aota.org if there are questions concerning this information.

AOTA alerts

Get the latest updates at www.aota.org/alerts

Hill Day: AOTA's OT Hill Day will be October 1 in Washington, DC, to be held in conjunction with Virtual Hill Week.

Virtual School Fair: Know someone considering an OT

or OTA career? Encourage them to check out our virtual school fair on September 19. OT/OTA programs are invited to participate to meet and connect with prospective students.

Send news items to otpractice@aota.org.

Clocking Wins for Occupational Therapy's Role in Mental Health

Budget requests from several federal agencies this year support occupational therapy's role in mental health.

Abe Saffer

This year's federal budget process has seen some wins for occupational therapy's role in mental health. Here are the details.

Federal Budget Justification

Every year, all federal agencies prepare a budget request that they send to the President. These requests include a budget justification, or the “what” and “why” of funding the request. It lays out what programs they want funded and why those programs deserve funding. Because of this process, the final Presidential budget proposal provides a window into the White House views of the programs and their value.

In the 2019 fiscal year (FY19) Health Resources & Services Administration (HRSA) budget justification, the agency laid out the benefits of the Behavioral Health Workforce Education and Training (BHWET) Program. The 21st Century Cures Act previously added occupational therapy to this key behavioral health workforce program. Occupational therapy's addition to the BHWET program allowed educational programs to apply for and receive grants to provide or improve fieldwork placements in mental and behavioral health settings.

In the FY19 HRSA justification for the BHWET Program, the federal government specified those professions that are part of the behavioral health workforce and, for the first time, included occupational therapy. This inclusion bolsters AOTA's continued efforts to have occupational therapy reimbursed for mental health services at the state level, to be included in future mental and behavioral health programs, and to be recognized as a mental health provider in all 50 states.


Congressional Appropriations

In both FY17 and FY18, Congress funded BHWET at \$50 million. Both the House and

Senate Appropriations Committees passed FY19 funding bills that included substantial increases for BHWET—up to \$75 million in the Senate and up to \$82.5 million in the House. The expanded funding for this program should enable more occupational therapy education programs to receive grants under BHWET.

In addition to this increase, the Senate bill added occupational therapy to a second separate, but similar, workforce training program, the Mental and Behavioral Health Education Training (MBHET) program. Additionally, the Senate Appropriations bill increased funding for this program to nearly \$37 million, versus \$9 million in previous years. The Senate bill makes occupational therapy eligible for two mental and behavioral health–focused workforce training programs totaling nearly \$112 million, a 124% increase over current funding.

Discussions with Appropriations Committee staff have indicated a desire to combine these two training programs, both of which are administered by HRSA. This would allow HRSA to save the administrative costs of running two separate but nearly identical programs. AOTA supports including occupational therapy with the MBHET program, but it has no position on whether these programs should remain separate or be combined. We are advocating for the Senate funding levels and for occupational therapy to remain eligible for the full amount.

There are many steps before this funding bill is finally signed into law. But the Senate's inclusion of occupational therapy within the MBHET program, and HRSA's inclusion of occupational therapy among its list of behavioral health professionals, show the federal government's commitment to ensuring access to occupational therapy services for people with mental health disorders. 

Abe Saffer is AOTA's Legislative Representative for Federal Affairs.



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Helping Older Adults

Environmental Modifications of the CAPABLE Program



Age in Place



Low-resourced older adults with functional difficulties in Baltimore got help from local occupational therapists, nurses, and carpenters, as part of an extensive, ongoing study.

**by Marianne Granbom,
Allyson Evelyn-Gustave,
Laura N. Gitlin, and Sarah Szanton**

Providing environmental modifications, including assistive devices and home modifications, is one of the core aspects of occupational therapy practice with older adults with functional disability. Convincing evidence shows that addressing functional challenges at home through environmental modification can have a positive effect on older adults' occupational performance and level of independence in a cost-effective way (Stark et al., 2017). Older adults typically live in older homes, which may necessitate a wide range of modifications for safe functioning at home. This is particularly the case for older adults with low income who may live in poor housing stock (Golant, 2008). This article describes environmental modifications provided in homes of low-resourced older adults with functional difficulties and the range of their costs as part of a study evaluating the program Community Aging in Place, Advancing Better Living for Elders (CAPABLE), which provided home visits in Baltimore by occupational therapists (OTs) and nurses.

Table 1. Client Characteristics (N = 258)

Participant characteristics	
Age, <i>m</i> (<i>SD</i>)	74.1 (8.6)
Race, <i>n</i> (%)	
Black	202 (80.2)
White	42 (16.7)
Other	8 (3.2)
Women, <i>n</i> (%)	213 (84.5)
Education, <i>n</i> (%)	
High school	101 (40.1)
High school or general educational development	124 (49.2)
Bachelor's degree or higher	27 (10.7)
Living alone, <i>n</i> (%)	114 (45.6)
Hospitalization in last year, <i>n</i> (%)	81 (32.1)



Participants and Recruitment

CAPABLE seeks to reduce hospitalization and nursing home admissions among low-resourced older adults living in the community. Based on a theoretical foundation of person-environment press (Lawton & Nahemow, 1973) and resilience (Szanton & Gill, 2010), the program aims to enable older adults with functional challenges to age in place. It is a 5-month-long program with up to 10 home visits, including six sessions with an OT, four sessions with a nurse, and approximately \$1,300 of environmental modifications identified by the OT and provided by a licensed handyman. The environmental adjustments support the self-identified functional goals the older adults describe as most important.

The main goal of the CAPABLE program is to promote self-efficacy, with the client acting as the driver of change. The program aims to show respect for the client's beliefs, and understanding of the client's cultural context, with these principles shaping all aspects of the program. Further, the clinicians use problem-solving techniques to reach solutions with the client that are tailored to the client's needs, circumstances, and interests.

Participants eligible for the CAPABLE program study were community-dwelling adults aged 65 years or older, were dually eligible for Medicare and Medicaid, reported difficulty or dependence in at least one ADL, were cognitively intact, were living in a house, were not receiving home care at the time of the initiation of the study, and had not been hospitalized more than three times in the previous year. The program used several sources for recruitment, including mailings from Maryland's Medicaid program and presentations at senior centers, and by word of mouth (Szanton et al., 2014, 2016). In all, the program assessed 788 older adults for eligibility and enrolled 281 participants (see Table 1).

Environmental Modifications

Data on environmental modifications were captured by OTs as part of their documentation of each program session. During the interventions, the OT recorded each participant's self-identified activity goals. These goals were wide ranging and included showering safely, putting on and taking off shoes and socks, preparing meals, improving safe mobility,

Table 2. Environmental Modifications Completed in the CAPABLE Program

Category	Definition	Examples	Homes changed, <i>n</i> (%)	Total number of modifications	<i>M</i> (<i>SD</i>)	Cost range
Structural adaptations	Installing adaptations by altering or adding fixed features to the built home environment with the intention to make the home environment more supportive of people with functional limitations and activity problems	<ul style="list-style-type: none"> ● Install grab bars in the tub area to facilitate safe use of the tub ● Widen bathroom door for wheelchair access 	246 (97.2)	1,306	5.2 (2.5)	\$25–\$500
Home repairs	Fix and replace what is broken. Maintenance of the home that improves housing standard but is crucial for the participant to achieve their functional goals.	<ul style="list-style-type: none"> ● Fix hole in floor ● Staple down loose wall-to-wall carpet to avoid falls 	240 (94.9)	1,415	5.6 (3.5)	\$35–\$225
Assistive devices	Provide items designed to overcome functional limitations and activity problems	<ul style="list-style-type: none"> ● Reacher ● Raised toilet seat 	232 (91.7)	865	3.4 (2.3)	\$5–\$100
Regular Household items	Provide missing items common in most homes, to improve living standard	<ul style="list-style-type: none"> ● Night lamp for safe transfer from bed to bathroom at night ● Sturdy step stool to reach kitchen cabinets safely 	201 (80.2)	440	1.7 (1.4)	\$20–\$100

decreasing risk of falls, and improving home security. Data on environmental changes were collected from the work orders that were written by the OTs after the second home visit.

We (the authors) identified four major types of environmental modifications. The most common strategy provided in 97.2% ($n=246$) of the houses was structural adaptations that involved altering or adding fixed features to the home (see Table 2). Structural adaptations most commonly included installing new rails and banisters or adding a second banister to support safe mobility on stairs. It was also common to put up grab bars (282 in all). They were usually put up in shower/bath areas or close to the toilet, but occasionally they were put up in hallways or other parts of the house where transfer from sitting to standing was demanding. Installing new lights in dark areas of the home to facilitate safe transfer was also common (e.g., motion lights on stairs, stronger lights in hallways). In many cases, cords and rugs were secured. Less common structural adaptations were to install intercom systems, adjust the height of counters, elevate a washing machine, and install a microwave oven (see Table 3 on p. 12).

Home aspects such as home hazards were assessed with the Centers for Disease Control and Prevention (CDC; 2015) Home Hazard Checklist. We used 11 of the items and summarized a score, ranging from 0 to 11. Housing standard was assessed by the OT observing the home on four items: peeling paint, evidence of pests, broken furniture or lamps, and flooring in need of repair. If the answer was yes to one or more items, it was categorized as medium or low housing standard; if the answer was no, it was categorized as good housing standard.

The second most common category involved home repairs such as fixing and replacing things that were broken and presented as a fall hazard or barrier for participating in a desired activity. Home repairs were completed in 94.9% ($n=240$) of the homes (see Table 2). The most frequent home repair was to tighten and mend broken and unsteady rails and banisters for exterior steps and interior stairwells (see Table 4 on p. 12). Doors or locks needed to be repaired not only to make it easier to open and close doors but also for security reasons. Other repairs included fixing doorbells, adding missing doorknobs, or rehang-ing interior doors. Plumbing work was

also common. For example, leaking sinks or tubs needed to be repaired or re-caulked. Running toilets and faucets and tub knobs being too hard to turn on or off caused problems for the participants and needed to be repaired. Additionally, in many cases, broken and unsafe lights needed to be repaired, and several burned-out light bulbs needed to be replaced. In more rare cases (included in “other” in Table 4 on p. 12), drawers hard to open in kitchens or dressers were mended, pests eliminated, and wobbly furniture tightened.

The third major category was providing a range of assistive devices. In all, 91.7% ($n=232$) of the participants received at least one assistive device (see Table 2). Reachers were most common and were used to improve ADL (e.g., reach clothes when dressing) and IADL independence (e.g., grabbing the newspaper outside in the morning). Several participants received an array of seats and benches to use showers and bathtubs in a safer and less strenuous way. Raised toilet seats, with or without armrests, were installed to enable safe transfer on and off the toilet. Less common but important to some participants (captured under “other” in Table 5 on p. 13) were devices to put on necklaces, or mobile

Table 3. Structural Adaptations

Structural adaptation strategies	Frequency	%
Install new rails/banisters	447	34.2
Install grab bars	282	21.6
Install new lights (e.g., motion lights in stairs)	161	12.3
Secure rugs and cords	126	9.6
Adapt showers (e.g., install flexible shower hoses)	74	5.7
Repair doors, doorbells, and peepholes	63	4.8
Install non-skid treads (floors, steps, and tubs)	43	3.3
Install strings for ceiling lights and fans	33	2.5
Optimize storage	20	1.5
Add new steps or even out level differences (not thresholds)	16	1.2
Lower or level out existing threshold	11	0.8
Other	30	2.3
TOTAL	1,306	100

Table 4. Home Repairs

Home repair strategies	Frequency	%
Tighten rails and banisters	270	19.1
Repair doors and locks	238	16.8
Address plumbing and water issues	213	15.1
Fix broken lights and replace light bulbs	203	14.4
Repair cabinets and closets	78	5.5
Address heating and electricity issues	68	4.8
Fix holes in floors or cracked tiles	67	4.7
Repair broken stairs and steps	59	4.2
Repair porches and outside entrances	54	3.8
Repair ceilings, walls, and windows	41	2.9
Replace missing thresholds	39	2.8
Repair appliances (minor)	28	2.0
Other	57	4.0
TOTAL	1,415	100

hearing amplifiers to improve functional and social engagement.

The final large group of environmental changes concerned providing regular household items needed to accomplish chores and perform ADL and IADL activities. Household items also included chairs, lamps, mailboxes, and garbage cans. All items were easily accessible in stores and were ordered by OTs and brought to the participant on subsequent home visits (see Table 2). The most common items were non-slip rugs to replace hazardous ones in kitchens, bathrooms,

and hallways (see Table 6). Regular step stools were needed for the participants to reach items in cupboards. Storage containers were used to improve storage and to organize items in the home. Less common but vital to some participants were garbage cans and ironing boards. Electric razors were also ordered for participants who needed to be mindful of how to conserve their energy.

The environmental modifications to the home were made to meet individually tailored goals within the following goal areas: decrease falls ($n=1,945$, 48.3%);

improve home security ($n=781$, 19.4%), improve ADL independence ($n=512$, 12.7%); improve safe mobility in the home ($n=509$, 12.6%); and improve IADL independence ($n=278$, 6.9%).

In all, 4,026 environmental modifications were suggested, approved by the participants, and installed by the handyman or brought by the OT. This reflected an average of 15.9 per study participant ($SD=5.4$). Home repairs and structural adaptations comprised approximately one third each of all environmental modifications ($n=1,415$, 35.1%; and $n=1,306$, 32.4%, respectively). Assistive devices constituted 21.5 % ($n=865$) of the modifications and regular household items 10.9 % ($n=440$; see Table 2).

Costs

The budget for the environmental modifications was no more than approximately \$1,300 per participant. The cost per item varied substantially. Smaller, non-complex, ready-to-order items such as coil shoelaces to more easily get shoes on and off, cost less (about \$5). Larger, complex alterations and repairs to the home, such as adding new steps in or outside, cost up to \$500. The median cost was \$1,133 per participant, ranging from \$72 to \$1,399. The cost for structural adaptations and home repairs included labor and materials, but for assistive devices the cost included only materials. For example, tightening rails and banisters cost about \$80, and installing a new banister cost about \$240. Fixing broken lights cost about \$115, replacing a burned out lightbulb with a higher wattage bulb cost about \$20, and putting motion lights in a stairway cost about \$125. Repairing broken stairs and steps cost \$150, whereas adding new steps, or leveling out height differences, cost about \$500. Securing rugs and cords cost about \$45, and fixing holes in the floor and replacing cracked tiles cost about \$65.

Among assistive devices, shower chairs cost less than \$40, tub benches cost about \$100, a raised toilet seat cost \$34, tub clamps (handles to put on the bathtub) cost about \$30, and bed rails cost about \$55. Of regular household items, rugs, as well as a set of storage containers, often cost less than \$30. Garbage cans cost less than \$40. Different kinds of lamps, such as night lamps, floor lamps, or desk lamps, cost about \$35 each.

We were not able to calculate exact costs for each environmental modification. Civic Works, the Baltimore nonprofit group that implemented the modifications, found that providing estimates and then getting final work orders from the OTs added an extra layer of cost and time that impaired the cost-efficient process. The total costs for each participant were calculated based on what Civic Works billed the CAPABLE study, but because the invoices were not itemized for each repair or alteration, we were unable to break down those costs to each repair.

Methods

The Johns Hopkins Medical Institution's Institutional Review Board approved the study. Baseline data were collected during a home visit, before the program started. Demographic information was collected on age, race, sex, level of education, whether the participant was living alone, and partial or full eligibility for Medicaid. Health aspects were collected by asking the participants whether they had been admitted to the hospital in the last year. Additionally, difficulty with ADLs was captured with the Katz ADL Index score (Katz et al., 1963) on bathing, dressing upper body and lower body, transfer to and from bed and chairs, eating, toileting, walking indoors, and grooming (range 0–8). Difficulty with IADLs was summarized in a score based on cooking, doing light housework, shopping, using the phone, doing laundry, traveling, taking medications, and managing money (range 0–8). Depression was captured with the Patient Health Questionnaire (Jonkers et al., 2007). Higher scores reflected higher symptoms of depression. Cognitive functioning was assessed with the Mini-Mental Status Examination (Folstein et al., 1975; range 0–30); higher scores reflected higher cognitive function. For pain, one item from the EuroQOL was used (EuroQol Group, 1990).

Results

This demonstration of the CAPABLE program included 258 older adults (for more on the participants, see Table 1 on p. 10). At follow-up, the number of ADLs that were difficult to perform was reduced in 75% of participants. On average, difficulties with ADLs were reduced from 3.9 activities at baseline (out of 8)

Table 5. Assistive Devices

Assistive devices	Frequency	%
Reachers	127	14.7
Shower/bath seats	108	12.6
Raised toilet seats	102	11.8
Dressing aids (e.g., button hooker)	95	11.0
Personal care items (e.g., adapted brushes)	79	9.1
Tub clamps	42	4.8
Aids for sitting and rising (e.g., cushions, chair risers)	41	4.7
Mobility devices (e.g., canes, walkers, wheeled walkers)	34	3.9
Non-slip rug pads	34	3.9
Coil laces	26	3.0
Step stools (with handle)	24	2.8
Leg lifters	22	2.5
Bed rails	17	2.0
Cooking and eating aids	13	1.5
Magnifiers	11	1.3
Bedside commodes	9	1.0
Car handles (portable handles to aid getting out of car)	9	1.0
Other	71	82
TOTAL	865	100

Table 6. Regular Household Items

Regular household items	Frequency	%
Sturdy, ordinary rugs and mats	170	38.7
Fire extinguishers	43	9.8
Step stools (without handle)	36	8.2
Plastic storage containers	22	5.0
Regular low-cost phones	16	3.6
Kitchen carts on wheels (e.g., with drawers, several tiers, or cutting board)	14	3.2
Regular lamps (desk lamps, floor lamps, night lamps)	13	3.0
Regular sturdy chairs with armrests	13	3.0
Mops and vacuum cleaners	13	3.0
Electric strips and surge protectors	11	2.5
Garbage cans	7	1.6
Regular toilet seats to replace broken ones	7	1.6
Regular mailboxes	6	1.4
Other	69	15.7
TOTAL	440	100

to difficulties with 2.0 activities (i.e., a reduction of difficulty with close to two activities) after completing the program. IADLs improved for 65% of the participants, and depressive symptoms

were reduced in 53% of the participants. The program was also found to reduce health care costs by \$10,000 per year per participant (Ruiz et al., 2017; Szanton et al., 2016).



Discussion

The results of this study showed that participants in CAPABLE received on average 15.9 environmental modifications. This is an extraordinary number of changes for a modest amount of money (a cap of \$1,300 per participant), considering the type and range of modifications provided and, as reported elsewhere, the high effect of the program on daily function (Szanton et al., 2016). The number of modifications provided in itself suggests that low-resourced older adults with functional difficulties live at home with many unmet environmental challenges and unaddressed daily needs (Freedman & Spillman, 2014). One could argue that so many changes in a home could be overwhelming to older adults; however, all environmental modifications were a result of a brainstorming process in which both the participant and the

clinician suggested ideas. The environmental modifications were agreed on before installation, and in many cases the modifications complemented the existing design and features of the home—for example, adding a second banister in the stairway.

The costs included parts and labor but were kept low. One reason was that the household items were not as expensive as assistive devices. Another reason was that labor performed by a nonprofit organization kept installation costs down. In addition, some home repairs required little cost and were minor in terms of labor involved, such as tightening existing banisters or replacing light bulbs.

This study identified four categories of environmental modifications and two of them—home repairs and regular household items—are not typically included in environmental modification

services. For low-resourced older adults, replacing a non-functioning garbage can or fixing broken steps—regular household items and home repairs—can be vital and should be considered as necessary for daily functioning at home as other environmental modifications. With the growing older population, the proportion of low-resourced older adults is expected to increase as well. For older adult homeowners, the possibilities of maintaining the house, doing necessary repairs, and purchasing aging-in-place services are likely to be increasingly difficult (Bipartisan Policy Center, 2015). Thus, environmental modification services, including home repairs, are probably relevant to an increasing proportion of older adults.

A key aspect of providing environmental modifications is tailoring them to a person's environment, values, preferences, and abilities (Kim et al., 2014; Somerville et al., 2016). Designing environmental modification programs where home repairs and regular household items are included could facilitate tailoring them to low-resourced older adults. Considering that only 3.8% of the housing units in the United States are suitable for individuals with moderate mobility difficulties (U.S. Department of Housing and Urban Development, 2015), it was not surprising that several environmental modifications involved installing or fixing banisters and grab bars; installing or fixing lights; securing or replacing rugs, mats, and cords; and installing shower seats and raised toilet seats. These environmental modifications were typically used to help improve mobility and safe transfer, and decrease fall risk, one of the most common goal areas older adults sought to achieve in the program. 🌀

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For More Information



AOTA's Societal Statement on Livable Communities
<https://bit.ly/2M1fEvQ>



Lifestyle Redesign: Implementing the Well Elderly Program

By F. A. Clark, 2015. Bethesda, MD: AOTA Press. \$79 for members, \$112 for nonmembers. Order #900359.



Self-Paced Clinical Course: Occupational Therapy and Home Modification: Promoting Safety and Supporting Participation

By M. Christenson & C. Chase, 2011. Bethesda, MD: American Occupational Therapy Association. Earn .2 AOTA CEU (25 NBCOT PDUs, 20 contact hours). \$259 for members, \$359 for nonmembers. Order #3029.



Occupational Therapy Practice Guidelines for Home Modification

By C. Siebert, S. Smallfield, & S. Stark, 2014. Bethesda, MD: AOTA Press. \$74 for members, \$148 for nonmembers. Order #900357. eBook: \$49 for members, \$89 for nonmembers. Order# 900459.



Webcast: Setting up a Home Modifications Business

By E. Ainsworth & A. Wagenfeld, 2016. Bethesda, MD: American Occupational Therapy Association. Earn .1 AOTA CEU (1.25 NBCOT PDUs, 1 contact hour). \$24.95 for members, \$34.95 for nonmembers. Order #WA1223.



Webcast: From Inspiration to Installation: The Search for Creative Ideas to Solve Home Mod Challenges

By C. Chase & A. Wagenfeld, 2016. Bethesda, MD: American Occupational Therapy Association. Earn .1 AOTA CEU (1.25 NBCOT PDUs, 1 contact hour). \$24.95 for members, \$34.95 for nonmembers. Order #WA1221.



Webcast: Enabling Design: A Person-Centered Approach

By C. Sithong & M. Elliott, 2016. Bethesda, MD: American Occupational Therapy Association. Earn .15 AOTA CEU (2.5 NBCOT PDUs, 1.5 contact hour). \$24.95 for members, \$34.95 for nonmembers. Order #WA1226.



Webinar: The Impact of Emerging Technology Trends for Individuals With Disabilities

By M. Kelley & G. de Jongh, 2016. Chicago, IL: Assistive Technology Industry Association. Earn 1 contact hour. \$39 for members/nonmembers. Order #WA1602.

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Choosing Wisely®

An initiative of the ABIM Foundation

Glen Gillen on Non-Purposeful Intervention Activities

Hillary Richardson

In June 2018, with input from the American Occupational Therapy Association (AOTA) members and in collaboration with the Choosing Wisely® initiative from the American Board of Internal Medicine Foundation, AOTA released “5 Things Patients and Providers Should Question.” Over the next several months, *OT Practice*® will publish Q&As with content experts on each topic to expound on the recommendations and provide guidance to clinicians as they incorporate them into practice.

Glen Gillen, EdD, OTR, FAOTA, is the Program Director of Columbia University Programs in Occupational Therapy as well as the Program Champion for AOTA’s involvement in the Choosing Wisely initiative. Gillen is a clinical expert in neurorehabilitation, motor control, and cognitive-perceptual impairments as they relate to occupational performance. He spoke with Hillary Richardson, MOT, OTR/L, AOTA’s Program Manager for Evidence-Based Practice, Knowledge Translation, and Practice, for a conversation about the first recommendation:

#1: Don’t provide intervention activities that are non-purposeful (e.g., cones, pegs, shoulder arc, arm bike).

Purposeful activities—tasks that are part of daily routines and hold meaning, relevance, and perceived utility, such as personal care, home management, school, and work—are a core premise of occupational therapy. Research shows that using purposeful activity (occupation) in interventions is an intrinsic motivator for patients. Such activities can increase attention, endurance, motor performance, pain tolerance, and engagement, resulting in better patient outcomes. Purposeful activities build on a person’s ability and lead to achievement of personal and functional goals. Conversely, non-purposeful activities do not stimulate interest or motivation, resulting in reduced patient participation and suboptimal outcomes.

Richardson: Why is it important to avoid non-purposeful activities in occupational therapy?

Gillen: Our profession was founded on the premise of using meaningful and purposeful activity as the foundation for therapy. Since then, we have developed a body of research that supports our original principles of therapy. In addition, scientists in our field have demonstrated that using activities that are purposeful and intrinsically motivating produces better outcomes than non-purposeful activities and exercise. If we call ourselves occupational therapy practitioners, we should be the leaders in using authentic occupations. I can understand our clients’ and the general public’s confusion about our field if their exposure is to a clinic where clients are stacking cones, moving colored discs over a rainbow arc, putting pegs in boards, etc.

Richardson: Why might non-purposeful activities be prevalent in some rehabilitation settings?

Gillen: I believe it has become habit and routine at this point. My practice area is adults with physical and cognitive disabilities that negatively affect occupational performance. I have never seen a textbook or heard of an academic program that teaches and promotes using

non-purposeful activities. I can still hear my professor saying, “DO NOT USE CONES” in the 1980s.

Richardson: That is certainly a familiar sentiment to many coming out of occupational therapy programs. For clinicians who might now be in the habit of using non-purposeful activities but have seen success with their clients, why should they change the type of therapy they provide?

Gillen: Our profession’s research supports the use of purposeful activities over the use of non-purposeful activities. Clinicians may in fact see outcomes that are better than the outcomes they are currently achieving. It is also possible that these more optimal outcomes can be achieved more rapidly. How great would that be?! I say try it, you’ll like it!

Richardson: Is there ever a place for non-purposeful activities in occupational therapy intervention?

Gillen: We do have a category of interventions that are classified as preparatory. My concern, and survey research confirms, is that preparatory interventions are used to a greater extent than authentic occupations. While there is a place for preparatory activities, occupational therapy practitioners need to use them appropriately and maintain focus on being leaders in providing effective, occupation-based interventions.

Richardson: What types of challenges do you anticipate for clinicians who want to move toward occupation-based activities?

Gillen: The use of occupation is inherently more intellectually challenging and requires creativity. This should be embraced. I think the biggest push-back is from clinicians who fell into a long-held habit of using non-purposeful activities. Change is hard, but change is critical. I think our clients will be more satisfied.

Richardson: Do you have recommendations for how therapists might realign their practice based on this recommendation for occupation-based activities, as well as build a repertoire of purposeful activities that would be more appropriate?

Gillen: I think the best starting place is to critically examine your clinic environment. How many choices of purposeful activities are available versus non-purposeful? The vast majority of clinic inventory should be from hardware stores, toy stores, grocery stores, etc. A good starting point is to have an “occupation drive” at work. We all have household items that are redundant and can be donated to the clinic to expand the repertoire of purposeful interventions.

Richardson: As the Program Champion, what do you think are the biggest benefits to AOTA’s participation in Choosing Wisely?

Gillen: AOTA’s involvement endorses occupational therapy as a discipline that provides quality and cost-effective care. We are joining forces with more than 70 related disciplines that have joined the Choosing Wisely movement. Joining the program makes a clear statement that our occupational therapy interventions and assessments should be based on evidence, not harmful, and not duplicative.

Next month, the Choosing Wisely Q&A series will explore the recommendation:

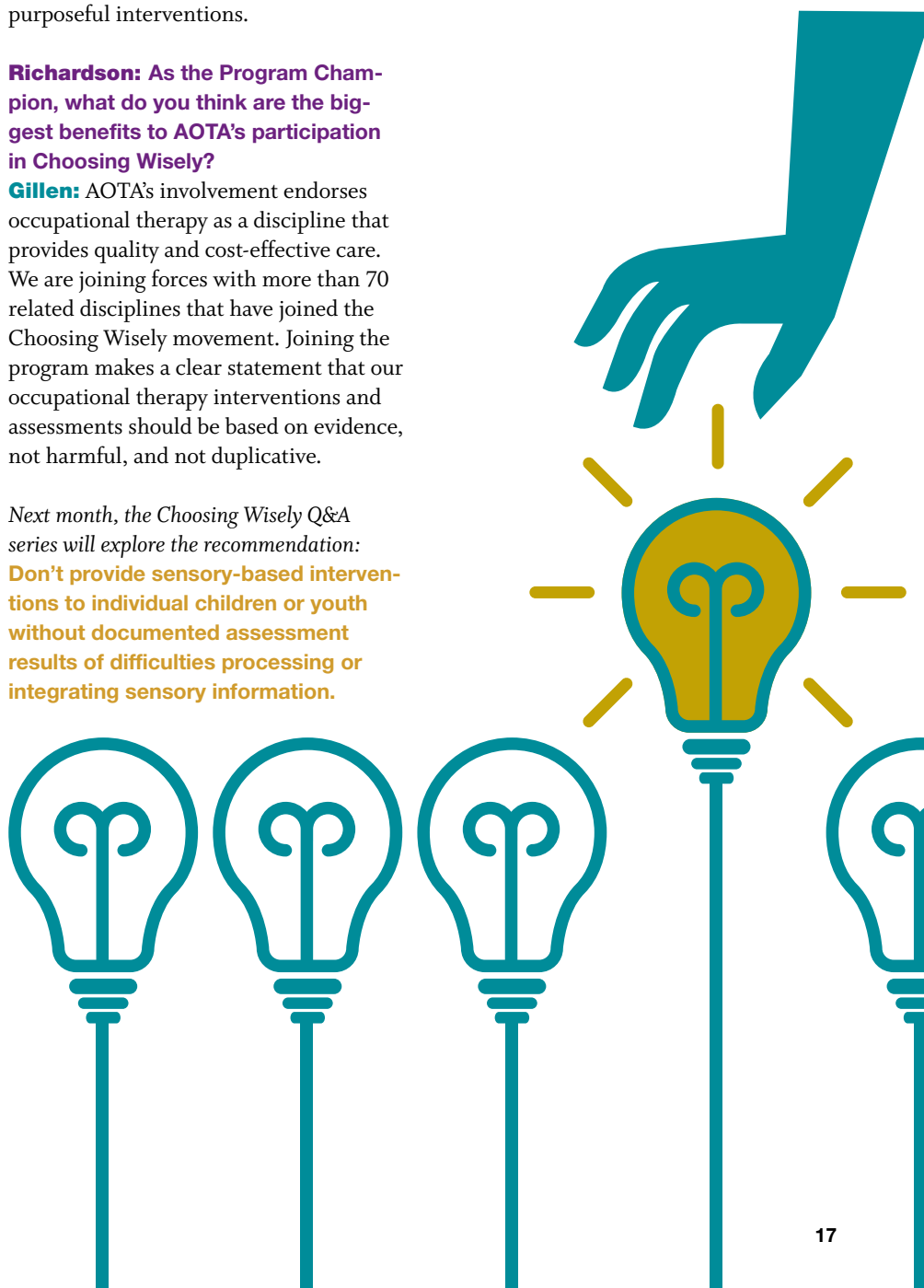
Don’t provide sensory-based interventions to individual children or youth without documented assessment results of difficulties processing or integrating sensory information.

For more information, including the full list of recommendations, visit www.aota.org/practice/researchers/choosing-wisely.

Note: Choosing Wisely recommendations should not be used to establish coverage decisions or exclusions. Rather, they are meant to spur conversation about what is appropriate and necessary treatment. As each patient situation is unique, providers and patients should use the recommendations as guidelines to determine an appropriate treatment plan together. ☺

Reference

Five Things Patients and Providers Should Question. (2018, June 4). Retrieved from <http://www.choosingwisely.org/societies/american-occupational-therapy-association-inc/>



Take a Stand With Technology

Advocating for the Profession With Virtual Hill Days

Nicole C.S. Barker
Gail Fisher

In February, our profession scored a victory 20 years in the making: the repeal of the Medicare therapy cap. For years, the annual cap on the amount of therapy paid for by Medicare limited outpatient therapy for Medicare clients. After 20 years of advocacy, resulting in incremental, stopgap measures through the exception process, occupational therapy practitioners finally have the freedom

to treat clients as is medically necessary—without an arbitrary annual dollar limit.

This would not have happened were it not for the work of occupational therapy practitioners across the country joining with the American Occupational Therapy Association (AOTA) lobbyists. It was practitioners who lent their voices to the fight by providing real-life stories of the effects of the therapy cap that helped to change this policy.



PHOTOGRAPHS COURTESY OF GAIL FISHER

Although we have had some policy victories, many issues still lay before us, on the federal, state, and local levels. One way occupational therapy practitioners and students make their voices heard by legislators is through AOTA's Hill Day, held each year in the fall in Washington, DC (this year it is on Monday, October 1). Hill Day provides a vital opportunity for lawmakers and their health policy staffers to hear from practitioners and students, and to have faces and stories to attach to the legislation before them.

Attending Hill Day in person is far from the only way to get involved—and with the advent of technology, there are many more ways for the busy professional or student to lend their informed voices to the national conversation.

At the University of Illinois at Chicago (UIC) Department of Occupational Therapy, we have conducted Virtual Hill Day events for the past 2 years. Typically, only a few of the members of our department are able to attend Hill Day in person—primarily because of being located in the Midwest, which makes attending more difficult. Many more members of the department and local community wanted to get involved. Building on our first Hill Day in 2016, we held a Virtual Hill Day workshop in fall 2017. This event used the power of technology to get participants involved with occupational therapy policy on the national level. Beginning with an interactive presentation on current issues, we featured videos of recent Congressional testimony and demonstrations by disability rights groups, such as ADAPT; a hands-on letter writing component through AOTA's Legislative Action Center (see Resources on p. 20); and a handout of *Tips for Contacting Your Legislators*—both in person and through technology.

In 2017 we added a community connection to expand our scope to legislation that affects our client base as well. To broaden our impact, we featured background on H.R. 620, the ADA Education and Reform Act, supported by materials from our local Center for Independent Living, Access Living, and the Disability Rights and Education Defense Fund, a civil rights and disability policy center run by individuals and parents of individuals with disabilities.

We chose to hold our Virtual Hill Day workshop 1 week after AOTA's Hill Day, so the two UIC students who had attended the in-person Hill Day could provide an

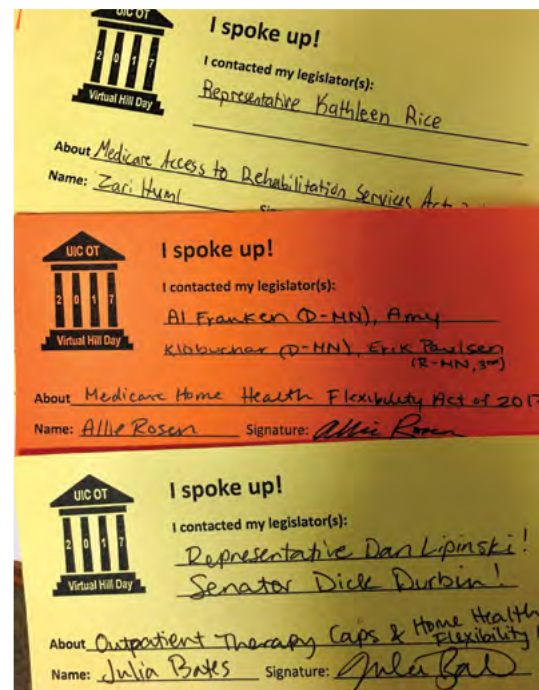


“on the ground” report and share photos and stories of their experience. Although occupational therapy practitioners well know that correlation does not imply causation, it may not be a coincidence that Congressman Danny Davis (IL-7), who represents the UIC campus area, signed on as a co-sponsor of the Medicare therapy cap repeal bill within a week after our students met with him at Hill Day!

Interested in launching a Virtual Hill Day of your own? The following are some tips for conducting workshops to support successful virtual Hill Day events, either in your state or as part of the AOTA's annual Hill Day, in Washington, D.C.

Begin With a Short Presentation

Give a briefing of the legislation your colleagues at the in-person Hill Day are advocating for. Be sure to highlight how the bills are relevant to your environment and audience, instead of just presenting the dry facts. Remember the old slogan, “Think global, act local”? Apply that in your case as well. Would your workplace be affected by pending Medicare legislation? What is the potential effect of pending legislation on current or future practice, or on a family member? Do your students or clients need accommodations under the Americans with Disabilities Act (ADA)? Did you just cover something in class that's eerily relevant to what's in the news? Is there a local community organization, such as a Center for Independent Living, that will be affected by the targeted legislation? There's probably a piece of legislation or policy that directly applies to



prospective Hill Day participants—tie this in to your presentation.

Include a Hands-on Activity

Use the tools available to you to have people take tangible action. AOTA uses a platform called CQRC Engage (www.AOTA.org/TakeAction) to help you identify your representatives and senators. Make sure you walk through the process with your workshop participants, taking as much time as possible to answer questions. For more on how the Legislative Action Center can be used for contacting legislators and much more, see the Capital Briefing in the July 23 issue of *OT Practice* (or visit <https://doi.org/10.7138/otp.2018.2313.cb>).

Allow Time for Questions and Discussion

Invite AOTA Hill Day attendees and other participants to share advocacy stories. Invite participants to ask questions



about the legislation or how to navigate AOTA's Legislative Action Center.

Keep Your Event Issue Based

AOTA has long had supporters on both sides of the aisle, and members from both parties are needed to sponsor and vote for the legislation we are promoting. Remember that even if your legislators belong to a different party, they are trying to do their best in their own way to represent you. It is your responsibility to respectfully ask them to represent you in the ways you want to be represented. Focus on the facts at hand.

Pick the Perfect Time

Schedule your event on the same day as Hill Day for maximum effect on your legislators—or within a week, if AOTA Hill Day attendees will be part of your workshop. Make sure your event is scheduled at a time that works with your participants' schedules. Lunch time or the end of the work or school day is often the best time.

Have a Timeline That Includes Reminders and Follow Up

Announce as far in advance as possible that you're holding the event—ideally at least 2 weeks to 1 month ahead of time. Remind your participants weekly and the day before the event. Keep the information fresh in your participants' minds—whether that's with a poster, an email, a social media post, or even reminders in the lunch room.

Harness the Power of Technology

Encourage your participants to bring their own technology (e.g., smartphones, tablets, laptops) when possible. Have multiple methods of contacting representatives. In addition to AOTA's Legislative Action

Center, do not neglect to include more traditional methods, such as calling your representatives (see Resources), handwriting them a letter (please note, this will take time to get to them so should only be used for non-urgent matters), and going to their local offices (a little more time consuming, but still very effective when building relationships with your legislators).

Provide Take-Home Materials

Use handouts to your best advantage. At UIC, we included hard copy briefings on each issue and a handout of *Tips for Contacting Legislators*. Participants can refer to the handout as they work on their message on their smartphone or laptop.

Create a Sense of Engagement and Community

Make it an event with a little pomp, circumstance, and fun—have people take photos and share their plans for taking further action with the group. Use the power of the hashtag—such as AOTA's #OTHillDay—to help your participants join the conversation on social media. Provide cards saying, "I took action!" so participants can add their name, who they contacted, and the issue they advocated for, and display the cards in your department. Provide buttons or stickers indicating, "I'm an advocate." It's long been said armies run on their stomachs, so don't forget the snacks.

Cap it Off With a Call to Action

Make sure you end your presentation by summarizing and tying back to the "why." Why are you doing this? It's not just about contacting legislators—it's about advocating for our profession and our clients. You want the good you do as individual practitioners or students to

extend onward, and to help more people than you could in a therapy context.

As Margaret Mead once said, "Never doubt that a small group of thoughtful, committed citizens can change the world; indeed, it's the only thing that ever has." Lend your expert voice to the national conversation, and help make change happen.

Resources

- AOTA's Legislative Action Center (www.aota.org/takeaction) makes it easy to find your legislators based on your residency, and then contact them through email.
- AOTA's Hill Day event page (<https://www.aota.org/Conference-Events/Hill-Day.aspx>) has orientation materials that provide policy briefs and talking points to discuss with your legislators.
- Consider signing up for Access Living's email newsletter (<https://www.accessliving.org/newsletter-signup>), especially if you are in the Midwest, for news on disability rights advocacy opportunities and timely action alerts. These newsletters are often local, but also incorporate national issues.
- Kaiser Health News (<https://khn.org>) is a nonprofit, nonpartisan health care news source funded by the Kaiser Family Foundation, and a source for reputable information on health care issues.
- The Disability Rights Education and Defense Fund (<https://dredf.org/>) is a national organization for civil and human rights laws and policy, cross-disability, formed by people with disabilities and parents of children with disabilities, and a source of information on the effects of policy on people with disabilities. 📞

This article and event would not have been possible without the work of Lauren Janness, OTR/L, UIC MSOT '17, who began UIC's Virtual Hill Day workshop in 2016 and created the initial copy of the Tips for Contacting Legislators handout.

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Factors in Selecting Eye Gaze Technology for Young Children

An Interprofessional Pilot Study

Sandra Masayko
Joy S. McGowan



Over the past 10 years, assistive technology (AT) that uses eye gaze to control computers has expanded options for people with disabilities, including young children. Using portable eye gaze technology systems can enable people to participate in home, school, and community activities. But selecting adaptations to promote participation by young children with complex developmental needs can be challenging for teams. Unlike adults, who often come to technology with language, reading, and computer skills, young children need to develop these abilities as they learn to use the technology.

Eye gaze (or “eye tracking”) technology uses a computer, an eye tracker, software, and usually an adjustable mount to hold the device in position. To use the tech-

nology, the person is positioned in front of the computer. At the lower part of the device is the eye tracker, which emits invisible infrared light onto the person’s eyes. That light is reflected back into the tracker. The tracker calculates the location of the person’s gaze. By looking at a point for a specified amount of time, the person can select or “click” on the item. Thus, eye movements can control the cursor the way hand movements control a mouse. Because the tracker must detect the person’s eyes, positioning is crucial for success with this access method.

Over a 5-year period prior to the 2015–2016 school year, we tried eye gaze technology with about 15 children who were candidates for it as augmentative/alternative communication (AAC). Not much research on implementing eye gaze technology with young children is available, although several articles published recently in Sweden reported some positive findings related to eye gaze technology, occupations, and children (Borgestig et al., 2016a, 2016b; Ryttersotrom et al., 2016).

To make decisions about eye gaze technology more systematically, we (the authors) studied 12 children, ages 3 to 6 years, at Easterseals Southeastern Pennsylvania during the 2015–2017 school years. We identified children being taught to use eye gaze technology by our interprofessional staff, including physical therapists and speech-language pathologists, and we helped designate possible candidates from this pool with permission from parents to participate. We obtained informed consent, reviewed records, and interviewed team members and parents of the children. We observed the children and coached team members on implementing the technology.



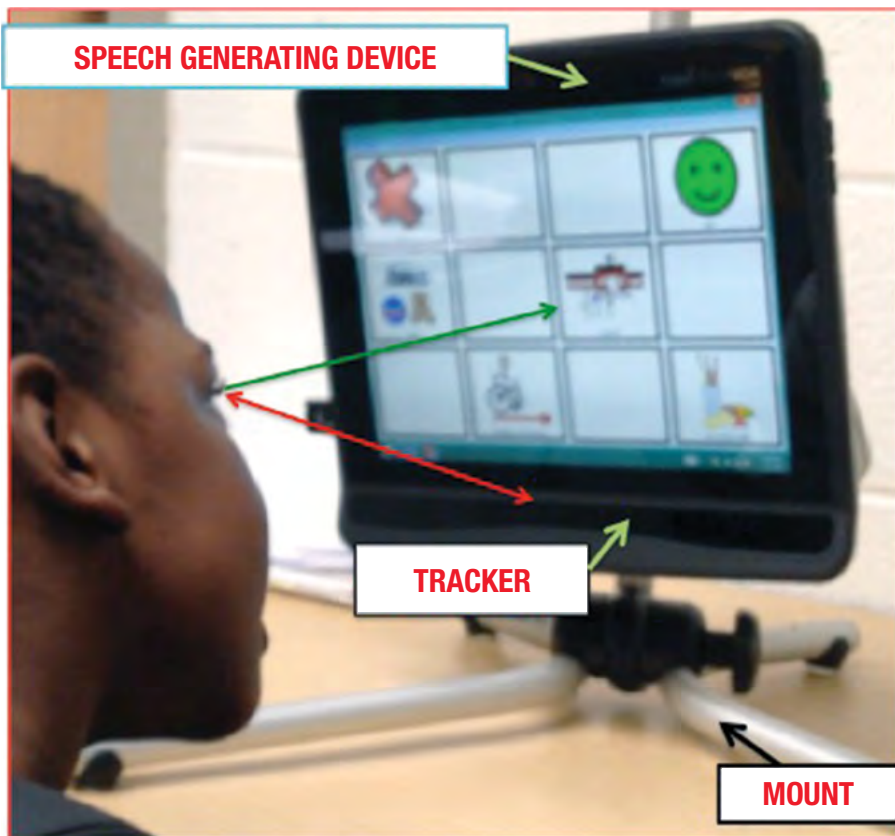
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Adapted seating with head support and mounts for the device are usually necessary for young children who need eye gaze technology.



A child's ability to handle objects is a factor in determining whether eye gaze technology may be appropriate.



The tracker emits invisible infrared light that enables it to detect the position of the user's eyes.

We considered five factors that influence decision making around eye tracking technology, including:

- Individual children's physical, communicative, and cognitive abilities as well as their interests
- Parental agreement to trials
- Staff experience and expectations
- AT team roles
- Agency support

Child Factors

Of the 12 children, eight had cerebral palsy (CP) with spastic quadriplegia; one had athetoid CP; one had unspecified CP with arthrogryposis; and two had rare neuromuscular disorders. All had dysarthria (oral motor weakness) and dysphagia (swallowing difficulties). Some children had additional conditions, including seizure disorders, hearing impairment, cortical visual impairment, and nystagmus. These conditions make movement, hand skills, and communication significantly challenging.

None had independent trunk control, but all had adequate adapted seating and adapted head support in school. Positioning is essential to success with eye

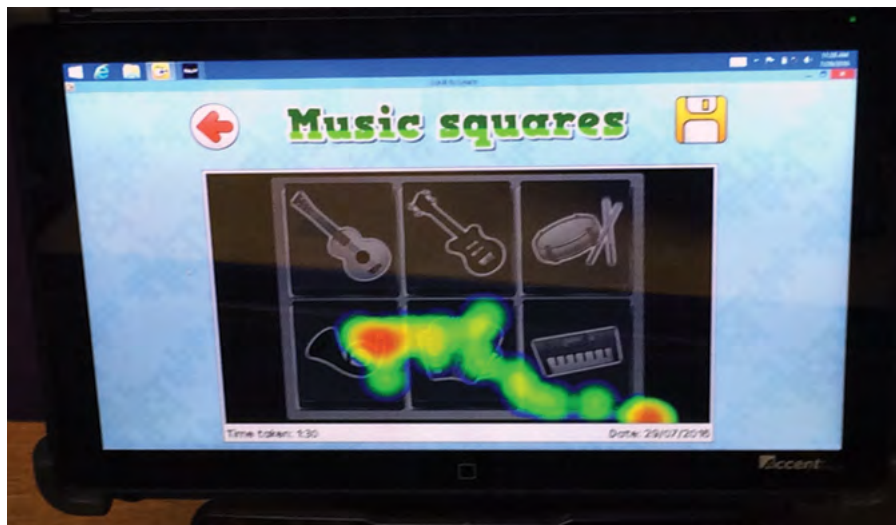
gaze technology because the child must maintain eye contact with the eye tracker to activate the computer.

Physical therapists rated their students on the Expanded and Revised Gross Motor Function Classification (Palisano et al., 2007). Two children were emerging in self-mobility with limitations (Level IV). All the children had significant mobility issues, and all were transported in a manual wheelchair most of the time (Level V). Any communication system for these children needed to be portable, so the team needed to address mounting and transporting the device.

Using the Manual Ability Classification System for Children With Cerebral Palsy (Eliason et al., 2010) to assess the 12 children, we found that three were able to handle objects with difficulty (Level III), five could handle a limited selection of adapted objects (Level IV), and four were rated at Level V—they did not handle objects. Difficulty with manually selecting icons on a speech-generating device indicates that eye gaze technology might be an appropriate access method for a student.

Speech-language pathologists determined each child's communication level using the Classification System for Individuals With Cerebral Palsy (Hidecker et al., 2011). This instrument considers the child's effectiveness in sending and receiving messages. The therapists decided that four children were effective senders and receivers of messages with familiar partners (Level III); six were inconsistent communicators with familiar partners (Level IV); and two were seldom effective senders or receivers, even with familiar partners (Level V). None were effective communicators with unfamiliar partners.

Prior to entry into our program, before 3 years of age, the children were evaluated on a variety of measures to assess their cognitive abilities. Most attained scores in the range of 2 to 3 standard deviations below the mean. The significance of low standard scores in cognition is unclear for young children who have not had opportunities to move in their environments, manipulate objects, and develop a way to communicate. However, a child's cognitive ability to demonstrate preferences, sustain interest and attention, and understand cause/effect relationships are significant in determining whether eye gaze technology could be useful.



Software data: Example of a heat map indicating that a child did not gaze at the upper level of the screen. Red indicates where gaze was held longest. Resource: Look to Learn by Smartbox.



Using the eye gaze lab, this child is coloring by using her eyes while her therapist encourages her. Resource: HelpKidzLearn by Inclusive Technology.

Children require many skills and adaptations to use an eye-tracking device to augment communication. They need:

- Seating that supports sustaining gaze at the screen
- Visual acuity in at least one eye, sufficient to see the screen
- Attention to and interest in what is on the screen
- Understanding that their eyes cause something to happen on the screen
- Ability to scan the screen to find icons, discriminate pictures, and form categories, and to navigate between screens to find items in folders

When we initially began trying eye gaze technology for young children, we primarily considered how they would be able to communicate with the device. Now there are options to help children get ready to communicate by engaging in fun gaming software that helps them develop the visual and cognitive skills necessary to control a computer. The software helps them develop targeting, cause/effect, and choice making within the occupation of play. Many programs have built-in data collection programs.

To expand opportunities with technology, we set up one eye gaze lab in each of our four preschools serving children with



Playing with Old MacDonald's farm, going fishing, and dressing dolls are some of the games children can play while using eye gaze technology.

multiple disabilities. Each lab consists of a computer, monitor, eye tracker, portable height-adjustable table, and software for young learners. This allows the children to play while developing the skills they may later use to communicate. Options for play are often limited for children with multiple disabilities, so the eye gaze lab provides adaptations to enable this important occupation.

Parent Factors

Although we focus on the child to determine whether eye gaze technology might be appropriate, parents are essential team members who must be included in decision making about devices for their child. Ultimately, the parents will facilitate use

of the computer in the child's home and community. All parents agreed to have their children participate in trials and supported their children using eye gaze technology. Six families had trials with devices in their homes, which our teams supported by coaching the families.

Staff Factors

To examine staff's background for using this technology, we interviewed or surveyed 32 staff members, including therapists and special educators. Most speech-language pathologists and one occupational therapist had completed a college-level ACC course, but eye gaze technology was not covered. We found that only one half of the teachers and

occupational and physical therapists had received even informal training in eye gaze technology from colleagues or the AT Team. Only 5% of the staff had formal training in eye gaze technology.

On reflection after the interviews in the first year, we realized that we needed to formalize our instruction for all staff members. In the second year, we instituted workshops for staff, and we followed up with coaching in small team meetings. In the second year, 70% of the staff members completed a formal training session.

Outcomes

At the end of the 2016 school year:

- One child obtained an eye gaze device for AAC.
- One child obtained an AAC device activated by hand.
- Three children continued with eye gaze technology trials into the next school year.
- Two children discontinued eye gaze technology. Of these, one has cortical visual impairment and did not like looking at the screen. The other child also has nystagmus and preferred to touch objects, so he developed the ability to use his hands to activate two switches.

At the end of the 2017 school year:

- Four children (including the three participating in trials during the previous year) obtained eye gaze technology for AAC.
- One child improved with pointing on language boards; he obtained a touch-activated speech-generating device in 2018.
- Three children continued training with low- and high-tech eye gaze for education, play, and communication.

A surprising finding for us was that two children increased their ability to use their hands and therefore ultimately were able to use speech-generating devices activated by touch rather than eye gaze. Our experience is that trials with multiple devices are necessary, and that children's abilities can change in ways that affect their use of devices.

Funding for the recommended speech-generating devices was obtained through the children's medical insurance as

durable medical equipment; the children could use the devices to indicate pain, hunger, thirst, and positioning needs. The staff taught children and the families how to communicate medical issues to meet the children's most basic health needs, but they also promoted using the devices throughout the day during the children's routines.

Continuing Questions

Many topics remain to be studied regarding eye gaze technology and young children:

- Effects of conditions such as cortical visual impairment on using eye gaze technology
- Best practices, frequency, and duration in teaching how to use eye gaze technology
- Optimal instruction in language programs
- Methods of integrating devices throughout the day to support occupations
- Effective support of staff members who implement the technology

We continued our study in the 2017–2018 school year with additional children, and we are analyzing data now. This ongoing action research has helped us to become more systematic in our implementation and decision making about eye gaze technology. Because of this study, we have been able to forge alliances with Stockholm University and Thomas Jefferson University for collaborative projects for additional research. 📧

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Occupational Therapy and the Cancer Care Continuum: Adjusting Treatment Focuses

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ABSTRACT

Occupational therapy practitioners who work with cancer survivors must have a foundational understanding of how cancer and the associated treatments cause a changing trajectory of functional and cognitive abilities. This article begins with an overview of cancer and treatments, discusses associated precautions and side effects, and then describes how occupational therapy services must be tailored to the client needs and desires during three

periods: (1) diagnosis and during active cancer treatments, (2) after cancer treatments and into extended survivorship, and (3) in the setting of advanced cancer. Recommended resources are included to assist clinicians in remaining current with their knowledge of oncology to apply to their occupational therapy practice.

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Cancer and the associated treatments affect physical, cognitive, and emotional abilities across the cancer care continuum and lead to impaired functional performance and overall quality of life. This article describes the vital role occupational therapy plays in enhancing occupational participation by educating clients, families, and caregivers about anticipated changes in physical and cognitive functioning and how to manage these changes.

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APP **The Impact of Disability, Vision & Aging and their Relationship to Driving.** This 2-day continuing education course provides a broad overview of the driver rehabilitation process. The course is designed for healthcare providers starting or advancing a driver rehabilitation program as well as those referring individuals to a program. Traffic safety/driver education professionals will benefit from the information that they can apply to their practice. Topics include: acquired, congenital, developmental and progressive disabilities; age-related and visual impairments that

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NOVEMBER

Dobbs Ferry, NY **November 9–10**
APP **Optimizing Executive Function: Strategy Based Intervention in Children and Adults.** This course will provide in-depth information on treatment of cognitive dysfunction across the lifespan, with a focus on executive function impairments. Case applications of intervention principles across different ages and populations will be discussed. Instructors: Joan Toglia and Izel Obermeyer; Contact: Mercy College, 914-674-7444 for questions, SHNS@mercy.edu for details and registration. Pre-registration \$375 (8/1–9/8); Reg. Registration \$425 (9/9–10/9). AOTA CEU (12 contact hours / 1.2 CEU's). Register at <https://www.mercy.edu/health-and-natural-sciences/>

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D-8491



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2018

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2019

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D-8518

Introduction to Functional Cognition by M. Tracy Morrison, OTD, OTR/L. As a result of the Improving Post-Acute Care Transformation Act of 2014 (IMPACT Act) data collection is now being conducted by CMS in an effort to better coordinate care and improve functional outcomes. Therefore, now is the time for OT practitioners to step up and provide assessments and interventions that target cognitive client factors to improve functional abilities. This course will help you to understand that functional cognition is not assessed or treated with table top activities, but must be contextual and focused on functional performance. Earn: .15 CEU's (1.5 Contact hours and 1.88 NBCOT PDU). Order #OL5141. AOTA Members: \$29.95, Nonmembers: \$39.95. <http://store.aota.org> 0818

Functional Outcome Measures in Post-Acute Care: They are Here! by Ellen R. Strunk, PT, MS and Christine Kroll, OTD, MS, OTR, FAOTA. Physical Therapy and Occupational Therapy professionals have long desired to have consistent functional measures that could begin to quantify the value of rehabilitation services provided to patients treated in skilled nursing facilities, long-term acute care hospitals, inpatient rehabilitation facilities and home health agencies. The Centers for Medicare and Medicaid Services has developed and finalized measures to do just that. This webinar will describe the measures, define the data elements included in the measures of self-care and mobility, and share important timelines therapists should be aware of. Data finally has the potential to be compared across the post-acute care settings. It will be important for therapists not only to understand the measures and their component elements, but also to insure their processes for collecting data are reliable and accurate. Earn: 1.5 Contact hour (1.88 NBCOT PDU). Order #OL5115. AOTA Members: FREE, Nonmembers: \$25.00. <http://store.aota.org> 0818

Online Course

Caseload to Workload: Overcoming Barriers by Mindy Garfinkel, OTD, OTR/L, ATP and Francine M. Seruya, PhD, OTR/L. As a school based practitioner, do you still follow a caseload approach to service provision? Did you know that the way in which practitioners manage their workload affects their availability, the quality of the services provided, student outcomes, and successes? A workload approach aligns with the Individuals with Disabilities Education Act, Early Intervening Services, and a Public Health Model, all of which support inclusive services, provided in natural environments; and providing services that benefit the whole-school community. This approach helps support every child, with the goal of preventing students from needing more intensive services later. This course will assist you in better understanding the differences between caseload and workload approaches and highlight the evidence that supports the transition to a workload approach to OT services in school settings. In addition, the material covered will assist you in identifying barriers and supporting a transition to a workload approach in your setting. Earn .1 AOTA CEU (1.25 NBCOT PDU/1 contact hour). Order #OL5131. AOTA Members: \$24.95, Nonmembers: \$34.95. <http://store.aota.org> 0818

Online Course

A Trauma-Informed Approach Distinct to Occupational Therapy: The TIC-OT Model by Dianna Derigo, Duana Russell-Thomas, OTD, OTR/L and Christine Berg, PhD, OTR/L, FAOTA. This interactive introductory course defines trauma, its causes and sequelae, and offers a model for occupational therapy practitioners to use when working with those whose lives and occupational participation have been adversely impacted in some way by a traumatic event. Earn .15 CEUs (1.88 NBCOT PDUs/1.5 contact hours). Order #OL5140. AOTA Members: \$29.95, Nonmembers: \$39.95. <http://store.aota.org> 0718

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Learn about tested treatment strategies by reading AJOT articles in your area of practice. Become an evidence-based practitioner and demonstrate your knowledge by passing the course exam. Articles have been selected for their relevance to practice, fresh ideas, and strong evidence supporting treatment and the distinct value of OT. Earn .1 AOTA CEU (1.25 NBCOT PDU/1 contact hour), AOTA Members: \$20.99, Nonmembers \$24.99. <http://store.aota.org> 0718

AJOT CE: Occupational Therapy Fall Prevention Interventions for Community-Dwelling Older Adults: A Systematic Review, Order #CEAJOT62

AJOT CE: Effectiveness of Health Promotion, Management, and Maintenance Interventions Within the Scope of OT for Community-Dwelling Older Adults: A Systematic Review, Order #CEAJOT63

AJOT CE: Occupational Therapy Interventions to Improve Activities of Daily Living for Community-Dwelling Older Adults: A Systematic Review, Order #CEAJOT64

AJOT CE: Activity Engagement and Everyday Technology Use Among Older Adults in an Urban Area, Order #CEAJOT65

AJOT CE: Predictive Value of the Cognitive Performance Test (CPT) for Staging Function and Fitness to Drive in People With Neurocognitive Disorders, Order #CEAJOT66

Online Course

Supporting Mealtimes in School-Based Practice by Joanna Cosbey, PhD, OTR/L and Pam Stephenson OTD, OTR/L. This course explores the breadth and depth of school-based mealtimes, assists the practitioner in articulating the skills and knowledge that OT practitioner can bring to the team, and provides examples of the evidence and how to use it to be a champion for the team approach to mealtime in your district and/or state. Earn: .15 CEUs (1.88 NBCOT

PDUs/1.5 Contact Hours). Order #OL5130. AOTA Members: \$29.95, Nonmembers: \$39.95. <http://store.aota.org> 0518

Online Course

Ethical Issues in School Practice by Douglene Jackson, PhD, OTR/L, LMT, ATP and Jean Polichino, OTR, MS, FAOTA. The purpose of this interactive course is to assist the school-based practitioner to better understand and utilize ethical principles in practice as well as to learn about valuable resources to assist when ethical dilemmas arise. Practitioners will review the six ethical principles and then apply these principles to actual practice dilemmas—they will then hear the thoughts of the presenters to gain insight into how dilemmas can be understood and resolved. Earn .1 AOTA CEU (1.25 NBCOT PDUs/1 contact hour). Order #OL5132. AOTA Members: \$25, Nonmembers: \$55. <http://store.aota.org> 0518

Online Course

Coaching Interventions and The Primary Service Provider Model by Kris Pizur-Barnekow, PhD, OTR/L, IMH-E; Ashley Stoffel, OTD, OTR/L, FAOTA; and Alexandra Kapellusch, MS OTR/L. This course discusses coaching as an intervention approach and to describe the Primary Service Provider (PSP) model of teaming. Resources for occupational therapy practitioners to enhance advocacy for their role in early intervention while coaching and practicing within the PSP framework are provided. Earn .075 CEU (1 NBCOT PDU/.75 contact hour). Order #OL5120. AOTA Members: \$19.95, Nonmembers: \$34.95. <http://store.aota.org> 0418

Online Course

Best Practice Methods in Early Intervention Documentation by Ashley Stoffel, OTD, OTR/L and Kris Pizur-Barnekow, PhD, OTR/L, IMH-E®. Early Intervention (EI) occupational therapy practitioners provide family-centered and routines-based services for infants and toddlers. EI occupational therapy practitioners play an important role on the EI team. OT practitioners need to document our skilled, distinct services and participate in outcome measurement. Resources, tips and strategies will be shared in this webcast in order to advance evidence-based practice for OT practitioners in EI including: participating in the Individualized Family Service Plan (IFSP) team process; writing functional IFSP outcomes and collecting data to measure progress; and considering health literacy in EI documentation. Earn .1 AOTA CEU (1.25 NBCOT PDU/1 contact hour). Order #OL5121. AOTA Members: \$24.95, Nonmembers: \$34.95. <http://store.aota.org> 0418

Online Series

Fieldwork Education Series by Donna Costa, DHS, OTR/L, FAOTA, Program Director and Associate Professor, University of Nevada, Las Vegas. Earn your digital badge in Fieldwork Education and enhance your fieldwork educator skills with this 3-part course that covers the fundamentals of becoming a clinical fieldwork educator. **Earn .2 AOTA CEU (2.5 NBCOT PDU/2 contact hours) per course.** AOTA Members: \$34.95/course, Nonmembers: \$59.95/course. <http://store.aota.org> 0218

Fieldwork Education Module 1: Preparing to Become a Fieldwork Educator, Order #OL5111

Fieldwork Education Module 2: Working With OT and OTA Students During Level I and Level II Fieldwork, Order #OL5112

Fieldwork Education Module 3: Fieldwork Career Paths, Order #OL5113

Online Course

SIS Quarterly Practice Connections #7 - Mental Health. Earn CE credit with the *SIS Quarterly Practice Connections!* In this course, you will learn to: 1. Explain occupational therapy's role in the provision of mental health services for various client populations and practice settings; 2. Describe the holistic approach and positive outcomes of occupational therapy interventions for clients in various community mental health

OT Continuing Education Opportunities

programs; and 3. Identify ways in which occupational therapy practitioners can advocate and promote access to occupational therapy for individuals and populations. Earn .1 CEU (NBCOT PDU's 1.25/1 contact hour). Order #CESISC07. Members: \$20.99, Nonmembers: \$24.99. <http://store.aota.org> 0118

Online Course

Early Intervention & Preschool: Occupational Therapy Participation in the Child Outcomes Summary Process by Lesly W. James, PhD, MPA, OTR/L, FAOTA and Ashley Stoffel, OTD, OTR/L. By the end of this Webcast, learners will know how to: 1) Define the three global functional child outcomes that all early intervention and early childhood programs must measure and report nationally; 2) Identify national tools and resources that support participation in the early childhood outcomes summary process; and 3) Identify at least three strategies to support the occupational therapy practitioner participating in the IFSP and/or IEP team rating process for outcome measures. Earn .075 CEU (1 NBCOT PDU/.75 contact hour). Order #OL5114. AOTA Members: \$19.95, Nonmembers: \$24.95. <http://store.aota.org> 0218

Online Course

Low Vision Assessment for Occupational Therapy by Yu-Pin Hsu, EdD, OT, SCLV & Roy G. Cole, OD, FAAO. This program provides instruction on vision screening strategies and assessment tools that occupational therapists can use to identify vision problems and determine how vision loss may be affecting client's activities of daily living (ADL) and instrumental activities of daily living (IADL). Findings from a basic vision assessment help in formulating functional goals and appropriate interventions that address identified impairments and improve client's occupational performance. **Earn .2 AOTA CEU (2.5 NBCOT PDU/2 contact hour)**. Order #OL4903. **AOTA Members: \$34.95, Nonmembers: \$49.94.** <http://store.aota.org> 1217

Online Course

Clinician to Educator Series by Whitney Henderson, MOT, OTR/L. This course series is designed for clinicians who are interested in entering higher education as a faculty member, and for those who have recently made this transition and are interested in increasing their knowledge about this exciting area of practice. Courses will take you on a journey through the history of higher education in the United States to the history of OT education and ACOTE (R) Modules will introduce learning and instructional design theory and finally discuss classroom techniques needed to become a best practice educator. **Earn .15 AOTA CEU (1.88 NBCOT PDU/1.5 contact hour)**. **AOTA Members: \$34.95, Nonmembers: \$54.95.** <http://store.aota.org> **Module 1:** Order #OL5101; **Module 2:** Order #OL5102; **Module 3:** Order #OL5103; **Module 4:** Order #OL5104 1017

ATIA Webinars

AOTA is proud to collaborate with ATIA, the premier organization for assistive technology, to bring their high-quality AT webinars to the occupational therapy community. Participants earn from .1 AOTA CEU (1.25 NBCOT PDU/1 contact hours) per course. AOTA Members/Nonmembers: \$39-\$49/course. <http://store.aota.org> 0718

50 New Ways to Adapt the iPad for Students with Disabilities, Order #WA1810

Assessing Morgan Using the Communication Matrix Assessment, Order #WA1812

Comprehensive Assessment for Assistive Technology: The OCTOPUS Framework, Order #WA1708

Digital Literacy Supports: A UDL Perspective, Order #WA1711

Enhancing Switch Use and Switch Scanning for People with Physical Impairments: Part 1, Order #WA1705

Enhancing Switch Use and Switch Scanning for People with Physical Impairments: Part 2, Order #WA1706

Finding Resources for Andrew's Intervention on the Communication Matrix Community, Order #WA1808

Guiding Teamwork Using Education Tech Point Questions, Order #WA1804

Planning Communication Goals for Andrew and Creating a Custom Report, Order #WA1807

Productivity Is the Name of the Game: Android Apps for Working Smart, Order #WA1709

UDL and Math Tools, Order #1811

Using Technology to Provide Play Opportunities for Children with Disabilities, Order #WA1701

UDL as a Framework for Collaboration Between AT & IT, Order #WA1806

Online Course

Medication Related OASIS Items & Drug Regimen Review by Carol Siebert, OTD, OTR/L, FAOTA. The social and economic costs associated with medication nonadherence have prompted requirements and quality initiatives to promote medication adherence and to reduce the risk of medication-associated problems for the population receiving home health services. For home health agencies to meet these requirements, all skilled clinical professionals (registered nurses, occupational therapists, physical therapists, and speech language pathologists) have additional responsibilities to monitor medications and implement efforts to promote medication adherence. This short course addresses medication-related responsibilities for occupational therapists working in home healthcare. Earn .075 AOTA CEUs (.75 NBCOT PDU/.75 contact hour). Order #OL4945. AOTA Members: \$9.95, Nonmembers: \$14.95. <http://store.aota.org> 1017

Online Course

STAR Institute—Translation of Assessment Findings to Treatment: How Occupational Performance is Impacted by Underlying Sensory and Motor Abilities by Lucy Jane Miller, PhD, OTR, FAOTA and Sarah A. Schoen, PhD, OTR. This course is a recorded Pre-Conference Institute that was hosted by AOTA at the 2017 AOTA Annual Conference & Centennial Celebration. Earn .45 AOTA CEU (5.25 NBCOT PDUs/4.5 contact hours). Order #OL4974. AOTA Members: \$134, Nonmembers \$149. <http://store.aota.org> 0717

Online Course

SIS Quarterly Practice Connections 05 - Community Participation/Mobility. Community participation and mobility are often central to a person's autonomy and independence. This issue of the SIS Quarterly Practice Connections focuses on how occupational therapy facilitates community participation and mobility for clients, whether through driving to the store or appointments, attending school or work, or participating in other activities they have identified as meaningful. Earn .1 CEU (NBCOT PDU's 1.25/1 contact hour). Order #CESISC05, AOTA Members: \$20.99, Nonmembers: \$24.99. <http://store.aota.org> 0317

Online Course

Hand Rehabilitation: A Client-Centered and Occupation-Based Approach, 2nd Edition by Debbie Amini, EdD, OTR/L, FAOTA. AOTA's newly updated Hand Rehabilitation course familiarizes occupational therapy practitioners with a client-centered and occupation-based approach to intervention that is easily incorporated into the hand rehabilitation setting. Earn .15 AOTA CEUs (1.88 NBCOT PDU/1.5 contact hours). Order #OL4915. AOTA Members: \$29.99, Nonmembers: \$64.99. <http://store.aota.org> 0717

Online Course

Building Oncology Rehabilitation Programs Across the Age-Span and Care Continuum by Brent Brave-man, PhD, OTR/L, FAOTA. This course focuses on critical elements of building successful oncology rehabilitation programs. Strategies for scaling program development efforts including staff training and assessment/development

of competencies are provided to help practitioners set priorities for where to put their energies given limited time and resources. Earn .1 AOTA CEU (1.25 NBCOT PDU/1 contact hour). Order #OL56. AOTA Members: \$24.95, Nonmembers: \$39.95. <http://store.aota.org> 0717

Online Course

Early Detection of Neuromuscular Disorders in Early Intervention Settings (Module 4 of the Early Identification Series), by Roxanna M. Bendixen, PhD, OTR/L; Kris Barnekow, PhD, OTR/L; Series Editor: Kris Barnekow, PhD, OTR/L. This course provides an overview of neuromuscular disorders (NMD) in infants, toddlers and young children. These disorders vary greatly and manifest themselves through a combination of symptoms based on lower motor and sensory nerve dysfunction. Identification of the initial symptom(s) may be the key element in diagnostic success. Earn .15 CEU (NBCOT 1.88 PDU/1.5 contact hours). Order #OL4975. AOTA Members: \$65, Nonmembers: \$99, <http://store.aota.org> 0717

CE Article

Applying the Person-Environment-Occupation Model to Improve Dementia Care by Carin Wong, MS and Natalie E. Leland, PhD, OTR/L, BCG, FAOTA. The purpose of this article is to introduce the Person-Environment-Occupation (PEO) Model as a framework to improve dementia care in nursing homes and provide examples from literature that can be framed within the model. The interaction between the person, environment, and occupation is described to promote participation and provide quality care for residents with dementia. The PEO model can be used by occupational therapy practitioners to develop innovative approaches to dementia care and improve quality of life. Earn .1 AOTA CEU (1.25 NBCOT PDU/1 contact hour). Order #CEA0518. \$24.95, Nonmembers: \$34.95, <http://store.aota.org> 0718

Online Course

Emergent & Early Literacy: The Role of Occupational Therapy Practitioners in Schools by Gloria Frolek Clark, PhD, OTR/L, SCSS, BCP, FAOTA et al. Literacy is embedded within a child's daily living activities (writing, reading, listening, speaking). Without these basic means of communication, all aspects of occupational participation can be impacted. Occupational therapy practitioners have a critical role in literacy including supporting the development of literacy and providing professional development at a systems-level; evaluating a child's ability to participate in literacy activities; and providing intervention to enhance participation in literacy activities. This course will offer occupational therapy practitioners working with children the knowledge and skills on emergent and pre-literacy development that can be integrated into OT evaluations and interventions. Earn .15 AOTA CEU (1.88 NBCOT PDUs/1.5 contact hours). Order #OL4979. AOTA Members: \$34.95, Nonmembers: \$49.95, <http://store.aota.org> 0517

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Faculty



OCCUPATIONAL THERAPY — Department Chair
Vacancy #: 975023
Recruitment Range: Commensurate with Qualifications
Closing Date: Open Until Filled

The Occupational Therapy Department has five dedicated labs with ample equipment/supplies and is one of nine departments in the College of Allied Health Sciences (CAHS). Laupus Health Science Library is housed in the College and provides a librarian dedicated to supporting Allied Health Sciences students and faculty in scholarly work. All classrooms are technology-enhanced (e.g., SMART devices, video capture).

The College is within the Division of Health Sciences, along with medicine, nursing, and dentistry. It is adjacent to a 900-bed, level-1 trauma center which offers multiple opportunities to partner with their practitioners. East Carolina University, with 29,000 students, is located in Greenville, North Carolina (population of 89,000) and is 90 miles from Research Triangle (Raleigh, Durham, and Chapel Hill) or from the Crystal Coast.

Job Duties: The College of Allied Health Sciences at East Carolina University invites applications for the position of Chair of the Department of Occupational Therapy (full-time, 12-month appointment). The successful candidate will provide leadership for the Department of Occupational Therapy as it moves toward doctoral education and facilitate the scholarship and professional development of the occupational therapy faculty members. Also, the successful candidate will provide leadership to continuously improve the education and scholarship of occupational therapy students. The department has strong research and administrative support and excellent teaching facilities to educate the 26 outstanding students admitted each year.

The chair of the department reports directly to the Dean of the CAHS and is expected to advance the college's vision of state and national distinction in professional education, research, and service. The Chair is also responsible for meeting the requirements set forth by the Accreditation Council for Occupational Therapy Education (ACOTE). The candidate will be expected to engage in research, teaching, and service activities in accordance with departmental needs. The successful candidate will be eligible for appointment at the associate or full professor level.

Minimum Education/Experience: An earned academic Doctoral Degree. Eligible for Occupational Therapy licensure in North Carolina. Meet East Carolina University requirements for tenure to the associate/full professor status. Six years of full-time higher education experience, with a minimum of three years of full-time experience in an occupational therapy educational program. A record of substantial nationally-recognized scholarly productivity. Evidence of effective leadership characteristics and ability to make sound decisions relative to occupational therapy curriculum, professional development, strategic planning, and engaged service opportunities. Strong written, oral, and interpersonal skills. License or Certification Required by Statute or Regulation. Eligibility for NC OT license.

Preferred Experience, Skills, Training/Education: A collaborative leadership style with the ability to negotiate complex issues and maintain professional communication and relationships. An academic record of excellence in teaching, scholarship, and service. Experience with development and/or promotion of graduate studies. Experience with budgets and program administration. Knowledge of academic governance. Knowledge of contemporary issues in the field of occupational therapy. Understanding and experience of ACOTE accreditation procedures

Special Instructions to Applicant: Candidates should submit a cover letter, curriculum vitae, and a list of three references, including contact information, online.

Additional Instructions to Applicants: In order to be considered for this position, applicants must complete a candidate profile online via the PeopleAdmin system and submit any requested documents. Additionally, applicants that possess the preferred education and experience must also possess the minimum education/experience, if applicable.

Applications will be considered until position is filled. Please submit an online ECU application for vacancy # 975023 to ECU Human Resources at <http://jobs.ecu.edu>

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F-8522

Faculty

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F-8517

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Faculty



COLLEGE OF HEALTH SCIENCES

**CLINICAL ASSISTANT PROFESSOR/
ACADEMIC FIELDWORK COORDINATOR**

Occupational Therapy Department Mission

The faculty and staff of Occupational Therapy Department at the University of Michigan-Flint strive to be recognized dedicated leaders, scholars, and practitioners who are committed to learning, teaching, scholarship and service, to educate and mentor culturally competent, doctoral

prepared evidence-based practitioners to be visionaries and leaders in the profession of Occupational Therapy in local and global communities.

The start date for the OTD program is Fall 2019.

Clinical Assistant Professor/Academic Fieldwork Coordinator Duties

The Academic Fieldwork Coordinator is responsible primarily for coordinating the Level II clinical education and placements for the Occupational Therapy Doctoral Program. The position is a 12-month faculty position as a clinical track assistant professor. Responsibilities also include a reduced teaching load in the Occupational Therapy Doctorate Program to ensure that the needs of the fieldwork program are met.

Duties include but not limited to:

Academic Fieldwork Coordinator (.5 FTE)

- Ensures sufficient number of clinical fieldwork experiences in traditional, non-traditional, and emerging settings.
- Maintains documentation including: criteria and process for selecting fieldwork sites, memoranda of understanding, site objectives, site data, and site requirements.
- Works collaboratively with clinical sites to ensure established fieldwork objectives are mutually agreed upon between academic program, clinical site and student prior to the start of placement.
- Documents and verifies supervisors' credentials and licenses prior to the start of placements.

- Provides annual fieldwork education conferences/trainings to clinical supervisors including, but not limited to, program curriculum and supervision and teaching strategies to ensure coordination between didactic and clinical training.
- Maintains and documents communication between the academic fieldwork coordinator, student, and clinical supervisor to ensure proper supervision and student success.

Clinical Assistant Professor (5 FTE)

- Teaches courses in areas of expertise.
- Maintains personal scholarship.
- Participates in service activities to support the University, community and profession.

Required Qualifications

- Doctoral degree in occupational therapy or relevant discipline.
- Minimum of 3 years of full time post-licensure clinical practice.
- Minimum of 2 years of experience as an AFWE or FWE in occupational therapy or a minimum of 2 years of experience in teaching, curriculum development and administration in an occupational therapy education program.
- Licensed OT in Michigan or in a U.S. jurisdiction.
- Record of involvement in AOTA and state OT associations.

Background Screening

The University of Michigan conducts background checks on all job candidates upon acceptance of a contingent offer and may use a third party administrator to conduct background checks. Background checks will be performed in compliance with the Fair Credit Reporting Act.

Application Deadline

Priority deadline is September 14, 2018.

How to Apply: Interested candidates must **attach** a resume which includes a cover letter along with work and education history. Due to the faculty component of this position, also **mail** copies of transcripts to UM-Flint, College of Health Sciences, 303 E. Kearsley Street, Flint, MI 48502. Attention: Erica Sherman DPT, Committee Chair.

F-8519

Faculty



USC University of Southern California



Mid-Career/Senior Faculty Position at the **USC Chan Division of Occupational Science and Occupational Therapy** at the **Herman Ostrow School of Dentistry** University of Southern California

Associate or Full Professor

The USC Chan Division of Occupational Science and Occupational Therapy at the University of Southern California is seeking talented tenure eligible faculty to join our scholarly community at the rank of Full Professor or Associate Professor. The Chan Division (<http://chan.usc.edu>) and USC provide dynamic, diverse, innovative, and internationally recognized academic communities to cultivate transformative, interdisciplinary, and impactful scholarship. We have ongoing active, externally-funded, research programs and are strongly networked with clinical, social, and academic programs in the Los Angeles area. The Chan Division continues to thrive under new leadership and is implementing a new strategic plan that is grounded in our tripartite mission of leading innovation in research, education, and practice. We are seeking applicants who are poised to substantively contribute to our endeavors and benefit from the affordances of our enriching environments.

Candidates should demonstrate a strong track-record of funded research and scholarship, and a commitment to excellence in predoctoral, doctoral, and postdoctoral education. We are seeking established career scientists who thrive in contemporary interdisciplinary academic arenas, can lead innovative research teams, produce impactful findings, and facilitate knowledge translation to critical health or societal issues. Candidates should demonstrate their commitments and expertise related to mentorship, grantsmanship, collaborative/team science, and dissemination. Preference will be given to scholars who are recognized experts in neuroscience and sensory processing in autism, aging and Alzheimer's, health services research, mental health, spinal cord injury, neurorehabilitation, clinical intervention research, and health equity/social justice. Applicants must have a research doctoral degree (e.g., PhD, ScD) in an area applicable to occupational science or occupational therapy and be able to articulate existing/potential contributions to these fields. Substantive support packages are available. Applications accepted immediately and until positions are filled.

Applicants may apply on-line at

<https://usccareers.usc.edu/job/los-angeles/associate-or-full-professor-of-occupational-science-and-occupational-therapy-open-rank/1209/8740128>

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F-8516

Faculty

The University of Scranton Occupational Therapy Tenure-track, Open Rank Professor Position

The **Edward R. Leahy, Jr. Hall** is a state-of-the-art center for rehabilitation education housing the Occupational Therapy, Physical Therapy and Exercise Science programs. It features many opportunities for research and creative programming:

- 3 Pediatric Rehab labs with Snoezelen Room
- ADL apartment with simulated environments
- Low Vision & Developmental Visual labs
- Opportunities to collaborate with Physical Therapy & Exercise Science specialized labs including Motion Analysis & Body Composition Analysis
- On-site, pro-bono clinic
- Hand Rehab lab



The University of Scranton is, by tradition and choice, a Catholic and Jesuit university. The successful candidate will have an understanding of and commitment to the goals of Jesuit education. The University's mission statement may be found at www.scranton.edu/mission. The University is committed to developing a diverse faculty, staff, and student body and to modeling an inclusive campus community which values the expression of differences in ways that promote excellence in teaching, learning, personal development and institutional success.

The **Open Rank Professor position** is a 9-month position which begins January 2019 in an accredited 5 year Master of Science in Occupational Therapy program that is in transition to an OTD program. Qualified applicants must have an earned non-clinical doctorate (*e.g., PhD, EdD*) in occupational therapy or related field, ABD will be considered.

The successful candidate will demonstrate an area of clinical expertise, the ability to facilitate faculty mentored student research, and a record of teaching effectiveness. Leadership opportunities are available for candidates with strong qualifications. The candidate must be eligible for licensure as an occupational therapist in Pennsylvania.

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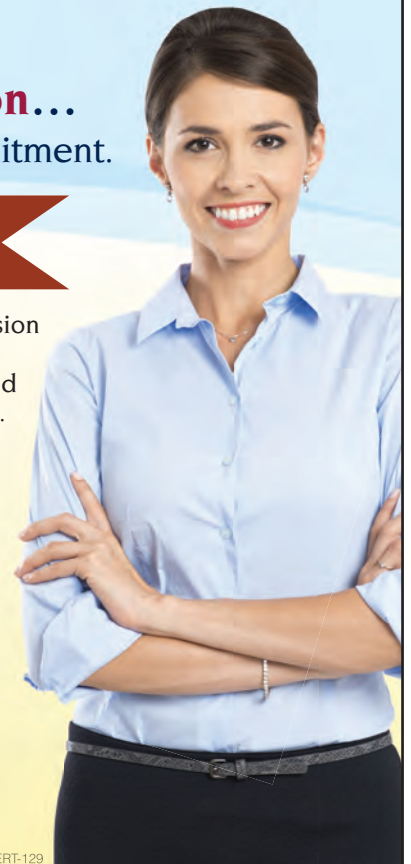
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Occupational Therapy and the Cancer Care Continuum: Adjusting Treatment Focuses

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ABSTRACT

Occupational therapy practitioners who work with cancer survivors must have a foundational understanding of how cancer and the associated treatments cause a changing trajectory of functional and cognitive abilities. This article begins with an overview of cancer and treatments, discusses associated precautions and side effects, and then describes how occupational therapy services must be tailored to the client needs and desires during three periods: (1) diagnosis and during active cancer treatments, (2) after cancer treatments and into extended survivorship, and (3) in the setting of advanced cancer. Recommended resources are included to assist clinicians in remaining current with their knowledge of oncology to apply to their occupational therapy practice.

LEARNING OBJECTIVES

After reading this article, you should be able to:

1. Determine an appropriate occupational therapy intervention approach based on where the client is on the cancer care continuum
2. Recognize that an individual's performance status is a key indicator used in oncology
3. Recognize physiological and psychosocial side effects associated with cancer and cancer treatments, and their effect on participation in occupations
4. Differentiate among leading oncology resources

INTRODUCTION

Cancer is a complex and chronic disease that affects millions of lives. In 2016, an estimated 15.5 million people were living in the United States with a history of cancer, and by January 1, 2026, estimates place this number at 20.3 million people (National Cancer Institute [NCI], 2018a). Unfortunately, cancer and the associated treatments have been shown to affect physical, cognitive, and emotional abilities across the cancer care continuum and lead to impaired functional performance and overall quality of life (Alfano et al., 2012; Silver et al., 2013).

Side effects such as pain, fatigue, and cognitive impairment may persist for months and years, even when disease free (Bender & Thelen, 2013; Glare et al., 2014; LaVoy et al., 2016; Silver et al., 2013).

Occupational therapy practitioners play a vital role in enhancing occupational participation by educating clients, families, and caregivers about anticipated changes in physical and cognitive functioning and how to manage these changes. This article provides a framework for understanding how occupational therapy services must be designed according to the needs of the client during three specific phases on the cancer care continuum: (1) diagnosis and during active treatments, (2) after cancer treatments into extended survivorship, and (3) in advanced cancer.

OVERVIEW

Defining Cancer

Cancer is the term used to describe a collection of diseases in which there is uncontrolled, abnormal growth of cells that have the ability to invade other tissues. As abnormal cells continue to divide uncontrollably, a neoplasm, also known as a tumor, is formed. However, not all neoplasms are cancerous. To be considered cancerous, the abnormal cells must also have the ability to invade other tissues. Neoplasms are classified as benign (non-cancerous), pre-malignant or carcinoma in situ, or malignant (cancerous).

CANCER TREATMENTS, PRECAUTIONS, AND SIDE EFFECTS

Over the past decades, there have been major advances in our understanding and medical management of cancer. The most common medical treatments for cancer are surgery, radiation therapy, and chemotherapy. Other treatments include hormone therapy, targeted therapy, and hematopoietic stem cell transplant.

Surgical Intervention

Surgical intervention, the most common intervention for solid tumors, may be indicated for various reasons: preventive, diagnostic and staging, curative, supportive, and palliative.

Precautions After Surgical Intervention

Precautions after surgical intervention depend on the location and extent of the surgery. In general, precautions include protecting the surgical wound(s), resting involved joint(s), and elevating and/or supporting involved area(s). If the digestive system is involved, there may be dietary precautions.

Potential Side Effects of Surgical Intervention

As with precautions, side effects of surgical intervention depend on the location and extent of surgery. Damage may occur to nerve and muscle tissues, potentially leading to weakness and sensory changes, or lingering complaints of pain. There may be loss of function, such as after an amputation. Physical changes in appearance may lead to negative psychological effects. There may be difficulty with scar tissue, including cording. If scarring occurs across a joint, there may be a loss of range of motion (American Cancer Society [ACS], 2017a; NCI, 2015d).

Radiation Therapy

Using high-energy radiation, the primary purpose of radiation therapy is to shrink tumors and kill cancer cells. There are three types of radiation therapy: external-beam, which is the most common; internal or brachytherapy; and systemic. External-beam radiation therapy includes 3-dimensional conformal radiation therapy, image-guided radiation therapy, and stereotactic radiosurgery. Internal radiation therapy, also known as brachytherapy, delivers radiation from sources placed inside the body. These sealed implants contain radioactive isotopes that may be low- or high-dose rate and may be temporary or permanent. Systemic radiation therapy is delivered through a radioactive substance that is swallowed or injected.

Precautions Associated With Radiation Therapy

External-beam radiation therapy only affects the body for a brief moment, and there is no radiation source in the body. Therefore, the person receiving external-beam radiation therapy cannot contaminate or transfer radiation to others and does not have precautions after treatment. This is not the case for internal and systemic radiation therapies.

Precautions for internal radiation may last a few days after treatment, whereas precautions for systemic radiation typically last longer. The length of time to follow precautions depends on the strength of dosing. In general, the person undergoing internal or systemic radiation therapy must maintain one arm's distance from other people who spend more than 2 hours in any 24-hour period near them; sleep alone; limit contact with infants, children, women who are pregnant, and pets; flush the toilet twice after each use; use separate utensils and towels; and have no kissing or sexual contact for at least 1 week.

Potential Side Effects of Radiation Therapy

Side effects of radiation therapy may occur during or in the days after treatment or develop months to years after treatment. Those occurring during treatment or in the days after are considered early adverse effects and include changes to radio-sensitive tissues, such as mucosa, stomach, small bowel, colon, vagina, and lymph nodes. Salivary glands may have permanent damage. Other early adverse effects include fatigue, which tends to worsen a couple of weeks after starting treatments, and red-

dening of the skin across the radiation sites, which may become permanent as darker pigmentation. Late adverse effects include radiation fibrosis, which is a change of normal tissue to scarred and restrictive tissue, and changes to organ functioning when radiation is across the chest (ACS, 2017b; Jaffray & Gospodarowicz, 2015; NCI, 2017).

Chemotherapy

Chemotherapy agents are cytotoxic, meaning they are toxic to living cells, and work by targeting rapidly growing and rapidly replicating cells. Cancer cells replicate more quickly than most normal cells, which is why chemotherapy is used in many cancer treatment plans. Unfortunately, chemotherapy agents do not distinguish cancer cells from other cells that rapidly grow and replicate, such as the lining of the stomach and intestines, hair follicle cells, and blood cells in the bone marrow, which contributes to side effects. Chemotherapy may be used as a curative, supportive, maintenance, or palliative treatment. It may be given orally, by injection (subcutaneous, intra-arterial, intravenous, or intraperitoneal), or topically. Patients may be admitted to a hospital to receive high-dose chemotherapy, but it is more common to receive chemotherapy in an outpatient clinic setting, and more recently through home health nursing services. It is also common for patients to have a peripherally inserted central catheter, a central line, or a port for the duration of the chemotherapy treatments.

Precautions Associated With Chemotherapy

As part of a systemic treatment, the toxins from chemotherapy agents are throughout and affect the whole body. Therefore, all blood and body fluids, including sweat and saliva, are toxic and must be avoided. General chemotherapy precautions last from the first dose through 48 hours after receiving the last dose and include: close the lid and flush the toilet twice every time; place soiled disposable undergarments in a sealed plastic bag; use paper towels to dry hands and discard the towels immediately; use separate towels, bed sheets, and other linens; and machine-wash soiled linens twice in hot water.

Along with causing toxins in all body fluids, high-dose and high-frequency chemotherapy causes drops in platelets, neutrophils, and red and white blood cell counts, leaving the person at a high risk for bleeding, infections, and complications. Therefore, along with general chemotherapy precautions, until blood cell counts are within a normal range for controlling bleeding and clotting, and for fighting infections, the individual must avoid injuries and exposure to pathogens, which includes bacteria, viruses, and fungi. These precautions remain until blood cell counts are within normal ranges. Always consult the client's oncologist for specific parameters and precautions. Occupational therapy practitioners are encouraged to use activity and task analyses to determine whether the environment or activity places the individual at an increased risk of exposure to pathogens or injury.

Potential Side Effects of Chemotherapy

Side effects of chemotherapy may begin immediately, which is an adverse reaction and an oncologic emergency, or they may develop in the days, weeks, months, or even years after treatment. Side effects may resolve in the weeks after treatment ends, or they may persist for months or years, even when the person is disease free. Multiple factors can lead to side effects, including the toxicity of the chemotherapy; effect on normal rapidly dividing cells; and changes to functioning of normal cells, which decreases the efficiency of organ systems. Numerous side effects are associated with chemotherapy, including nausea, emesis, constipation, diarrhea, taste changes, loss of appetite, skin sensitivities, loss of hair, fatigue, pancytopenia, cardiac changes, neuropathies, myopathies and weakness, pain, cognitive changes, and mood changes (ACS, n.d.; NCI, 2015a).

Hematopoietic Stem Cell Transplant (HSCT)

HSCT, also known as bone marrow transplant (BMT), is used to regenerate a new immune system. As advances continue to be made, there are more variations in the process of stem cell transplantation; however, the two overarching categories of HSCT are autologous (the person's own stem cells) and allogeneic (donor stem cells). For an autologous stem cell transplant, while the person is in remission from cancer, their stem cells are harvested from their blood or bone marrow and frozen. The person undergoes high-dose chemotherapy to eradicate their immune system and the previously harvested stem cells are then replaced. As with an autologous stem cell transplant, in an allogeneic stem cell transplant the person undergoes high-dose chemotherapy to eradicate their immune system, but then receives donor stem cells.

Precautions After HSCT

Precautions after an HSCT typically last 100 days for an autologous transplant and 1 year for an allogeneic transplant. The primary reason for precautions is that the individual has a newly forming, thus immature, immune system that is essentially less effective than a newborn child's. The primary focus of the precautions is to avoid exposure to pathogens, including bacteria, viruses, and fungi, as any exposure may quickly become life threatening. Occupational therapy practitioners are encouraged to use activity and task analysis to determine whether the environment or activity places the individual at an increased risk of exposure to pathogens or injury.

Potential Side Effects of HSCT

As the first part of undergoing an HSCT involves high-dose chemotherapy, side effects include those associated with chemotherapy. Additionally, a risk associated with allogeneic transplants is graft-versus-host disease (GVHD). This oncologic emergency occurs when the new immune system views the host (the person's organ systems and tissues) as foreign and attacks. The most common type of GVHD affects the

gastrointestinal system. Individuals who develop GVHD must be hospitalized to receive intensive medical support, which often includes immunosuppressive medications to prevent the immune system from continuing to attack the person, and glucocorticoids or corticosteroids to help decrease systemic inflammation. As expected, there is a high risk of loss of function for individuals with GVHD (Mohty & Mohty, 2011; NCI, 2015c).

Hormone Therapy

Hormone therapy was first used in the late 19th century and continues to be used today for breast and prostate cancers. Typically an adjuvant therapy, given along with or after the primary treatment, hormone therapy is usually administered in pill form or by injection. The purpose of hormone therapy is to decrease the risk of recurrence. There are no associated precautions with hormone therapies.

Potential Side Effects of Hormone Therapies

Side effects vary according to the hormone used. In general, side effects of hormone therapy for breast cancer may include hot flashes, night sweats, vaginal dryness, joint pain, bone loss, and osteoporosis. A less common but serious side effect is an increased risk of blood clots, especially for those with a history of deep vein thrombosis, pulmonary embolism, or stroke. Other less common but serious side effects include an increased risk of heart disease, dementia, or future breast cancer. In general, side effects of hormone therapy for prostate cancer include loss of libido, erectile dysfunction, hot flashes, weight gain, lower bone density, bone fractures, loss of muscle mass and physical strength, fatigue, mood swings and depression, memory problems, and gynecomastia. Some studies suggest an increased risk of heart disease, diabetes, and stroke (NCI, 2015b).

Targeted Therapies

Targeted therapies work by interfering with specific cancer cell molecules to prevent growth and spread and are considered cytostatic. This means the focus is to inhibit cell growth and division rather than kill the cells, as with the cytotoxic approach of chemotherapy. Targeted therapies may also be referred to as "precision medicine" or "molecularly targeted therapy." Most targeted therapies are either small-molecule drugs or monoclonal antibodies. Small-molecule drugs are small enough to enter the cell and block the processes that help cancer cells multiply and spread, and they are usually taken as pills. Monoclonal antibodies attach to the outside of the cancer cells and are usually injected. One of the primary difficulties with targeted therapies is that cancer cells can become resistant to them.

Precautions Associated With Targeted Therapies

As a newer treatment approach for cancer, much remains unknown. Current practice for people who are undergoing

targeted therapies is to be careful about exposing others to the drug itself or any body fluids, just as with chemotherapy and radiation.

Potential Side Effects of Targeted Therapies

Short-term physical side effects of targeted therapies most commonly include diarrhea and liver problems, but also hepatitis; high blood pressure; fatigue; skin changes, including hair depigmentation; problems with blood clotting; and difficulty with wound healing. Targeted therapies are a newer treatment approach, so long-term side effects are not known. Information on the effects of targeted therapies on cognition and mood has not yet been published (NCI, 2018b).

SPECIAL CONSIDERATIONS

The following special considerations apply across all cancer types and may be experienced by cancer survivors from diagnosis, throughout treatments, in advanced disease, and even when disease-free. Although not all cancer survivors will experience these side effects, occupational therapy practitioners should maintain awareness of their client's risks of these side effects and the potential effects on performing daily activities and roles, regardless of the point on the cancer care continuum.

Cardiotoxicity

Cardiotoxicity refers to damage of the heart muscle or electrophysiology from harmful chemicals used in cancer treatments. This damage may lead to cardiomyopathy, ranging from subclinical myocardial dysfunction to irreversible heart failure. Certain chemotherapies, including anthracyclines (used to treat many kinds of cancers), targeted therapy drugs, and radiation therapy across the chest region are known to cause cardiotoxicity. Cardiotoxicity may develop during the treatment, in the weeks after treatment, or months or years later, even if cancer-free or in remission. Signs and symptoms of cardiomyopathies include chest pain, increased fluid retention, shortness of breath, or fatigue that is disproportionate to recent activity (Fanous & Dillon, 2016).

Occupational therapy practitioners should immediately report the following changes to the oncologist or primary physician: increased fluid retention; swollen legs, feet, and/or ankles; complaints of feeling bloated; complaints of "coughing spells" or a chronic cough; trouble lying flat or complaints of shortness of breath; or new complaints of feeling overly tired or fatigued that is not consistent with recent activity. As cardiac myopathy occurring from cardiotoxicity is not reversible, medical treatments focus on managing the symptoms and reducing the likelihood of further cardiac decompensation. Note that deconditioning, common after inactivity such as during a hospitalization, may also present as a heart rate that is high in relationship to the activity being performed. Have an understanding of your client's recent cancer treatments and levels of activity, as well as the client's heart rates at rest and with standing activity.

Likewise, complaints of fatigue are common for cancer survivors, especially during cancer treatments. However, once cancer treatments are completed, it is reasonable to expect feelings of fatigue to resolve. It is not expected that an individual will have a relatively new complaint of fatigue at this point on the cancer care continuum. When in doubt, always consult with the oncologist.

Metastatic Bone Disease

Metastatic bone disease occurs when cancer that originates elsewhere in the body metastasizes, or spreads, to bone, causing notable levels of pain and pathological fractures. Other indications of metastatic bone disease include hypercalcemia and urinary or bowel incontinence. Although nearly all cancers have the ability to metastasize to bone, certain cancers are more likely, including lung, breast, prostate, kidney, and thyroid cancers. Metastatic bone lesions may occur in any bone but are more common in the spine (70% thoracic, 20% lumbar-sacral, 10% cervical), pelvis, and femur, followed by the humerus and ribs (Al-Qurainy & Collis, 2016; Lee et al., 2007; Sodji et al., 2017). Lesions that compromise vertebral bodies place the individual at high risk for metastatic spinal cord compression, which is an oncologic emergency, as spinal cord compression requires surgical intervention to be quickly alleviated and decrease the risk of permanent loss of function. Medical management of metastatic bone lesions may include radiation therapy directed to the lesion as a means of killing those cancerous cells and alleviating pain. Other treatments may include surgical intervention to stabilize bone, such as inserting an intramedullary rod or replacing a joint. Kyphoplasty involves filling a collapsed vertebra with a cement-like substance to restore height, alleviate pain, and improve stability.

Occupational therapy practitioners working with individuals who have a history of cancer, especially those cancers likely to metastasize to bone, must maintain awareness of new complaints of pain, especially when weight bearing, and report concerns immediately to the oncologist(s).

Psychosocial Disruption

Psychosocial disruption occurs when a disturbance or situation negatively affects the interrelationship of the individual and their social environment. If not addressed, this can progress to psychosocial impairment, which has been shown to have negative effects on health. For cancer survivors, the risk of psychosocial disruption begins at diagnosis as feelings of fear; anxiety; despair; sadness; and changes in personal beliefs, emotions, and moods may affect interactions with family and social supports (Aldaz et al., 2017; Institute of Medicine, 2008). Psychosocial well-being may be influenced by individual factors, including personal beliefs, emotions, and mood; or social factors, such as family structure, social supports, and work environment (Carmack et al., 2011).

Occupational therapy practitioners should recognize when changes in mood or interpersonal relationships are affecting the client's ability to engage in activities. Interventions may include modifying tasks and activities to achieve a balance in roles that facilitates engaging in daily activities.

Sexuality and Intimacy

Cancer survivors may experience changes that affect relationships and intimacy. Research has shown that upward of 59% of women and 79% of men reported cessation or decreased frequency of sex and intimacy after cancer and treatments (Hawkins et al., 2009). Underlying reasons include changes in the cancer survivor's own body image because of physical changes, such as scarring, undergoing a mastectomy, and skin changes after radiation. Hormonal changes may decrease libido or cause vaginal dryness or erectile dysfunction. There may be changes in their partner's image of their body. If the partner also provides physical caregiving, it may be difficult for the cancer survivor and partner to toggle between being caregiver and care receiver to being an intimate couple (Gilbert et al., 2013; Ussher et al., 2015).

Occupational therapy practitioners should address sexuality and intimacy with their clients. Education should include physical considerations, such as precautions after cancer treatments; positioning to avoid increasing symptom burdens of pain, fatigue, and shortness of breath; and protection of surgical areas and known areas of metastatic bone lesions.

PERFORMANCE STATUS

A person's performance status is one of the key factors used by oncologists to determine appropriate cancer treatment options, as an indicator of how well cancer treatments are tolerated, to decide whether to continue cancer treatments, and as an understanding of overall prognosis (National Comprehensive Cancer Network [NCCN], 2017). Performance status refers to how much time during waking hours the individual is up (out of bed, not laying on the couch or sedentary in a chair) and whether they are able to complete self-care and basic home management activities. Two widely used performance scales are the Eastern Cooperative Oncology Group, more commonly referred to as ECOG (Oken et al., 1982) and the Karnofsky Performance Scale (Clancey, 1995). Individuals who are inactive, disengaged from daily activity, or immobile are at increased risk of loss of function, as immobility leads to rapid physiological deterioration and drastically reduces the overall prognosis (Brandt, 2003; Olsen et al., 1967). Four interrelated areas that may lead to immobility and disengagement from daily activity are disease related, treatment related, lifestyle related, and individual factors. For example, primary or metastatic tumors or side effects of the cancer treatments may affect physical and cognitive abilities. Individuals who tend toward a sedentary lifestyle may have more difficulty engaging in daily activity, especially if they are experiencing cancer-related fatigue or other effects of

cancer and treatments. Individuals who have ineffective coping skills may have difficulty with changes related to cancer and treatments, and loss of function or roles, and they may become increasingly sedentary.

Regardless of the potential underlying reasons contributing to inactivity, the very state of being inactive becomes detrimental. Using intervention approaches to maintain, rehabilitate, and/or compensate, along with mitigating side effects, occupational therapy practitioners are able to facilitate daily engagement in physical activities to maintain optimized performance status and facilitate improved outcomes.

THERAPY FOCUS ALONG THE CANCER CARE CONTINUUM

The phrase *cancer care continuum* is used to describe a span from risk assessment and primary prevention through screening, detection, treatment, survivorship, and end-of-life care. This continuum is not a linear path over time, and the areas often overlap and may become cyclical, especially during treatment and survivorship. For example, an individual may have periods of remission or no evidence of disease, and then have recurrence and begin again with treatments; or many years after cancer treatments ended, they may have a secondary cancer caused by the original cancer treatments. The trajectory of recovery after cancer and treatments becomes more complex when the cancer care continuum loops with screening, detection, treatment, and survivorship.

Occupational Therapy Alongside Active Cancer Treatments

When working with individuals who are actively undergoing cancer treatments, the primary focus is to maintain optimal functional abilities, within physiological limits and with consideration for precautions. Although it is not unusual for individuals to have independent abilities at the time of diagnosis and even during initial cancer treatments, medical stability should not be assumed at this time, and there is a very real risk of losing independence related to the cancer itself, the cancer treatments, the client's lifestyle, and other individual factors. Occupational therapy sessions should include education on the importance of engaging in daily physical activities, at a temporarily modified level if needed because of side effects. Education should be incorporated to help the client understand precautions and anticipate potential side effects that are associated with the cancer treatments.

Case Study: Shanki

Shanki, a 52-year old woman, recently underwent surgical resection for stage III colon cancer and was scheduled for radiation therapy. While undergoing cancer treatments, Shanki was at risk of declining functional and cognitive abilities related to several factors, including the cancer itself, the side effects of cancer treatments, and how active she was each day. The overall focus of therapy while Shanki was undergoing cancer treatments was to maintain optimal functioning, which included educating

Shanki on how to remain active each day within her physiological tolerance, along with how and when to incorporate principles of energy conservation. Occupational therapy sessions also included education on anticipated changes in function, and precautions associated with cancer treatments. Therapists were able to help monitor and keep the oncology team informed of overall activity engagement and physiological response.

Occupational Therapy Post-Cancer Treatments and in Extended Survivorship

In the months after cancer treatments end, the expectation is for symptoms to begin resolving as hematologic and metabolic systems normalize, and there is a greater expectation of medical stability. It is reasonable to expect lowering levels of fatigue and pain, improved cognitive functioning, and improved physiological tolerance of activities. The occupational therapy focus should be rehabilitative, with goals of maximizing physical and cognitive abilities and returning to pre-cancer levels of function, activities, and roles, including return to work. As cancer is a chronic condition, education should be included to encourage self-management.

Case Study: Katherine

Katherine was a 48 year-old woman with a history of leukemia. After induction and consolidation chemotherapy cycles, she achieved remission and underwent an HSCT, also known as a BMT, with successful results, as recent testing showed no evidence of disease. During a routine BMT clinic appointment, Katherine reported that she was able to independently complete her daily routine but still had fatigue and felt forgetful. She told the team, "I miss being able to do things like before cancer, but at least I'm alive! I beat cancer!" The team's recommendations included a referral for outpatient occupational therapy services, as Katherine was not able to complete activities at her premorbid abilities. The overall focus of therapy interventions at this point on the cancer care continuum (post-cancer treatments and extended survivorship) was rehabilitating to maximum physical and cognitive abilities, mitigating lingering side effects, and educating on self-management, as cancer is considered a chronic disease, even years after treatment and/or when there is no evidence of disease. The occupational therapy evaluation included gathering an understanding of Katherine's roles and activities before being diagnosed with cancer, along with her current roles and activities, to help Katherine determine whether changes in her activities and roles since having cancer and undergoing treatments were changes she wished to keep, or whether she wanted to return to her prior activities and roles.

Occupational Therapy and Advanced Cancer

Advanced cancer refers to cancer that cannot be cured or controlled with treatment, although it may also be used to refer to metastatic or Stage IV cancer. In advanced cancer that is not

likely to be cured, the individual may still undergo treatments with a goal of reducing the cancer burden, such as a surgical resection for tumor debulking. Cancer treatments may also be used as a palliative approach to reduce symptom burden and improve quality of life, such as radiation therapy for metastatic bone lesions to alleviate pain. The focus of occupational therapy for individuals with advanced cancer is compensatory to facilitate engagement in meaningful activities and mitigate symptoms such as fatigue, breathlessness, and pain. Interventions should include education on how to efficiently complete activities in modified environments, using principles of energy conservation and task simplification. Training should be included for family members and caregivers on how to safely provide physical assist as needed.

Case Study: William

William was a 63-year old man with advanced stage lung cancer. Recent imaging showed metastatic bone lesions at multiple vertebral levels, his right humerus, and his left proximal femur. William had been admitted to the hospital's palliative care unit because of intractable pain. His current medical treatment plan included radiation therapy treatment with a goal of decreasing pain. As the cancer continued to progress through treatments, William and his oncology team decided to focus on managing symptoms. The overall focus of therapy in the setting of advanced disease is to maximize the cancer survivor's ability to engage in meaningful activities through compensatory strategies, grading of tasks and activities, and training family or caregivers in how to assist. Occupational therapy practitioners should also provide education on how to balance being active within physiological tolerance, and facilitate understanding that physiological tolerance may change from day to day. William benefited from learning how to complete activities without increasing pain, modifying how he moved, and how he placed weight through his right arm and left leg and positioned his back. He also learned the importance of notifying his oncology team of any new or increased areas of pain, as this could indicate additional metastatic disease.

Oncology Resources

As we continue to gain a greater understanding of cancer and make advances in treatment, the anticipated side effects and the trajectory of recovery will likely change. Occupational therapy practitioners must remain current with their knowledge of cancer and the treatments to effectively modify therapy treatment approaches. The following are recognized as leading resources in cancer care.

NCI

The NCI, established in 1937, is a part of the National Institutes of Health. NCI serves as the federal government's principal agency for cancer research and training. In coordination with the National Cancer Program, NCI conducts and supports

research, training, health information dissemination, and other programs related to cause, diagnosis, prevention, treatment, rehabilitation, and continuing care of cancer patients and their families. For more information, visit www.cancer.gov.

NCCN

The NCCN is a not-for-profit alliance composed of 27 leading cancer centers. The mission of NCCN is “to improve the quality, effectiveness, and efficiency of cancer care so that patients can live better lives.” The NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines®) are widely accepted and used as the standard of care in oncology. The intent is to assist all individuals involved with cancer care in the decision-making process. There are many different sets of guidelines specific to various cancers. These guidelines are the most detailed and most frequently updated clinical practice guidelines in any area of medicine and include algorithms for the medical management of cancer, including initial and ongoing testing, imaging, treatment timings, and dosages. Although this information is not directly applicable to occupational therapy practitioners, it provides insight and understanding of the medical treatments clients may undergo. The *NCCN Guidelines for Survivorship* (Version 3; 2017) are applicable to occupational therapy practice. These guidelines provide the most current, evidence-based information to address general survivorship principles and late and long-term psychosocial and physical problems. Topics include cognitive function, fatigue, lymphedema, pain, sexual function, and sleep disorders. These guidelines are free to use, and occupational therapy practitioners with clients who have been diagnosed with cancer should use these guidelines as another resource to remain current with evidence-based practice in oncology. For more information, visit www.nccn.org.

World Health Organization

The World Health Organization (WHO) Cancer division sets norms and standards for cancer control, including developing evidence-based prevention, early diagnosis, screening, treatment, and palliative care programs. WHO Cancer promotes monitoring and evaluation through registries and research specific to the regional disease burden and available resources. For more information, visit www.who.int/cancer/en/.

Additionally within the WHO is the International Agency for Research on Cancer. This specialized cancer agency promotes international collaboration in cancer research and provides expertise in conducting international research across countries and organizations. For more information, visit www.iarc.fr.

CONCLUSION

Cancer is a complex and chronic disease that affects millions of lives. Cancer and the associated treatments affect physical, cognitive, and emotional abilities, leading to impaired functional

performance and decreased overall quality of life. Many survivors experience side effects such as pain, fatigue, and cognitive impairment that may persist for months and years, even when they are disease free. Occupational therapy practitioners play a vital role by optimizing physical and cognitive functioning and educating clients, family, and caregivers on anticipated changes and how to manage them. The key is to consider at what point the client is on the cancer care continuum. Primarily, are they actively receiving cancer treatments or have they just completed treatments? Are they in extended survivorship? Do they have advanced disease? Knowing this information provides a framework for understanding how to shift the theoretical framework of the occupational therapy interventions (rehabilitate, compensate, or mitigate side effects and maintain function) to optimize the client's ability to engage in meaningful activities and roles each day. 📄

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How to Apply for Continuing Education Credit

- A. To get pricing information and to register to take the exam online for the article **Occupational Therapy and the Cancer Care Continuum: Adjusting Treatment Focuses**, go to <http://store.aota.org>, or call toll-free 800-729-2682.
- B. Once registered and payment received, you will receive instant email confirmation.
- C. Answer the questions to the final exam found on pages CE-8–CE-10 by **September 30, 2020**.
- D. On successful completion of the exam (a score of 75% or more), you will immediately receive your printable certificate.

Final Exam

Article Code CEA0918

Occupational Therapy and the Cancer Care Continuum: Adjusting Treatment Focuses

September 2018

To receive CE credit, exam must be completed by September 30, 2020

Learning Level: Introductory

Target Audience: Occupational Therapists and Occupational Therapy Assistants

Content Focus: Client Factors, Activity Demands; Occupational Therapy Interventions

1. Katrina has been practicing in oncology for the past 4 years. Is it important for Katrina to refer to oncology resources such as the National Cancer Institute and the National Comprehensive Cancer Network (NCCN)?
 - A. Yes, these resources are for health care practitioners who are novice or early career.
 - B. Yes, she does not yet have 5 years of experience as an oncology therapist.
 - C. Yes, advances continue to be made in cancer care.
 - D. No, she has enough experience in oncology.

2. **You work in oncology, but not at an NCCN member institution. Should you refer to the NCCN Clinical Practice Guidelines?**
 - A. Yes, these are the recognized standard of clinical practice in cancer care.
 - B. Yes, you may work for an NCCN member institution in the future.
 - C. No, these guidelines are intended for physicians in oncology.
 - D. No, because you do not work at one of the NCCN member institutions.
3. **In general, what are potential side effects of surgery?**
 - A. Decreased scar tissue, damage to nearby nerve or muscle tissue, and transient pain
 - B. Lingering pain, increased nerve or muscle tissue, and difficulty with scar tissue
 - C. Difficulty with scar tissue, transient pain, and damage to nearby nerve or muscle tissue
 - D. Damage to nearby nerve or muscle tissue, lingering pain, and difficulty with scar tissue
4. **In general, what are potential early adverse effects after external-beam radiation therapy?**
 - A. Lingering complaints of pain, difficulty with scar tissue, and loss of function
 - B. Reddened skin, changes to radiosensitive tissues, and fatigue
 - C. Difficulty with scar tissue, lightened skin, and changes to muscle tissue
 - D. Changes to radiosensitive tissues, fatigue, and changes to muscle tissue
5. **What are chemotherapy precautions and the length of time to follow precautions?**
 - A. Protect from all body fluids, including sweat, saliva, urine, and vomit for 30 days after the first chemotherapy dose.
 - B. Protect from all body fluids, including sweat, saliva, urine, and vomit for 48 hours after the last chemotherapy dose.
 - C. Use universal precautions, with emphasis on washing hands before and after therapy sessions until blood cell counts have returned to within normal ranges.
 - D. Use universal precautions, with emphasis on washing hands before and after therapy sessions for 48 hours after the last chemotherapy dose.
6. **Seragi, a 62-year-old man, has been disease free since an autologous stem cell transplant 142 days ago. During today's session Seragi states, "Wow, that's different. Now I just get real tired real fast and I need to sit down." What might Seragi be experiencing?**
 - A. Cancer-related fatigue
 - B. Fatigue
 - C. Symptoms of malignant pericardial effusion
 - D. Symptoms related to the effects of cardiotoxicity
7. **Amma is a 55-year-old woman with metastatic breast cancer who's undergone a mastectomy and had radiation therapy. Today she informed you that she's really had a lot of pain in her right hip and cannot seem to get comfortable. She's even had trouble lying down to rest or sleep. What might Amma be experiencing?**
 - A. She may have psychosocial disruption that is decreasing her ability to sleep.
 - B. She may have done too much activity.
 - C. She may have metastatic bone disease.
 - D. She may be experiencing late adverse effects of radiation therapy.
8. **Catherine, a 41-year-old mother of two, was diagnosed with breast cancer and underwent several months of treatments. Even though she has no evidence of disease, she is very fatigued and does not know whether she can return to work. She is thankful for her husband's continuing support. When does the risk of psychosocial disruption begin for Catherine?**
 - A. It begins if she is unable to return to work.
 - B. The risk began when she was diagnosed with cancer.
 - C. She is not at risk because her husband has been supportive.
 - D. It begins if imaging shows recurrence of disease.
9. **Saurabh, a 53 year-old man, was previously treated for Stage IIIB non-small cell lung cancer. Today Saurabh learned from his oncologist that imaging showed new lesions. What is a key factor the oncologist will use in determining whether or not Saurabh should undergo more cancer treatments?**
 - A. Is Saurabh able to extend his medical leave of absence from work?
 - B. Does Saurabh have a good social support system?
 - C. Has Saurabh paid the previous medical bills or is he following a payment plan?
 - D. What is Saurabh's performance status?

10. Katrina recently began cancer treatments for ovarian cancer. Her oncologist reviewed with her the plans for upcoming treatments, including radiation therapy, and also referred her to oncology rehabilitation. Recognizing Katrina is actively undergoing cancer treatments, what is the overall focus of occupational therapy services?

- A. To maximize her physical strength and tolerance for activity
- B. To facilitate her ability to maintain optimal functioning within her physiological tolerance and with considerations for precautions
- C. To evaluate her current abilities and then hold therapy until after cancer treatments have been completed
- D. To educate her on resting and reducing activities during cancer treatments

11. Vincent, a 47-year-old man with a history of Stage III lung cancer, completed the final session of radiation therapy last month. Recognizing that he has completed cancer treatments and has no evidence of disease, what is the overall focus of occupational therapy services?

- A. To maximize his physical and cognitive abilities with a goal of functioning in roles and routines at his pre-cancer level
- B. To evaluate his current abilities as a new baseline of function because he is post-cancer treatments
- C. To compensate for changes in his function related to cancer and cancer treatments
- D. To facilitate his ability to maintain his current functional abilities

12. LaTisha, a 58-year-old woman with breast cancer, now has multiple metastatic lesions to bone and lung. What is the overall focus of occupational therapy?

- A. Help occupy her time so that her caregiver has a reprieve
- B. Maximize her physical and cognitive abilities
- C. Compensate for loss of function and mitigate symptom burden during activities
- D. Evaluate her current functional abilities for performance status

Now that you have selected your answers, you are only one step away from earning your CE credit.



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Growing Independence

Richard Steenson

Clara M. welcomes the start of a sun-kissed Hendersonville, North Carolina, day by reminiscing about her youth. She eagerly propels her chair in the welcoming Life Care Centers of America’s new therapeutic vegetable, herb, and sensory garden. Song birds greet her with their calls as Ms. Clara gleefully shares, “Instead of computers and television, father would teach us kids to identify birds through sound and song.” In this garden, purposeful activity, self-worth, and occupational performance serve as catalysts to recovery from a dispiriting femur spiral fracture.

With a little help from a friend, Life Care Center’s horticulture management program recently found light. Eagle Scout candidate Mason Gempe of Hendersonville, North Carolina, Boy Scout Troop 61, organized and assisted in developing three raised garden beds.

“The most meaningful moment was the actual act of putting the boxes together,” Mason reported. “I enjoyed the building and painting and found it relaxing to put something together with wood. This said, I think it will be much more meaningful to actually see them put to use. There is no greater feeling than that of seeing something you created help someone who needed said help.” As behavior analyst Steve Maraboli once shared, “A kind gesture can reach a wound that only compassion can heal.”

“I am not sitting until this last plant is in the dirt!”

It appears young Mason has chosen that path.

In my work at the center with clients like Ms. Clara, I can see the how purposeful connections between biophilia, occupation, socialization, and universal design improve health and promote recovery. Just 3 days before gardening, Ms. Clara demonstrated the ability to dynamically sustain 1 minute and 30 seconds of standing tolerance. Later, outdoors and engaged in meaningful activity with newly formed motives, she said, “I am not sitting until this last plant is in the dirt!”

Through this meaningful task, Ms. Clara sustained 6 minutes of dynamic

standing with functional reach, focused more on achieving a task, and felt less inhibited by the discomfort and functional limitations of her injury. Through her increased self-worth, standing tolerance, functional reach, and standing balance, she advanced her ability and safety to, among other ADLs, retrieve clothing and complete total body dressing, thus allowing her more independence with her daily routine.

The progress of Ms. Clara and other program participants demonstrates the prosperity of therapeutic gardening. On this campus, our program of “Growing Independence”—blossoming from seed to root, sprout to fruit—helps propel the therapeutic progress of our clients.

Goal met. 🌱

Richard Steenson, MOT, OTR/L, is an Occupational Therapist based in the Asheville, North Carolina, area.

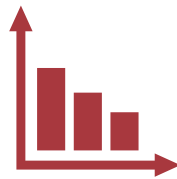


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