



KESWICK

wise & well

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The LeadingAge Center for Aging Services Technologies (CAST) is focused on accelerating the development, evaluation and adoption of emerging technologies that will transform the aging experience. As an international coalition of more than 400 technology companies, aging-services organizations, businesses, research universities and government representatives, CAST works under the auspices of LeadingAge, an association of 6,000 not-for-profit organizations dedicated to expanding the world of possibilities for aging.

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Timed Up and Go: Reducing Fall-Risk and Improving Ambulation with Kinesis and the QTUG™ Assessment Tool

Categories

Prolonging/Supporting/Regaining Independence

Improving Function:

- Improving Ambulation, Gait, Balance, and Reducing Fall

Risk Improving Quality of Life/Satisfaction with Care

Reducing Healthcare Utilization, including Hospitalization and Hospital Readmissions Cost of Care and Return on Investment (ROI) to:

- Providers;
- Payers; or
- Consumers

Organization Name

Keswick Community Health, Inc.

Organization Type

Home and Community-Based Services

Other Partners

Long-Term Care, SNF, Affordable Housing Communities, Places of Worship, Community/Senior Centers

Organization Description

Keswick Community Health, Inc. is an outgrowth of Keswick Multi-Care Center, Inc., a provider organization with over 135 years of expertise serving the older populations of Baltimore City and beyond. From its core service line of long-term care, Keswick has expanded into sub-acute rehab/skilled nursing and a variety of community-based services including the opening of the Wise & Well Center for Healthy Living in 2018. Wise & Well focuses on engagement, education, and other community health initiatives to help older adults improve their quality of life and overall well-being through the Center and at sites across the Baltimore area.

In addition to Wise & Well, Keswick Community Health offers home repairs/modification and service coordination through Housing Upgrades to Benefit Seniors (HUBS) and Communities for LifeSM and Home & Healthy®, a transition care management service. Through these service lines, Keswick Community Health works to decrease unnecessary healthcare utilization by engaging older people in their lives and health, utilizing evidence-based practices, and eliminating barriers for older people to implement improvements towards positive change.

Project Description

It is well-documented that falling is one of the biggest health risks for older adults. Among individuals over the age of 65, falling is the leading cause of injury (Jin 2018). In response, Keswick Community Health offers the Kinesis assessment tool for fall prevention as one of its core programs. The Kinesis QTUG™ uses body-worn sensors placed below the knee on each leg as the patient performs the Timed Up and Go (TUG) test. The provider (non-clinical) administers the test using software on a handheld tablet; the software platform receives data in real-time from the sensors on the patient's test performance. The software provides feedback on falls risk, frailty, and mobility as well as information on clinical risk factors obtained from a short survey administered before the test. Kinesis QTUG™ provides Keswick an objective tool for identifying older adults at risk of falling and a method for objective assessment of mobility, frailty, and falls risk. It provides automatic analysis of patient data against average values for age and gender with color coding to indicate deviations from normal ranges. Keswick Community Health uses this data to more accurately assess an individual's fall-risk and provide that valuable feedback to the older adult. In addition, personalized recommendations are made for the older adult to take steps to mitigate risk in the future.

Functional Assessment and Activity Monitoring System Type from the Assessed Patient/Resident/Client/User's Perspective

From the user perspective, the Kinesis QTUG™ tool consists of wearable sensors mounted on the legs using reusable straps, which the patient wears for the duration of the test (typically just a few minutes).

Functional Assessment and Activity Monitoring Single/Multi-User Type

The Kinesis QTUG™ tool is a multi-user solution with the capacity to distinguish between users.

Business Model

Keswick Community Health, Inc. and its services including the Kinesis QTUG™ screening are funded by Keswick in its pursuit of innovative, sustainable solutions and services to support older people to live well, age well, and be well. The organization receives support from the Keswick Foundation. Kinesis QTUG™ fits with Keswick Community Health's evolving geriatric population health model, essentially operationalizing the social determinants of health including behavior change in later years, with an expectation that such endeavors are of increasing value to risk holders, payers and providers.

In 2015, the U.S. health care system spent an estimated \$50B on falls and related medical episodes of care (Florence 2018); however, research has indicated that falls can be reduced by 30-50% through targeted interventions (Gillespie 2012.) Kinesis QTUG™ acts as that specific intervention for Keswick's Wise & Well members. By quantifying fall risk, there is a new opportunity to engage the older adult, capture his or her attention, and prompt motivation, activating the individual to take positive steps to prevent falls by improving on an initial baseline score. This quantification of fall risk is a game-changer given the prevalence of denial related to falls among older adults—an area where fear can be psychologically paralyzing and physically detrimental. The subsequent empowerment and improved self-management creates value for the risk-holder, payer and provider.

The tool is delivered via non-clinical providers and the product itself is low-cost. The solution has application in the community-based provider realm via contracting with clinical providers and payers. Keswick Community Health currently uses the QTUG™ experience as an amenity of Wise & Well and Community for LifeSM membership, as well as in outreach events in the larger community. The use of the solution is expanding to Housing Upgrades to Benefit Seniors (HUBS) a program serving older adult, low-income homeowners.

The solution will also be extended to use in the home as part of the transition from sub-acute care and would also apply to the sub-acute and long-term care settings in the future. Overall, the use of the technology contributes to Keswick's business development work with payers and providers to lead to more comprehensive care coordination contracts.

Implementation Approach

The Wise & Well Center at Keswick offers fall-risk assessment through the Kinesis QTUG™ tool for all new members as part of their orientation process, including members of the Communities for LifeSM program. The screening is offered regularly, twice per month, and can also be scheduled by appointment. The screening is also conducted as an element of the screening process for a member to gain access to the fitness classes and strength/cardio equipment offered in the Wise & Well Center. The test is conducted at both the beginning and end of the Wise & Well evidence-based classes in the fall prevention realm: Walk With Ease and Stepping On. In addition, before the start of each new semester of classes, Wise & Well offers "Demo Dayz" on which any individual—member or not—can come in and receive the screening.

To further improve access to the intervention for individuals who could benefit, Wise & Well also offers the QTUG™ screening at senior centers, places of worship and large senior apartment communities in the surrounding area. The tests are administered by trained Wise & Well team members who administer the screening, review the results with the older adult, and determine next steps to help ensure the individual minimizes his or her personal risk of falling as much as possible.

Outcomes

Improving Function (Improving Ambulation, Gait, Balance, and Reducing Fall Risk)

The intervention has been very popular and effective in mitigating patient denial and empowering individuals to take action; individuals who participate in the screening receive their scores and typically ask the same question, "What can I do to improve?" This question inherently holds the assumption that something can be done and that the older person recognizes that the ball is in his or her court. This is of great value to the person's future quality of life and the nature of his or her potential health care utilization.

On the provider side, the tool provides some concrete data by which patients can be referred to strength and balance or other classes that best suits their needs, rather than more variable forms of diagnosis and referral.

To date, approximately 120 screenings on 86 patients have taken place in multiple locations. Keswick Community Health is able to utilize these key metrics of QTUG™ mobility score, frailty score, and fall-risk estimate to inform their person-centered view of each member, and the population served as a whole.

In the most recent Stepping On class, one patient received a combined falls risk estimate of 83.8% in the pre-class Kinesis QTUG™ screening. The member attended all 7 sessions of the Stepping On program and showed significant improvement in the post-class assessment. In the subsequent Kinesis QTUG™ test, his combined falls risk estimate dropped to 49.9%, or an improvement of over 30 percentage points.

Challenges and Pitfalls to Avoid

As with any new technology, there is a learning curve in training new providers to administer the QTUG™ tool properly. The initial in-house training, supported by Kinesis training materials, allows providers to receive the necessary training to administer the test efficiently and effectively. Another issue is one that comes with the territory in being a first-mover on new initiatives: since very few other providers are performing a service like this one, there is a lack of comparative data on the fall risk estimate; however, both the mobility score and the frailty estimate can be used against other sources of TUG and frailty scores, which is very helpful. The increasing adoption of Kinesis QTUG™—combined with the release of their new analytics dashboard—will allow for improved benchmarking at a community and national level.

Lessons Learned/Advice to Share with Others

Patients really value initiatives that quantify an important element of their health and provide clear designations for areas-of-concern, strengths, etc. Falling is a major risk for older adults, but the question of knowing exactly how at-risk one is can be a difficult one to answer for patients. Keswick's use of the Kinesis QTUG™ assessment tool helps fill that void and offers patients and providers precise information on level of risk and specific areas for improvement. Keeping older adults engaged and at the center of their care is something Keswick strives for across all its services. This aligns well with the Kinesis mission to reduce falls by 50% through the "power of prevention."

References

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