MAXIMIZING WELLNESS OUTCOMES FOR THE FRAIL AGING POPULATION: UNDERSTANDING FRAILTY INDEXING, GERIATRIC INTERPRETATION AND PATIENT PRIORITIES

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ABSTRACT

Premise: In alignment with others' findings, and with further evidence from work with 2000+ frail aging patients, maximum wellness and health care intervention outcomes are realized when care planning and execution track and consider frailty progression, and when patient values and desires are honored and prioritized in alignment with the Social Determinants of Health.

Proof of Concept: The Frailty Workgroup (Mesa County, Colorado) brings together primary care physicians, eldercare providers and a technology-driven provider network to broadly and consistently utilize a frailty index and geriatric interpretation to develop and execute patient care plans aligned with indicators for quality of life outcomes.

Conclusion: A principled approach to patient care for the frail aging population – safe, simple and respectful – will, first and foremost, consider 'what matters most' to the patient, then build a care plan and team in pursuit of the 'right' health and wellness outcomes. Effective care delivery will further comprise data-driven decision making, care ethics, and robust patient involvement and interface, ultimately resulting in successful achievement of the Quadruple Aim: Improved population outcomes, better patient experience, lower costs, and improved provider experience.

PROJECT APPROACH

Based on decades of work in the primary/family health care delivery setting, and recently culminating in a collaborative project funded through the Next Fifty Initiative (Denver, CO), the Mesa County, CO Frailty Workgroup (www.frailtyworkgroup.org) has undertaken an effort to capture frailty assessments along the continuum of care and share these with care providers via the regional health information exchange, ultimately effecting long-term outcomes for frail patients. The project endeavors to use frailty assessment/indexing and geriatric interpretation in decision-making for and implementation of:

- Risk-based advanced care planning; risk-based advising of patients prior to elective surgery.
- Supportive care strategies.
- Adjusted disease-state management strategies that reduce pursuit of procedures that are futile or doomed to fail due to frailty.
- Patient and caregiver/family preparation for end-of-life care.
- Professional caregiver support that is safe, simple and respectful.

The project has been successful in collecting mandated Medicare data sets from a skilled nursing and long-term care facility (Minimum Data Set, or MDS) and a home health agency (Outcome and Information Assessment, or OASIS) and via a point-of-care assessment tool, based on the Comprehensive Geriatric Assessment (CGA). This data is matched to the Master Patient Index at Quality Health Network (or QHN, the regional health information exchange's (Quality Health Network or QHN), allowing for precision of patient and provider identity.

The software vendor (Patient Pattern) then takes the captured data and calculates a risk score, which has been validated by population outcomes. This score, and a risked-based geriatric consultation, are then routed to QHN and into the pilot practice's EHR, both as discrete data and in the form of a pdf file with information on the consultation, recommendations and advice for patients and families.

This data capture and distribution/utilization process is unique to the Frailty Workgroup approach, which also has sought to answer the following process/workflow questions:

1. How do healthcare professionals in clinics and long-term rehabilitation and care facilities use frailty data to support care of elderly patients?
2. What are the barriers and opportunities that healthcare professionals in clinics and long-term rehabilitation and care facilities face when implementing a frailty indexing and care plan program for elderly patients?
3. What are the barriers and opportunities when adding frailty data to existing data networks and health-related data sets?
4. What kind of model of frailty indexing and associated care plans for elderly can be created through the involvement of primary care physicians, specialty physicians, and long-term care and rehabilitation facilities?

Providing an innovation model that can serve as outline for a broader care compact, the Frailty Workgroup seeks to gradually supersede the prevailing disease-state management approach by advocating for continuity of care that engages true risk assessment and effective communications as individual' degree of frailty emerges and progresses.

Frailty Workgroup project partners include:

- Colorado Mesa University
- Next Fifty Initiative
- Summit West Care, Home Health
- Larchwood Inns, Post-Acute Rehabilitation Center (PARC)
- Western Colorado Physicians Group
- Primary Care Partners, Information Technology
- Quality Health Network
- Patient Pattern

Members of the Frailty Workgroup's Strategic Advisory body include:

- Kathleen Hall RN, APN, Colorado Mesa University
- Andrea Nederveld MD, SNOWCAP, University of Colorado
- Julie Riesken, Director, Cross Disabilities Coalition for Colorado
- Amy Mohler MD, Medical Director, Larchwood Inns
- Charlene Raum RN, CEO, Summit West Care Home Health
- Gary Knaus MD, Carbondale Family Medicine
- Mark Luker MD, Orthopedist, Rocky Mountain Orthopedics
- Patricia Lapkin MD, Geriatric Psychiatrist, Mind Springs Health and St. Mary's Hospital
- Patrick Page MD, Family Physician, Primary Care Partners*
- Amy Gallagher PsyD, MSHCT, Whole Health, LLC, Mind Springs Health*
- Shannon Keel MD, MPH, MarillacHealth

While involved individuals never met as a collective group (as originally intended), each advised the Primary Investigator regarding perceptions of the project.

*Primary Investigator Dr. Patrick Page has been a family physician in Grand Junction, CO since 1983 and is a founding member of Primary Care Partners (1998). He serves as an adjunct professor for studies on aging at Colorado Mesa University in Grand Junction, and is Medical Director for the national New Century Hospice. His interest and work in frailty began in 2000 with a commitment to attending skilled nursing team and family meetings to discuss individual patient concerns. After involvement in more than 200 of these meetings, he found that asserting "safe, simple and respectful" care preempts conflicts and results better alignment of care priorities among patients, families and care teams.

Dr. Page began using the Rockwood Frailty Scale in 2014 and Dr. Steven Buslovich's Patient Pattern frailty index in 2018. Primary Care Partners' 40 providers have received the Patient Pattern frailty index data and geriatric interpretation for 1000+ patients. While not previously considered by those not trained in geriatrics, the passive receipt of established standard-of-care data served to pique providers' curiosity in exploring frailty factors in their work with patients.

Dr. Page is working closely with Shannon Keel MD and Amy Gallagher PsyD in presenting this white paper, the purpose of which is to advise future statewide/catchment area initiatives that see frailty data and care indicators as an important focus for health care innovation, and to catalyze the dialogue essential to preparing for, addressing obstacles of and embarking on similar endeavors within a care-providing community.

A Better System?

Experiencing a significant accident leaving him paraplegic at age 17, 47-year-old 'Brad' has numerous comorbidities and progression, and recently spent more than a year in specialty rehabilitation hospitals. When his frailty score rose to 70+ (incompatible with 120 days' survival in 60% of cases), his stated goal was to be in his aging mother's home with his loving pets.

The primary care physician was not involved in discharge planning, and local resources were not understood by the discharging facility. Delays in providing non/skilled nursing services led to progression of persistent bed sores and a decision by the patient to pursue hospice rather than home care. Following an ill-defined episode leaving Brad predictably near death and unresponsive for more than 48 hours, he miraculously recovered consciousness but continuingly and profoundly frail.

Hospice was terminated and Brad was returned to the care of his primary care doctor and home health services provider. All durable equipment had to be re-prescribed, while much of his wound care was transferred to non-skilled nursing aides. His mother, shouldering the burden of care, quickly developed an array of symptoms from the stress, leading to the home health agency suggesting nursing home care, against the wishes of Brad and his mother.

Subsequently – and driven by attempts to stay at home via self-paid and -arranged home-based care – Brad and his mother now endure a seemingly endless series of staffing mishaps that ultimately result in unreliable-in-the-extreme un/skilled nursing care; all the while, hospice and a local nursing home contemplate Brad's readmission.

While the care desired and requested by the patient/family is ethical and evidence-based – historically effective and providing stability – the bureaucratic healthcare system has an institutional default that does not affirm the individual's care needs and pursues a far more financially costly alternative.

PROJECT CONSTRUCT

The Frailty Workgroup works within the following constructs, as researched and published by numerous others:

- Frailty is an undeniably important consideration in work with the aging. [i]
    - Fried and colleagues articulate the phenotype description of frailty.[ii]
    - As a term, 'frailty' is emotionally charged.[iii] For both patients and providers, it often carries a negative connotation; yet, it is the best and most accurate way to describe the situation and inform appropriate response.
- Frailty is a dynamic risk state, and thus amenable to remediation, optimization or adaptation, all of which lower risk.[iv]
- Patients resonate around the specific challenges of frailty, which provide a specific set of unique patient-centered care priorities; there additionally are common perceptions and connotations that patients, families and health care providers associate with frailty. [v]
- Although not a disease, frailty's progressive nature and rising risk invite chronic disease management strategies for optimal outcomes, thus indicating a central role for nursing care.[vi]
- Increased acceptance of the efficacy of measuring and responding to frailty has led to several evaluative tools, including Clegg and Young's predictive frailty index.[vii] Use of the frailty index leads healthcare providers to increase care and reduce promotion of fewer curative strategies as frailty progresses.[viii]
- Perioperative surgical care, requiring optimization of frailty-based care, now is a standard. Thus a population-tested and validated tool is an imperative.[ix]
- Several countries have begun to focus on frailty as a public health condition: New Zealand[x], Canada[xi], Holland[xii], and the United Kingdom.[xiii]
- Frailty is an 'accumulation of deficits,' as evidenced by Rockwood and Mitnitski in applying mathematical analysis of binary answers to the Comprehensive Geriatric Assessment (CGA), thereby validating frailty indexing as a reliable predictor of patient decline over time.[xiv]
- When applied to populations wherein the social elements of care can be modified, patients meet their own goals of longer life, higher function and less dependence.[xv]
    - World-wide application of primary care principles, likewise, lead to improved life expectancy and lower economic impact of health care delivery.[xvi]
    - Due to time constraints, primary care providers continue to struggle in utilization of the CGA, yet it is well validated as being effective in modifying patient outcomes.[xvii]

Further, the Frailty Workgroup is an adherent of the Social Determinants of Health (SDoH) model, acknowledging safe environments, secure housing, reliable income, access to transportation, social supports et al. as vital considerations to aging patient health and wellness outcomes. It is crucial to understand the impact of SDoH on those who meet frailty criteria, as these patients are significantly impacted by SDoH considerations, often experiencing lack of access to certain resources, decreased mobility threat of falling, and loneliness.

The Workgroup believes that understanding what matters most to patients is transformational. While this often is not the immediate focus of the medical appointment or the treatment team, an ongoing commitment to active listening and supportive questioning allows healthcare professionals to more effectively comprehend and respond to patient needs and desires. The 3Cs Framework provides a model for assisting healthcare team members better understand patients' needs[xviii], describing the important considerations as:

- *Capability*: patients' stated objective in returning to functionality.
- *Comfort:* decrease in physical and/or emotional pain or distress.
- *Calm:* ways in which the care provider system is able to support the patient's journey, whereby decreasing chaos.

Specific to frailty, the 3Cs Framework begs direct conversation with patients:

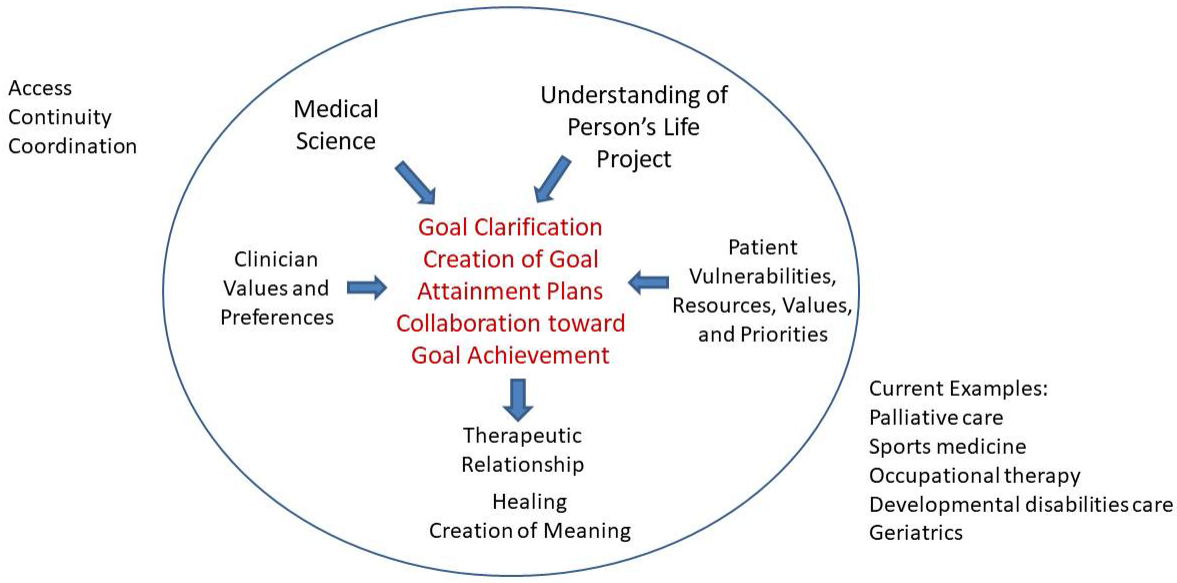
Capability: With effective inquiry, patients typically are able to express sentiments from "being able to do as much as I can," "wishing to remain at home," or "feeling tired and wanting to rest," providing for goal setting in care planning/delivery.

Comfort: Use of patient assessments or scaling questions regarding depression (e.g. PHQ-2 or PHQ-9), anxiety (GAD-7) or pain (0-10 scale, with 10 being most severe) provides healthcare team members with quantified insight to the patient experience and allows for tracking recovery or decline, with opportunity to address these factors in care planning and execution.

Calm: Via ongoing communications, understanding of the patient experience when utilizing healthcare services is important, with small adjustments reducing chaos. As example, is the patient able to reliably secure transportation? Can multiple appointments be managed, or would relief be achieved through scheduled home visits and/or telehealth options? Understanding what brings calm to patients' lives offers opportunity for stronger patient-treatment team relationships while providing additional information on what matters most to patients.

Finally, the approach of goal-oriented and person-centered care becomes an imperative when addressing the needs of frail patients with the commitment to addressing 'what matters most' to patients, and in the context of the SDoH. Work by Mold and Cross[xix] has provided a framework for the Frailty Workgroup in pursuit and study of better patient outcomes among frail elderly individuals:

Goal-Oriented, Person-Centered Care[xx]



The Provider Experience and Perspective

Seven interviews were conducted in Fall 2021 with those involved in the pilot project:

- Shannon Keel MD
- Marc Lassaux, Chief Technical Officer (CTO) for Quality Health Network, Grand Junction CO, and former Co-Chair of Colorado eHealth Commission.
- Melissa Latham RN, Nursing Director at Larchwood Post-Acute Rehabilitation Center, Grand Junction CO.
- Michael Miller, Information Technology Director at Primary Care Partners, Grand Junction CO.
- Mike Pramenko MD, Family Physician and Medical Director at Primary Care Partners.
- Charlene Raum RN
- Stephanie Shrago MD, Family Physician and Quality Improvement Committee member at Primary Care Partners, and author of many policies for workflow redesign.

The following feedback was shared:

Regarding Shifts in Perceptions of Frailty

"I moved from a frailty description of 'getting old and weak' to frailty being a continuum of the accumulation of deficits, requiring a graded process of altering care planning. I now see the need for the granularity of a full frailty assessment."

"Prior to the pilot, I considered frailty a descriptor for physical and mental ability and limitation, indicating the need for help. I now consider frailty an objective measure, on a continuum, that augments and improves family communication of prognosis and guides the direction of care; an objective measure that allows less stigma, less judgment in care, and improved direct communication of care needs."

"Not fully understanding frailty in the beginning, I have come to appreciate frailty as nuanced and comprehensive, encompassing mood, cognition, health perception, as well as physical attributes, ADL and IADL challenges, and adaptive needs. Frailty is a condition of progressive risk; the frailty summary interprets risk for the family physician and directs the focus to optimizing care that meets patient-directed goals."

"As a lay family member, involvement with the pilot provided opportunity to consider the concept of frailty while contemplating a grandparent's frailty. My view of frailty was transformed to appreciate its gradations, which indicate the supportive care needed. Empathy toward my grandparents and the physicians grew in the process."

"My subjective sense of risk and prognosis became more graded, objective and actionable. Advanced care planning became more realistic, while logical consequences to unrealistic care plans were bookmarked, allowing growth in the engagement of patients and their families over time."

Regarding Use of the Frailty Assessment and Index

"Aided by a bilingual caregiver, I conducted an assessment on an 81-year-old Latin American female with Alzheimer's dementia. The patient did not answer some questions due to lack of capacity; this was useful but hard to capture. The full interview took 20 minutes and went smoothly. The 10-question screen took two-to-three minutes and the results were accurate as to the level of concern. The questions were logical and aided advanced care planning discussions.

"I would welcome using an objective measure on an ongoing basis, but would prefer a workflow where the medical assistant performs the interview prior to a visit; I think I could identify patients needing a frailty screening and guide the assistant or care coordinator to complete this."

"I envision having a team member do a full assessment on all patients 75+ years, any Transitional Care Management (Medicare code) patient, and anyone prescreened as likely to be significantly frail."

"Family physicians do not have time for the full CGA."

"Having trained many family physicians over many years, I feel the tool would be useful to most ambulatory practices, and would be acceptable once ancillary staff were trained to augment the physician's care plan. The objectivity of the measures is useful to the pre-operative patient, or the patient recovering from an illness – those in care transitions."

"A focused team approach is best to meet care needs – including behavioral health counseling, triage, social work evaluation, and physical therapy. The full assessment provides an objective basis for providing counseling prior to surgical procedures or inflammatory treatments that may pose a risk to the frail."

"I do feel that frailty assessments can fit into my workflow, and that this would add value to patients' care and outcomes. If I'd been presented with frailty reports prior to having a care team, though, I would have been overwhelmed at not having the resources to implement the needed care changes."

"I would like to have frailty reports on all our patients – this would augment the care we can provide."

Conclusions

"I feel that this data allows for more proactive care management of a vulnerable aging population, and helps to avoid futile or inappropriately aggressive treatment."

"Frailty is a demographic, moral and – in terms of Medicare spending – financial imperative. The case for frailty changing clinical workflow appears overwhelming, given the economic/financial imperatives facing primary care. The full frailty assessment aligns with specifically addressing the SDoH, and I like the emphasis on supports over medications, procedures and interventions; well addressed, providing supports for incremental deficits/frailty will have an impact on ER and hospital utilization."

"Similar to stating a BMI of 40 indicates morbid obesity and greater risk, being able to state that a frailty score over 40% percent indicates higher risk – and that certain issues might be remediable – could lower risk and improve outcomes."

"The case that motivates me to change is the aging patient with orthopedic complaints. The Patient Pattern tool – given the validation, granularity and patient engagement it provides – is advantageous over the current clinical approach. I would like to have ongoing guidance from a provider who has extensive experience in interpreting the frailty index."

"The challenge is to maximize community benefit, to capture the attention of medical business models, and to share the cost and work of data capture via a universal network for a particular catchment area."

"Identifying frailty helped our community healthcare providers understand and improve clinical care for those patients with poorer health and multiple conditions. Identifying the patients at greatest risk, and assessing the likelihood of successful outcomes, allows for appropriate care planning and decreases the overall cost of care. In other words, the Frailty Workgroup project demonstrates the value in providing the right care for the right patient. Patients should not have one-size-fits-all treatment based on diagnosis."

"I am positive regarding the value of assessing frailty in the skilled nursing or rehabilitation setting. We find the counselling tool helpful in communicating realistic expectations and providing for refocus on care opportunities.

"Obstacles remain profound in nursing home settings, with low reimbursement by Medicare Advantage plans and the stigma of payer mandates."

"Data source providers have had significant distraction from both COVID and pay-for-performance mandates. Despite these distractions, the pilot clearly demonstrates successes via:

1) The capture and collection of frailty data by the software vendor (Patient Pattern).
2) The calculation of frailty, and care management guide, accompanying the relative risk discussion.
3) The distribution, formatting and interpretation of frailty index reports, available to any provider needing access to the information.
4) The linking of and access to the entities who engage the SDoH."

"Principles, and community preparation, are paramount. If this data is important to collect, and can provide risking information, it is important to share. Effort is saved and value is provided; the next provider needs the latest frailty report.

"It is much easier to create a community standard than to negotiate between all clinical entities. The Health Information Exchange provides the hub, and each entity shares via its spoke arrangement to the hub. Entities that attempt to control the data do not recognize the behavior of patients, which migrates outside proprietary networks."

In consideration of these insights, and in observing health and wellness outcomes for the 2000+ patients with whom frailty indexing and geriatric assessment were used and – to a greater or lesser degree – impacted care planning and delivery, the following four affirmations are clear:

- Frailty is a progressive and predictable condition, with periodic/ongoing risk assessment providing important data to inform ethical care planning.
- In attaining healthcare services' Quadruple Aim for the frail aging population, there is a clear mandate to engage a team-based, goal-oriented and patient-centered approach.
- There are numerous system-level challenges and barriers that do not allow for full maximization of the significant benefits offered by gathering and utilizing frailty data to inform safe, simple and respectful care planning and delivery.
- There is great opportunity to apply the tools, processes and knowledge gained in the study of frailty to improve healthcare assessment, planning and delivery, and to fully deliver 'what matters most' for these patients.

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"It seems to me that sticking with a quantitative approach in understanding frailty and ageing is essential. That is because certain aspects of the study of ageing oblige us to recognize that 'the problems of old age come as a package.'" (Kenneth Rockwood MD, in his introduction to "Living with Frailty: From Assets and Deficits to Resilience" by Shibley Rahman)

Legion evidence confirms that vulnerable patients and the care system cannot ignore frailty. Enhanced family and provider understanding of the true nature of aging – and the opportunity for curative strategies to cause harm – will lead to improved support strategies aligned with patient goals. Further, use of the frailty evaluative tool and geriatric assessment – followed by honest provider-patient discussions of risk – improve advanced care planning.

One of the Primary Investigator's unrealized objectives and ultimate disappointments of the project was to have teams of physicians providing feedback on their work, with each provider within these teams seeing a small population (10) of frail patients with whom frailty indexing was being used. Short of this, Dr. Page's own practice was able to increase the number of patients with defined advanced directives from 10% to 65% in the first 6 months of the pilot.

Frailty-focused care considers patient limitation, vulnerability and futility of acute care. The result, when applied proactively, is fewer ER visits. Home visits and hospice referrals increased. Support of families and caregivers is enhanced, and the trend toward aging in place was met with concrete assistance toward success of that strategy. Prompt evaluation of minor acute issues obviates emergency evaluations. Patients in a high risk registry, when admitted, were more likely to have high risk procedures deferred until advanced care planning was discussed with the primary care provider most aware of the narrative thread of the discussion of the frail patient and more likely to avoid futility.

Western Colorado Physicians Group providers are uniform in accepting frailty as an important, progressive condition that requires case management, and have identified a workflow that create a routine yet proactive approach to frailty reassessment. For the Primary Investigator, measurement and consideration of frailty is an ethical imperative. Use of the process leads to forthright, helpful communication of risk…

Leading to a patient and family narrative of realism…
Leading to alignment of care plans with patient values…
Leading to improved perception of 'good,' and lower costs of care.

In attaining healthcare services' Quadruple Aim for the frail aging population, there is a clear mandate to engage a team-based, goal-oriented and patient-centered approach.

Conceptually, the 3Cs framework (discussed above) is not difficult to understand. However, asking 'what patients want' is not the manner in which healthcare has traditionally been delivered.

The patient self-reporting PCPCM (Person-Centered Primary Care Measure)[xxi] assesses rarely-captured yet high-value information on 11 considerations in health care service delivery:

Accessibility	Comprehensiveness	Integration
Coordination	Relationship	Advocacy
Family and Community Context	Goal-Oriented Care	Disease Management
Illness Management	Prevention Management	

Use of the PCPCM/similar provides baseline information and catalyzes quality provider-patient interface and care planning, leading to care delivery/actions best suited to patient wellness and resiliency, including institution of supports that address SDoH deficits. Prioritizing these considerations and conversations is what differentiates the Frailty Workgroup approach and, as the Primary Investigator describes how this priority has impacted his own practice, he indicates, "I no longer think about these things; I just do them."

In utilizing information from the PCPCM, and when compared with a siloed service provision approach, provider teams realize far greater gains in planning for and delivering effective follow-up. Maximized outcomes of the planning and care provision process for frail patients require a strong collegial effort among the primary doctor/staff, skilled nursing and other home health providers, and long-term care providers.

To help alleviate time pressures and allow professionals to work 'at the top of their licenses,' team capacity may be expanded via involvement of community health workers (CHWs), who focus on patients' needs outside traditional physical health care appointments. The role of these 'practice extenders' is to promote patient-centered and team-based care while providing opportunities to engage patients, address SDoH concerns, and increase access to health resources while helping patients achieve health-related outcomes.[xxii] Findley et al. (2012) describe the contributions of CHWs as providing outreach, helping to enroll and retain patients, assisting with system navigation, providing education, offering social support, and demonstrating positive health outcomes by assisting patients with treatment compliance. [xxiii] CHWs are able to meet patients in a variety of settings, thus obtaining information about patient abilities and challenges at home and in the community; parallel to these exchanges, pertinent information is relayed to other members of the treatment team for further definition and honing of clinical treatment plans.

Progress is made as each team member settles in to contribute their unique services. If all cooperate, value is added at each site of care, ultimately benefitting the patient. The process is well served by gathering and review of data – not simply for the individual needs of provider institutions, but to inform all who will encounter the frail patient, typically seen in many locations and in an unscheduled fashion.

Treating patients as complex humans with unique assets and resiliency – and not simply measuring by their number of diseases – calls for adherence to additional practices not common to traditional healthcare delivery:

- Use of trauma-informed, patient-friendly language
    - Reminiscence theory/therapy
    - Recognition and sharing of the new science of resilience[xxiv]
- Family engagement in care planning and delivery
    - Assistance with conflict resolution
- Work with patients in establishing routines
- Vigilant assessment of patient progress (e.g. perioperative)
- De-emphasis on insurance company inputs.

As affirming changes are implemented for patients, trust in the healthcare team increases and the provider-patient relationship is strengthened, in turn providing additional opportunity for understanding of and acting on what is most important to the patient. As the cycle continues and the patient experience moves toward the imminent, the care provider team is well positioned as a highly-qualified de facto ethics board.
'By-products' of this model serve the Quadruple Aim's financial and provider experience goals: Ineffective and even harmful interventions – most specifically surgeries and lengthy periods of undesired institutionalization – are less frequently pursued, netting significant cost savings. Likewise, reduced complexity of care plans and services delivery promote wellness within the healthcare system and its incumbent providers, allowing opportunities for professionals to recover joy-in-practice and build resiliency skills.

There are numerous system-level challenges and barriers that do not allow for full maximization of the significant benefits offered by gathering and utilizing frailty data to inform safe, simple and respectful care planning and delivery.

The first challenge facing healthcare providers is an understanding of frailty: what it is and how it is best approached. This challenge is easily enough met on the individual provider level, as the tenets of appropriate response to frailty are not difficult to understand, and align with other findings in and beliefs regarding effective healthcare delivery. Broad and adequate system-level knowledge, however, takes time.

- Research needs to continue cross-validating the wide array of available frailty assessment tools[xxv] until a common standard is established.
- Simpler frailty assessment tools are often requested. While this request validates the construct for the need for a frailty tool, Kenneth Rockwood states:
    - "People will always want the simplest tool – which is in conflict with the mathematics of accumulation of deficits."
    - Thus the desire for a tool and its predictive power is in conflict with the need for thoroughness and statistical validity.
    - Thus capturing data points already in the workflow of systems is a must, a concept taken from the National Health Service Frailty implementation started by Andrew Clegg and John Young.
    - Given the community interest in knowing a given patient's level of risk, and the work entailed to create a frailty index, there should be an imperative to share that vital information within a region. We call this "Pay it Forward".
- In our pilot, the lack of an inpatient frailty score, at the launch point of a new illness highlighted an opportunity, as subsequent care planning around frailty would simplify the thinking of providers subsequently.
    - A potential solution was piloted by Tyson Orbendorfer MD, geriatric professor at University of Colorado Health. He continued his predecessor's work and developed and validated a frailty index for EPIC (the countries' largest EHR provider). The index was provided by inpatient clinical data within one day of hospital/institution admission.
    - Derived from routine patient data, this tool lives within the EPIC software system – utilized by UC Health and Mesa County-based St. Mary's Hospital, as well as other SCL Health hospitals across the state and country. It has yet to be deployed and Dr. Orbendorfer has since moved to practice in New Zealand.
    - Again, this activity demonstrates the construct validation.
    - I feel that were this deployed within the context of our pilot, the workflow toward smooth transitions in care and patient centered care planning would create endless opportunities, a view shared by our clinical partners.

Second, once frailty and response to this condition are understood, the next step is institutionalization of effective systems and practices to address its realities. Promoting a relational – rather than transactional –

system for care delivery, committing to provider-patient engagement, and responding to a holistic wellness imperative require a departure from the current medical model; thus, the simple need for change is a formidable challenge.

Preparation and collaborative practices at the community/service catchment area level also are necessary. In the case of Mesa County, Colorado, a series of happenings made possible the efforts of the Frailty Workgroup: all members of the 500-member provider community read Atul Gawande's "Being Mortal," several speakers on related topics were brought in to present, the CEO of the local hospice – a powerful early adherent to and thought leader in the American hospice movement – identified the Frailty Workgroup's Primary Investigator as "my new best friend." In whole, the time and place were ideal for learning, growth, and shift in attitudes and practices.

Third, the conceptual challenge of frailty requires extensive gathering and review of data, and the need to reset provider workflow. Providers uniformly hesitant to add another step to their busy days, yet affirm the frailty model as perfect example of a patient-centered goal-setting process that provides for alignment of patient, provider and system goals. This challenge was repeatedly encountered in the pilot project, where core team members – along with nursing, case management and similar support professionals – are needed but difficult to fully engage in gathering additional data.

- Training healthcare team members on the importance of 'what matters most,' and changing required documentation in Electronic Medical Records (EMRs) to reflect the objectives of the 3Cs, takes time and can distress for the treatment team as "one more thing" is added to their plate.

Not all data is created equal, and this is highly evident in current efforts to rely on information from services provided in the past (e.g. EMR-coded services, insurance claims records). While this chain-based feedback has merit for researchers, its time-delayed nature deems it unhelpful and non-actionable at the point of patient contact.

Fourth, bureaucracy – increasingly recognized as an obstacle to good healthcare in general – continues as an obstacle of behemoth consequence:

- The U.S. Department of Health and Human Services has had difficulty in recognizing and accepting innovations outside of traditional silos; frailty is the perfect example of a condition that suffers from the difficulties of silo-based care (e.g. the three-day qualifying stay disbanded during the COVID pandemic).
- David Reeves PhD (Manchester University Center for Primary Care Innovation) has studied the opportunities and obstacles to the National Health Service's frailty-based care compact[xxvi], which speaks to the mismatch of after-the-fact data capturing procedures with the actionable, real-time feedback needed by providers.
- Providers spend a substantial portion of their time on bureaucratic effort that is unpaid, with the unintended consequence of delay, injury, harm and cost to life; prevalent use of telehealth in response to the COVID pandemic marks positive forward movement in this regard.

Finally, a primary lesson from The Frailty Workgroup pilot is that frailty indexing and appropriate response get little traction without financial incentives.

- For-profit insurance plans, and large employers of primary care, are able to set up incentives, but tend to be parsimonious in rewarding those who have to make the adaptations.
- Medicare Advantage participation, as well as special needs programs identified in CMS regulations and available to the disabled and the frail in institutions, offer potential alignment, although the primary care physicians' central role may be undervalued; some plans pay providers so poorly that other team members are responsible for advising care.

Financial incentive will be key to adopting the required system-wide workflow re-design. Frailty indexing data indicates justification of higher payments to the system of care that meets both physical and emotional needs of patients, which paradoxically costs less money. Even a budget-neutral approach could get enthusiastic support among primary care providers if relief is offered from exhaustive bureaucratic paperwork and required reporting on random data points, thereby cutting overhead costs and leading actual increased profit.

There is great opportunity to apply the tools, processes and knowledge gained in the study of frailty to improve healthcare assessment, planning and delivery, and to fully deliver 'what matters most' for these patients.

The Frailty Workgroup findings ultimately affirm that the most efficient use of resources in caring for our frail elderly – the most vulnerable and costly patient population – is to gather and utilize risking information specific to this predictably progressive condition. In fact, it is the belief of the Primary Investigator that the process of using frailty indexing and planning tools is at least as valuable as the data derived. Myriad opportunity exists for future gains that benefit the individual patient and family, care providers, the healthcare system, and society at large.

Numerous and notable activities to further both the outcomes and ongoing assessment of work with frail elderly patients have been catalyzed as a result of and/or in tandem to The Frailty Workgroup efforts:

- Gary Knaus MD (Carbondale, CO) has obtained Patient Pattern assessment licenses for his family practice group, and has developed a practice workflow where a team assesses, tracks data and acts in alignment with a singular patient's degree of frailty. Several other of the region's providers of primary care, PACE, hospice and palliative care also would like to pilot the software.
- Rocky Mountain Orthopedics (Grand Junction, CO) now proactively asks for frailty assessment data prior to pursuit of elective joint surgery, and plans to conduct frailty assessments before determining a path forward in the case of traumatic hip fracture.
- CMS has eliminated the three-day qualifying stay for admission into a skilled nursing rehabilitation facility, and has authorized telehealth visits to allow for safe and secure medical management and counselling of patients and caregivers.
- The Aspen Renaissance Transformation Team (ART2) group, a 501c3 organization comprising innovative family physicians and early adopters located throughout Colorado, has initiated a research and quality improvement activity around the theme of loneliness, given that lonely frail individuals have the most adverse survival outcomes.
- The PEACHNET focus group, gathering together practice-based researchers from throughout the state, and with support from University of Colorado Health Sciences, affirms the construct validation of frailty for use in planning for and delivery of oncology services.
- Ron Crosno MD, national medical director for Kindred Hospice, has approved the use of frailty assessments in hospice re/certification to augment clinical judgment.
- Margaret O'Kane of the National Committee for Quality Assurance affirms that quality improvement is a local phenomenon: Motivation, focus, teamwork, and outcome are improved when a community voluntarily addresses its own priorities.
- Mesa County has benefitted from the presence of a home grown, not for profit, health insurance company, Rocky Mountain Health plans. RMHP has capitalized health innovations that engaged providers proposed. Its financial challenges led to its sale to United Health Care.
- Some opine that an alternative to the usual large for profit health plans might allow the energized engagement that has fueled local innovation.

- UCARE, a not-for-profit insurance company (Minneapolis, MN) has made plans to enter the Colorado market. This company is noteworthy for low administrative costs and partnership with primary care providers to ensure patient-centered care.
- Medicare has issued a Request For Proposals for data capture from insurance claims to create a frailty index. (It is the Primary Investigator's opinion that claims data provides the advantage of passive data capture and time savings, potentially beneficial for research and early identification. But, given the usual lag time in presenting claims data to clinicians, this approach risks irrelevance for case management of moderate-to-severe levels of frailty; patients cannot wait 60-90 days as care adjustments become emergent/catastrophic. Efficacy of the Medicare approach is challenged by the real-time data capture – via OASIS, MDS, point-of-care CGA – of the Frailty Workgroup pilot and the rapid deployment it allows. Further, in consideration of Medicare's high-complexity coding system supporting maximize per member/per month payment, the Frailty Workgroup believes that only observational performance measures of frailty will provide the necessary and actionable data for effective case management and accurate risking of individual patients.)
- There is increasing acceptance for and implementation of thinking and practices presented in Shibley Rahman's book, "Living with Frailty: From Assets and Deficits to Resilience" (2018), faraway the most comprehensive text available on the topic to date. The work of the Reeves' group (Manchester University), likewise, challenges the validity of general practices' "problem lists" that fail to consider patient resilience.

All of these activities serve to affirm the initial construct validation proposed by The Frailty Workgroup: Quality of life for the vulnerable aging population and family members is improved via (local) system-wide frailty assessment and subsequent care planning and services delivery. Improved outcomes of quality and satisfaction can and should be expected.
Looking forward:

- The Frailty Workgroup's efforts will continue in Fall 2022 when Jessica Griffiths RN, DNP candidate will work with Dr. Page on a capstone doctoral research project comparing patient outcomes by the degree to which frailty data was utilized in case management.
- There is need for the American Medical Association to create and maintain a CPT code for frailty risk-advised advanced care planning, with higher/incentivizing compensation for delivery of validated patient services.
- AHRQ (Agency for Healthcare Research and Quality) guidelines need to articulate: "Disease state management should be qualified in the presence of moderate or severe frailty, and as frailty continues."
- It is desirable that additional efforts similar to those of the Frailty Workgroup are pursued with representation from the patient, disability and elder care communities – including aligned incentives to bring together these interests – to provide a sustainable and ethically-sound model.

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