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Functional longevity integrated care framework (flicf™): a multidisciplinary model for healthy aging, functional independence, and healthcare sustainability

Estrutura integrada de cuidados de longevidade funcional (flicf™): um modelo multidisciplinar para envelhecimento saudável, independência funcional e sustentabilidade na saúde

Marco integrado de cuidados funcionales de longevidad (flicf™): un modelo multidisciplinar para el envejecimiento saludable, la independencia funcional y la sostenibilidad sanitaria

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ABSTRACT

Background: Population aging is transforming healthcare systems throughout the United States. Although advances in medicine and public health have significantly increased life expectancy, aging populations continue to experience rising rates of chronic disease, functional decline, falls, disability, healthcare utilization, and demand for long-term support services. Simultaneously, healthcare workforce shortages and rising healthcare expenditures pose additional challenges to healthcare sustainability. Existing healthy aging initiatives frequently address these issues through isolated interventions rather than integrated, function-centered models. **Objective**: To introduce the Functional Longevity Integrated Care Framework (FLICF™), a multidisciplinary conceptual model designed to preserve functional independence, promote healthy aging, and support healthcare sustainability through coordinated healthcare interventions. **Methods**: This study utilized a narrative literature review combined with a conceptual framework development methodology. Scientific literature, governmental reports, public health publications, workforce analyses, and healthy aging initiatives were reviewed to identify recurring determinants of healthy aging and healthcare sustainability. Findings were synthesized with more than twenty-two years of professional clinical experience across intensive care, rehabilitation, home healthcare, and community-based healthcare settings. **Results**: The review identified five interconnected domains associated with healthy aging and preservation of functional independence: Early Functional Assessment, Preventive Rehabilitation, Integrated Home-Based Healthcare, Post-Discharge Continuity Programs, and Healthcare Workforce Development. These domains were integrated into the Functional Longevity Integrated Care Framework (FLICF™), a model centered on Functional Longevity, defined as the preservation of mobility, independence, participation, resilience, and quality of life throughout the aging process. **Conclusion**: The FLICF™ provides a novel multidisciplinary framework that shifts healthcare priorities from a predominantly disease-centered model toward a function-centered approach. By integrating prevention, rehabilitation, continuity of care, home-based healthcare, and workforce preparedness, the framework offers a scalable strategy to address population aging, support aging in place, reduce preventable disability, and improve healthcare sustainability. Future implementation studies are needed to evaluate effectiveness, cost-effectiveness, and scalability across diverse healthcare environments.

KEYWORDS: Functional Longevity; Healthy Aging; Functional Independence; Aging in Place; Preventive Rehabilitation; Home-Based Healthcare; Healthcare Workforce Development; Healthcare Sustainability; Continuity of Care; Population Aging.

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1. INTRODUCTION

Population aging has emerged as one of the most significant public health and healthcare challenges of the twenty-first century. Advances in medicine, disease prevention, sanitation, and healthcare delivery have contributed to substantial increases in life expectancy throughout the United States and other developed nations. While these achievements represent major public health successes, they have also resulted in a growing prevalence of chronic diseases, multimorbidity, functional decline, healthcare utilization, and demand for long-term support services.

According to demographic projections, the proportion of adults aged 65 years and older in the United States will continue to increase substantially over the coming decades. This demographic transformation is expected to influence healthcare expenditures, workforce demand, rehabilitation services, home healthcare utilization, caregiver burden, and public health planning. Consequently, healthcare systems must develop innovative strategies to address the complex needs of aging populations while maintaining accessibility, quality, and sustainability.

Historically, healthcare success has often been evaluated through reductions in mortality and increases in life expectancy. Although these indicators remain important, they may not fully capture the lived experience of aging individuals. Many older adults live longer while simultaneously experiencing progressive mobility limitations, recurrent falls, chronic disease burden, social isolation, reduced participation in daily activities, and loss of independence.

Increasing attention has therefore been directed toward healthspan, reflecting the recognition that extending lifespan alone may be insufficient if additional years are accompanied by functional decline (Olshansky, 2018).

Functional decline represents one of the most important determinants of healthcare utilization among older adults. Conditions such as cardiovascular disease, diabetes mellitus, osteoarthritis, stroke, frailty, and neurodegenerative disorders frequently contribute to progressive reductions in strength, balance, mobility, endurance, and independence. These limitations often initiate a cascade of adverse outcomes, including falls, hospitalization, institutionalization, caregiver dependence, and increased healthcare expenditures.

Falls remain among the most common and costly adverse events affecting older adults in the United States. Beyond physical injuries, falls contribute to fear of falling, reduced physical activity, social withdrawal, and accelerated functional deterioration. Evidence consistently demonstrates that many risk factors associated with falls and disability are modifiable through

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early intervention, rehabilitation, exercise, environmental modification, and continuity of care. At the same time, healthcare workforce shortages continue to threaten access to and quality of care across multiple disciplines, including nursing, rehabilitation sciences, geriatric care, and home healthcare services. These workforce challenges are occurring simultaneously with increasing demand generated by population aging, creating significant pressure on healthcare systems nationwide.

Home-based healthcare has emerged as an increasingly important strategy for supporting aging populations. By delivering services within homes and communities, healthcare professionals can identify environmental risks, improve care coordination, support caregivers, monitor chronic conditions, and promote aging in place. Growing evidence suggests that home-centered models may improve patient outcomes while reducing avoidable healthcare utilization.

In response to these converging challenges, this manuscript introduces the Functional Longevity Integrated Care Framework (FLICF™), a multidisciplinary model designed to promote healthy aging by preserving functional independence. The framework integrates five interconnected pillars: Early Functional Assessment, Preventive Rehabilitation, Integrated Home-Based Healthcare, Post-Discharge Continuity Programs, and Healthcare Workforce Development.

The central premise of the framework is that healthcare systems should prioritize Functional Longevity, defined as the preservation of mobility, independence, participation, resilience, and quality of life throughout the aging process. By positioning functional independence as a primary healthcare objective, the FLICF™ seeks to provide a practical and scalable approach capable of improving individual outcomes, strengthening workforce preparedness, supporting healthcare sustainability, and addressing the evolving needs of aging populations in the United States.

2. LITERATURE REVIEW

2.1 Population Aging in the United States

Population aging represents one of the most significant demographic transformations of the twenty-first century. Advances in medical care, disease prevention, sanitation, vaccination programs, and public health initiatives have contributed to substantial increases in life expectancy across the United States and other developed nations. As a result, the proportion of older adults within the population continues to grow, creating new challenges for healthcare

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systems, workforce planning, social services, and public policy.

The aging population is expected to generate increased demand for healthcare services, rehabilitation programs, chronic disease management, long-term care, caregiver support, and community-based interventions. While increased longevity reflects major societal achievements, it also highlights the need for healthcare models that support functional independence and quality of life throughout the aging process. Modern healthcare systems must therefore balance lifespan extension with strategies designed to preserve healthspan, independence, and participation in daily life.

2.2 Chronic Disease Burden

Chronic diseases remain among the leading causes of disability, healthcare utilization, and mortality in the United States. Conditions such as cardiovascular disease, diabetes mellitus, osteoarthritis, chronic respiratory disorders, stroke, Parkinson's disease, and other age-related conditions frequently contribute to progressive declines in physical function.

Many older adults experience multimorbidity, defined as the coexistence of multiple chronic conditions. This phenomenon complicates healthcare systems because disease-specific treatment approaches often fail to account for the cumulative effects of multiple interacting health conditions.

Beyond physiological symptoms, chronic diseases frequently affect mobility, endurance, balance, social participation, psychological well-being, and overall quality of life. Consequently, successful management requires approaches that extend beyond disease control and emphasize preservation of functional capacity.

2.3 Falls and Functional Decline

Falls represent a major public health concern among older adults and constitute one of the most common causes of injury-related morbidity, hospitalization, and loss of independence.

Functional decline often develops gradually through reductions in strength, balance, mobility, endurance, and participation in daily activities. These changes may initially appear subtle but frequently progress toward disability if left unaddressed.

A typical progression may involve:

Chronic Disease

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Reduced Physical Activity

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↓
Muscle Weakness
↓
Balance Impairment
↓
Falls
↓
Hospitalization
↓
Loss of Independence
↓
Institutionalization

Research consistently demonstrates that many risk factors associated with falls are modifiable. Exercise programs, strength training, balance interventions, mobility programs, environmental modifications, and rehabilitation services have been shown to reduce fall risk while improving functional outcomes. These findings support the importance of preventive approaches designed to preserve independence before severe disability develops.

2.4 Home-Based Healthcare

Home-based healthcare has become an increasingly important component of healthcare delivery for aging populations. Many older adults prefer to remain within their homes and communities as they age, a concept commonly referred to as aging in place.

Home healthcare services may include nursing care, rehabilitation services, chronic disease management, medication monitoring, caregiver education, telehealth support, and interdisciplinary care coordination.

Providing services within the home environment offers unique advantages. Healthcare professionals can directly evaluate environmental hazards, assess real-world functional performance, identify barriers to independence, and implement individualized interventions.

Evidence from Hospital-at-Home models has demonstrated that home-based care can improve outcomes while reducing healthcare utilization and costs (Leff et al., 2005).

2.5 Healthcare Workforce Shortages

Healthcare workforce shortages are among the most pressing challenges facing the United

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States healthcare system. Increasing demand for services, retirement of experienced professionals, workforce burnout, educational capacity limitations, and geographic disparities contribute to persistent workforce gaps across multiple healthcare disciplines.

Shortages are particularly concerning in fields associated with aging populations, including nursing, physical therapy, occupational therapy, home healthcare, geriatric medicine, and community-based healthcare services.

Without sufficient workforce capacity, healthcare systems may struggle to meet the growing needs of older adults. Workforce development has therefore become both a healthcare priority and a public health necessity.

Educational programs, continuing professional development, interdisciplinary training, leadership development, and geriatric competency initiatives are increasingly recognized as essential components of future healthcare preparedness.

2.6 Functional Longevity as an Emerging Healthcare Paradigm

This perspective is consistent with contemporary healthy aging models that emphasize functional ability as a key determinant of well-being in older age (Beard et al., 2016). Although healthcare systems have achieved remarkable success in extending life expectancy, increasing evidence suggests that longevity alone is insufficient as a measure of successful aging.

The concept of Functional Longevity expands traditional healthcare objectives by emphasizing preservation of mobility, independence, participation, resilience, and quality of life throughout the aging process. Functional Longevity recognizes that individuals should not only live longer but also maintain the ability to perform meaningful activities, participate in society, and remain functionally capable throughout those additional years.

This perspective aligns with contemporary concepts of healthy aging, healthspan, patient-centered care, and healthcare sustainability. The Functional Longevity Integrated Care Framework (FLICF™) was developed to operationalize these principles through a multidisciplinary model that integrates preventive rehabilitation, functional assessment, home-based healthcare, continuity of care, and workforce development.

By focusing on preservation of function as a primary healthcare objective, the framework seeks to address many of the challenges associated with population aging while supporting healthier, more independent, and more sustainable aging trajectories.

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3. METHODS

Study Design

This study utilized a narrative literature review combined with a conceptual framework development methodology. The objective was to identify major healthcare challenges associated with population aging and to synthesize evidence to support the development of an integrated model focused on healthy aging, the preservation of functional independence, and healthcare sustainability.

The study was conducted as a theoretical and conceptual investigation rather than an experimental or clinical trial. The resulting framework was designed to provide a multidisciplinary structure to guide future research, healthcare innovation, workforce development initiatives, and policy discussions related to aging populations.

Literature Review Process

A comprehensive review of scientific literature, governmental reports, public health publications, workforce analyses, and healthcare policy documents was performed.

The review focused on five major domains associated with aging populations:

- Population aging
- Chronic disease burden
- Functional decline and falls
- Home-based healthcare
- Healthcare workforce development

Additional emphasis was placed on literature addressing:

- Healthy aging
- Healthspan
- Functional independence
- Rehabilitation sciences
- Continuity of care
- Aging in place
- Healthcare sustainability

Sources included peer-reviewed scientific publications, governmental reports, public health documents, healthcare workforce studies, and international healthy aging initiatives.

The purpose of the review was not to conduct a systematic review or meta-analysis, but rather

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to identify recurring themes, evidence-based interventions, and healthcare system challenges relevant to aging populations.

Conceptual Framework Development

The Functional Longevity Integrated Care Framework (FLICF™) was developed by integrating findings from the literature review and extensive professional clinical experience accumulated by the author over more than 22 years of healthcare practice.

Professional experience contributing to framework development includes clinical work in:

- Adult intensive care units
- Pediatric intensive care units
- Medical-surgical services
- Neurological rehabilitation
- Geriatric rehabilitation
- Sports rehabilitation
- Home healthcare
- Community-based rehabilitation programs

These experiences provided practical insight into the challenges associated with chronic disease management, mobility preservation, healthcare transitions, rehabilitation services, caregiver support, and continuity of care among aging populations.

Guiding Principle

The framework was developed around a central hypothesis:

Healthcare systems that prioritize preserving function alongside disease management may achieve superior long-term outcomes compared with systems focused primarily on treating disease after functional decline has already occurred. This principle reflects growing recognition that mobility, independence, participation, and quality of life are essential indicators of successful aging.

Framework Construction

Following review and synthesis of the literature, five domains were identified as recurring determinants of healthy aging and healthcare sustainability:

Domain 1 – Early Functional Assessment

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Identification of risk factors associated with mobility loss, falls, disability, and functional decline before significant impairment develops.

Domain 2 – Preventive Rehabilitation

Implementation of evidence-based interventions designed to preserve mobility, strength, balance, endurance, and independence.

Domain 3 – Integrated Home-Based Healthcare

Delivery of healthcare services within home and community environments to support aging in place and improve accessibility.

3.7 Identified Gap in Existing Healthy Aging Models

Despite significant advances in healthy aging research, existing healthcare models often address aging-related challenges through isolated interventions rather than integrated systems. Numerous programs have demonstrated benefits in areas such as fall prevention, chronic disease management, rehabilitation, home healthcare, care transitions, and workforce education. However, these initiatives are frequently implemented independently, limiting their ability to address the multifactorial nature of functional decline among aging populations.

Current healthy aging frameworks commonly emphasize disease management, health promotion, or specific clinical outcomes, but fewer models prioritize preservation of functional independence as the primary organizing principle across the healthcare continuum.

Furthermore, healthcare workforce development is rarely incorporated as an operational component within healthy aging frameworks despite its critical role in healthcare delivery and sustainability.

This gap suggests a need for multidisciplinary models that integrate functional assessment, preventive rehabilitation, home-based healthcare, continuity of care, and workforce development into a coordinated strategy focused on the long-term preservation of function.

The Functional Longevity Integrated Care Framework (FLICF™) was developed in response to this need. The framework seeks to bridge existing gaps by providing a comprehensive structure that aligns clinical interventions, workforce preparedness, and healthcare system objectives around a shared goal: preservation of functional independence throughout the aging process.

Domain 4 – Post-Discharge Continuity Programs

Structured follow-up processes designed to reduce fragmentation of care and prevent avoidable complications following healthcare transitions.

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Domain 5 – Healthcare Workforce Development

Educational and professional development initiatives designed to strengthen workforce preparedness for aging-related healthcare needs.

These five domains were subsequently integrated into a single operational model referred to as the Functional Longevity Integrated Care Framework (FLICF™).

Intended Application

The framework was designed as a scalable model capable of adaptation across multiple healthcare settings, including:

- Hospitals
- Rehabilitation centers
- Home healthcare agencies
- Long-term care organizations
- Community health programs
- Academic institutions
- Public health initiatives

The model is intended to support future pilot studies, implementation projects, workforce development programs, and healthcare policy initiatives focused on healthy aging and preservation of functional independence.

Ethical Considerations

This study did not involve human participants, patient records, protected health information, or experimental interventions. Because the manuscript represents a conceptual framework derived from literature review and professional experience, institutional review board approval was not required.

All information used in framework development originated from publicly available scientific literature, government publications, and professional observations from routine clinical practice.

4. FUNCTIONAL LONGEVITY INTEGRATED CARE FRAMEWORK (FLICF™)

4.1 Conceptual Foundation

The Functional Longevity Integrated Care Framework (FLICF™) was developed in response

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to growing healthcare challenges associated with population aging, the burden of chronic disease, functional decline, healthcare workforce shortages, rising healthcare expenditures, and expanding demand for home-based healthcare services.

The framework is founded on the principle that healthcare systems should prioritize preservation of function alongside disease management. Although modern healthcare has successfully extended life expectancy, many individuals continue to experience preventable declines in mobility, independence, participation, and quality of life.

The concept of Functional Longevity serves as the theoretical foundation of the framework.

Functional Longevity is defined as the preservation of mobility, independence, participation, resilience, and quality of life throughout the aging process.

Unlike traditional healthcare models that primarily focus on treating disease, Functional Longevity emphasizes maintaining an individual's capacity to perform meaningful activities and to remain actively engaged in daily life.

The framework proposes that successful aging should be measured not only by years lived but also by the quality and functionality of those years. To operationalize this concept, the FLICF™ integrates five interconnected pillars designed to address major determinants of healthy aging and healthcare sustainability.

4.2 Pillar 1 – Early Functional Assessment

Functional decline frequently develops gradually and may remain unrecognized until significant disability has already occurred.

The first pillar focuses on early identification of risk factors associated with mobility loss, falls, reduced independence, and declining functional performance.

Routine assessments should evaluate:

- Mobility
- Balance
- Strength
- Endurance
- Gait performance
- Fall risk
- Functional independence
- Cognitive status
- Home safety

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The objective of this pillar is to shift healthcare systems from reactive intervention toward proactive prevention.

Expected Outcomes

- Earlier identification of risk factors
- Reduced incidence of falls
- Improved preventive care planning
- Enhanced monitoring of functional status
- Preservation of independence

4.3 Pillar 2 – Preventive Rehabilitation

Preventive Rehabilitation represents the clinical core of the framework.

Traditionally, rehabilitation services are introduced after injury, hospitalization, surgery, or disability. The FLICF™ proposes a broader role in which rehabilitation functions as a preventive healthcare strategy designed to preserve function before significant decline occurs.

Potential interventions include:

- Strength training
- Balance training
- Mobility programs
- Endurance conditioning
- Functional training
- Fall prevention initiatives
- Physical activity promotion

By addressing modifiable risk factors early, preventive rehabilitation may reduce disability progression and improve long-term outcomes.

Expected Outcomes

- Improved mobility
- Increased strength and balance
- Reduced fall risk
- Greater physical activity participation
- Delayed disability progression
- Enhanced quality of life

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4.4 Pillar 3 – Integrated Home-Based Healthcare

Healthy aging occurs primarily within homes and communities rather than hospitals.

Home-based healthcare provides a unique opportunity to deliver patient-centered interventions within real-world environments where daily activities occur.

Potential services include:

- Skilled nursing care
- Physical therapy
- Occupational therapy
- Medication management
- Chronic disease monitoring
- Telehealth support
- Caregiver education
- Home safety assessments

The framework positions home-based healthcare as a central component of healthy aging rather than a secondary service.

Expected Outcomes

- Increased healthcare accessibility
- Improved continuity of care
- Enhanced patient satisfaction
- Better chronic disease management
- Support for aging in place
- Reduced avoidable hospitalizations

4.5 Pillar 4 – Post-Discharge Continuity Programs

Transitions between healthcare settings represent periods of increased vulnerability.

Hospital discharge is frequently associated with medication errors, inadequate follow-up, reduced functional status, and avoidable readmissions.

The continuity pillar promotes structured follow-up through:

- Post-discharge contact
- Medication review
- Functional reassessment
- Care plan adjustment

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- Interdisciplinary communication
- Caregiver support

The objective is to ensure continuity throughout the healthcare continuum and reduce fragmentation of care.

Expected Outcomes

- Reduced hospital readmissions
- Improved patient safety
- Better care coordination
- Enhanced chronic disease management
- Improved healthcare efficiency

4.6 Pillar 5 – Healthcare Workforce Development

Healthcare workforce shortages are among the most significant threats to future access to healthcare. The FLICF™ recognizes workforce preparedness as a critical determinant of successful healthy aging initiatives.

Recommended strategies include:

- Continuing professional education
- Geriatric competency development
- Interdisciplinary training
- Leadership development
- Home healthcare education
- Fall prevention certification programs

Unlike many healthcare models, this one incorporates workforce development directly into the framework as a core operational pillar.

Expected Outcomes

- Increased workforce competency
- Improved workforce retention
- Enhanced interdisciplinary collaboration
- Greater healthcare accessibility
- Improved patient outcomes

4.7 Integrated Operational Model

The five pillars function as a coordinated and interdependent system.

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Early Functional Assessment identifies risk factors.

Preventive Rehabilitation addresses modifiable causes of decline.

Home-Based Healthcare delivers interventions within daily living environments.

Continuity Programs support long-term follow-up and care transitions.

Workforce Development ensures healthcare professionals possess the competencies required to sustain implementation.

Together, these components create a continuous cycle focused on preserving function, promoting independence, reducing disability, and supporting healthy aging.

4.8 Expected Impact of the Framework

The Functional Longevity Integrated Care Framework is expected to generate benefits across multiple levels.

Individual Outcomes

- Improved mobility
- Reduced fall risk
- Greater independence
- Enhanced quality of life
- Increased participation in daily activities

Healthcare Outcomes

- Reduced hospitalizations
- Reduced readmissions
- Improved continuity of care
- Better chronic disease management

Workforce Outcomes

- Enhanced professional competencies
- Improved interdisciplinary collaboration
- Increased workforce preparedness

System Outcomes

- Greater healthcare accessibility
- Improved healthcare sustainability
- More efficient resource utilization
- Improved population health outcomes

The framework provides a practical model through which healthcare systems may address

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contemporary challenges associated with aging populations while promoting healthier, more independent, and more sustainable aging trajectories.

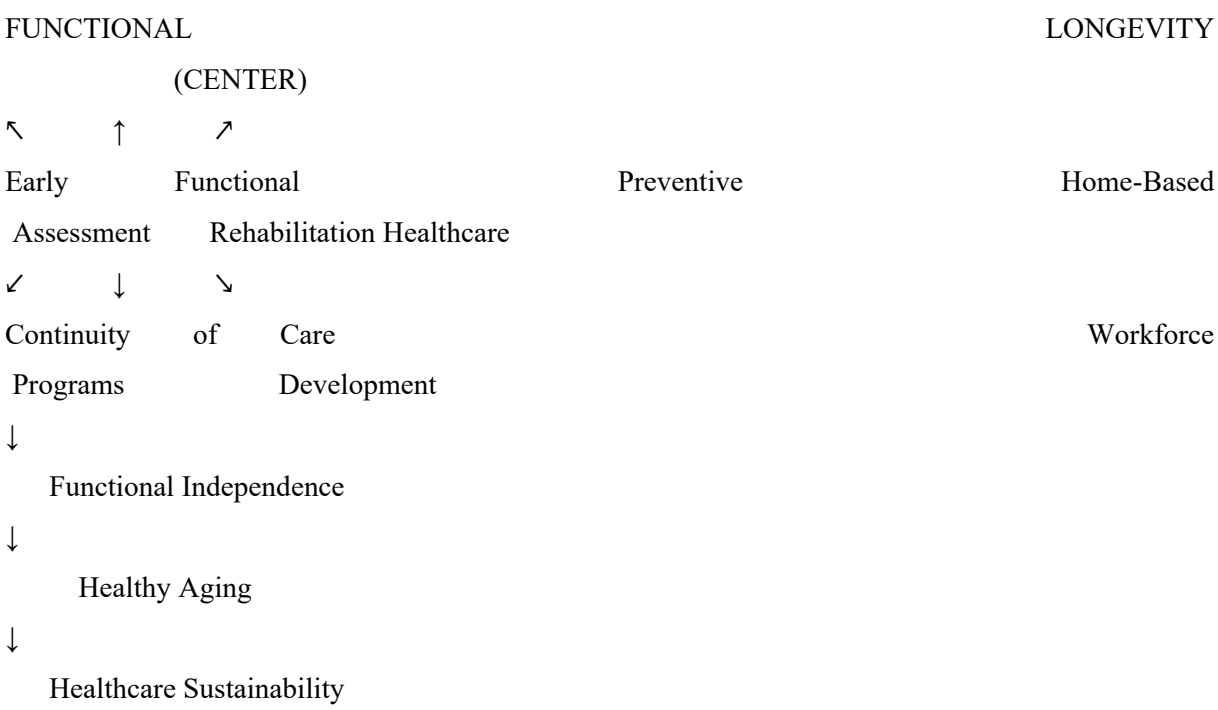

Figure 1. Functional Longevity Integrated Care Framework (FLICF™). The framework positions Functional Longevity as the central organizing principle and integrates five interdependent pillars—Early Functional Assessment, Preventive Rehabilitation, Integrated Home-Based Healthcare, Post-Discharge Continuity Programs, and Healthcare Workforce Development—to promote functional independence, healthy aging, and healthcare sustainability.

5. DISCUSSION

5.1 From Disease-Centered Care to Function-Centered Care

The Functional Longevity Integrated Care Framework (FLICF™) was developed in response to the growing recognition that traditional healthcare models may be insufficient to address the complex needs of aging populations.

Historically, healthcare systems have focused primarily on disease diagnosis, treatment, and mortality reduction. While these objectives remain essential, they do not fully address the broader consequences of aging, including loss of mobility, reduced independence, social isolation, caregiver burden, and declining quality of life.

As populations age, healthcare systems must increasingly focus on preserving individuals' c

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ability to function independently in daily life. The FLICF™ proposes a shift from disease-centered care to function-centered care, in which mobility, participation, resilience, and independence become primary healthcare objectives. This perspective reflects contemporary movements toward healthy aging, healthspan optimization, patient-centered care, and value-based healthcare delivery.

Table 1. Summary of the Five Pillars of the FLICF™

Pilar	**Objetivo Principal**	**Resultado Esperado**
Avaliação Funcional Precoce (Early Functional Assessment)	Identificar riscos de forma antecipada	Prevenção do declínio funcional
Reabilitação Preventiva (Preventive Rehabilitation)	Preservar a mobilidade e a funcionalidade	Redução da incapacidade
Assistência Integrada Domiciliar (Integrated Home-Based Healthcare)	Oferecer cuidados em ambientes reais de vida	Envelhecimento no próprio lar (*aging in place*)
Programas de Continuidade Pós-Alta (Post-Discharge Continuity Programs)	Melhorar as transições do cuidado	Redução das reinternações
Desenvolvimento da Força de Trabalho em Saúde (Healthcare Workforce Development)	Fortalecer a capacidade dos profissionais de saúde	Prestação sustentável de serviços de saúde

5.2 Functional Longevity as a Healthcare Objective

A central contribution of this manuscript is the introduction of Functional Longevity as an organizing principle for healthcare planning and delivery.

Traditional measures of healthcare success frequently emphasize lifespan, disease-specific outcomes, and healthcare utilization metrics. While these indicators remain valuable, they may not adequately capture the quality of life experienced by aging individuals.

Functional Longevity expands this perspective by emphasizing preservation of:

- Mobility
- Independence
- Participation
- Resilience
- Quality of life

throughout the aging process.

Under this model, successful aging is defined not merely by survival but by the ability to remain functionally capable, socially engaged, and actively involved in meaningful daily activities.

This broader perspective aligns with emerging international efforts to promote healthy aging

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and preserve healthspan across populations.

5.3 Rehabilitation as Prevention

One of the most distinctive aspects of the FLICF™ is its repositioning of rehabilitation within the healthcare continuum.

Traditionally, rehabilitation services are introduced after disability, injury, surgery, or hospitalization. The framework proposes that rehabilitation should also function as a preventive healthcare strategy.

Evidence consistently demonstrates that exercise, mobility programs, balance training, strength development, and functional interventions can reduce the risk of disability and improve long-term outcomes among older adults.

By intervening earlier, healthcare systems may reduce the progression of functional decline while improving quality of life and preserving independence.

This preventive approach may represent an important evolution in the integration of rehabilitation services into healthy aging initiatives.

5.4 The Strategic Role of Home-Based Healthcare

The framework recognizes that healthy aging occurs primarily within homes and communities rather than hospitals.

Although hospital-based care remains essential, the majority of functional challenges experienced by aging individuals occur within daily living environments.

Home-based healthcare offers unique opportunities to:

- Assess environmental risks
- Evaluate real-world functional performance
- Support caregivers
- Improve accessibility
- Monitor chronic diseases
- Promote aging in place

By integrating home-centered care into the framework, the FLICF™ supports a more comprehensive approach to aging that extends beyond episodic healthcare encounters.

The increasing adoption of telehealth and community-based healthcare models further strengthens the relevance of this pillar.

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5.5 Workforce Development as a Determinant of Healthcare Outcomes

Healthcare workforce shortages represent one of the greatest challenges facing healthcare systems worldwide.

Many healthy aging initiatives focus primarily on patient interventions while overlooking the workforce capacity needed to implement them effectively.

The FLICF™ introduces workforce development as a core component of healthcare delivery rather than an administrative consideration.

This perspective recognizes that healthcare outcomes depend not only on clinical interventions but also on the availability of trained professionals to deliver them.

Investment in education, continuing professional development, interdisciplinary collaboration, and geriatric competency development may therefore be viewed as investments in population health outcomes.

5.6 Integration Across the Healthcare Continuum

Fragmentation remains a persistent challenge within healthcare systems.

Patients frequently transition among hospitals, rehabilitation centers, outpatient clinics, home healthcare agencies, and community services. These transitions may contribute to communication failures, medication errors, functional decline, and avoidable hospital readmissions.

The FLICF™ addresses this issue by integrating assessment, rehabilitation, home-based healthcare, continuity programs, and workforce development into a unified framework.

This integrated structure may improve coordination while reducing gaps in care delivery.

Rather than functioning as isolated interventions, the five pillars operate as mutually reinforcing components designed to support long-term functional outcomes.

5.7 Innovation and Original Contribution

The primary innovation of the Functional Longevity Integrated Care Framework lies in integrating multiple evidence-based healthcare domains into a single multidisciplinary model.

Existing healthcare approaches frequently address rehabilitation, home healthcare, continuity of care, workforce development, and functional assessment independently.

The FLICF™ brings these components together through a shared objective: preservation of functional independence throughout the aging process.

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To the author's knowledge, few conceptual frameworks have incorporated workforce development, preventive rehabilitation, continuity of care, and home-based healthcare as equally weighted pillars within a single healthy aging model.
This integration represents the framework's principal original contribution.

5.8 Implications for Healthcare Systems

The framework has implications for healthcare organizations, educational institutions, public health agencies, home healthcare providers, and policymakers.
Potential benefits include:

- Reduced functional decline
- Reduced fall-related injuries
- Improved mobility
- Better continuity of care
- Enhanced workforce preparedness
- Increased healthcare accessibility
- Improved healthcare sustainability

Although future implementation studies are required, the framework provides a practical foundation for healthcare innovation focused on healthy aging and preservation of independence.

5.9 Discussion Summary

The Functional Longevity Integrated Care Framework proposes a multidisciplinary approach to address many of the healthcare challenges associated with aging populations.
By integrating preventive rehabilitation, functional assessment, home-based healthcare, continuity of care, and workforce development into a unified model, the framework shifts healthcare priorities toward preservation of function and long-term independence.
Its principal contribution lies in demonstrating how Functional Longevity can serve as a unifying objective that guides clinical practice, workforce development, healthcare innovation, and future healthy aging initiatives.

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6. NATIONAL IMPACT AND POLICY IMPLICATIONS

6.1 Population Aging as a National Healthcare Challenge

The United States is experiencing one of the most significant demographic transitions in its history. Continued increases in life expectancy, combined with declining fertility rates, have contributed to a rapidly expanding older adult population.

This demographic transformation has substantial implications for healthcare delivery, workforce planning, public health initiatives, long-term care services, caregiver support systems, and healthcare expenditures.

As the number of older adults continues to grow, healthcare systems must develop strategies to preserve independence, reduce preventable disability, and maintain the sustainability of healthcare.

The Functional Longevity Integrated Care Framework (FLICF™) was developed in response to these emerging challenges and provides a structured model that supports healthy aging while strengthening the healthcare system's capacity.

6.2 Reducing the Burden of Functional Decline

Functional decline represents one of the primary drivers of healthcare utilization among aging populations.

Loss of mobility, balance impairment, reduced endurance, and declining independence frequently contribute to:

- Falls
- Emergency department utilization
- Hospital admissions
- Hospital readmissions
- Long-term care placement
- Increased caregiver burden

These outcomes generate high costs for individuals, families, healthcare organizations, and public health systems.

The FLICF™ seeks to interrupt this progression through early identification of risk factors, preventive rehabilitation, continuity of care, and home-based interventions.

By preserving function before disability develops, healthcare systems may reduce avoidable utilization while improving quality of life and long-term outcomes.

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6.3 Supporting Aging in Place

Most older adults prefer to remain within their homes and communities as they age.

Aging in place has become a major objective of healthcare planning because it promotes autonomy, social participation, community engagement, and quality of life.

The FLICF™ supports aging in place through:

- Home-based healthcare services
- Functional assessments
- Caregiver education
- Preventive rehabilitation
- Community-based interventions
- Telehealth integration

These strategies may help older adults maintain independence while reducing reliance on institutional care settings. The framework, therefore, aligns with contemporary healthcare priorities focused on person-centered and community-based care.

6.4 Addressing Healthcare Workforce Shortages

Healthcare workforce shortages are among the most pressing challenges facing the United States.

Increasing demand for healthcare services, combined with workforce retirement, burnout, and educational limitations, has created shortages across multiple disciplines, including:

- Nursing
- Physical therapy
- Occupational therapy
- Home healthcare
- Geriatric care
- Community-based services

The FLICF™ recognizes workforce preparedness as a fundamental requirement for successful healthy aging initiatives.

Recommended workforce strategies include:

- Continuing professional education
- Geriatric competency development
- Interdisciplinary training

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- Leadership development
- Home healthcare specialization
- Prevention-focused clinical education

By strengthening workforce capacity, healthcare systems may improve accessibility while enhancing the quality of care.

6.5 Economic and Healthcare Sustainability Implications

Population aging creates increasing pressure on healthcare expenditures.

Costs associated with chronic disease management, falls, hospitalization, long-term care, and caregiver support continue to rise as populations age.

The FLICF™ proposes that investments in prevention, rehabilitation, continuity of care, home-based healthcare, and workforce development may contribute to more efficient use of healthcare resources.

Potential economic benefits include:

- Reduced hospital admissions
- Reduced readmissions
- Reduced fall-related injuries
- Delayed institutionalization
- Improved care coordination
- Better allocation of healthcare resources

Although additional economic studies are required, the framework suggests a pathway toward improved healthcare sustainability.

6.6 Public Health Significance

The framework extends beyond individual clinical care and aligns closely with broader public health objectives.

Healthy aging is influenced not only by healthcare services but also by:

- Physical activity
- Environmental safety
- Social participation
- Health literacy
- Community engagement
- Access to preventive services

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The FLICF™ supports a population-health perspective by promoting interventions that address these determinants throughout the aging process.

This approach may contribute to:

- Reduced disability burden
- Increased community participation
- Improved quality of life
- Greater health equity
- Enhanced population health outcomes

6.7 Alignment with National and International Healthy Aging Initiatives

The principles underlying the FLICF™ align with the goals of the United Nations Decade of Healthy Aging 2021–2030, which emphasize functional ability, healthy aging, and person-centered care.

These include:

- Healthy Aging initiatives in the United States
- Age-Friendly Health Systems
- Integrated care models for older adults
- Community-based aging programs
- Workforce development initiatives
- Preventive health strategies

This alignment increases the framework's potential applicability across healthcare organizations, academic institutions, public health agencies, and policy initiatives.

6.8 Policy Recommendations

Based on the principles of Functional Longevity, policymakers should consider:

1. Expanding access to preventive rehabilitation services.
2. Supporting home-based healthcare programs.
3. Encouraging routine functional assessment among aging populations.
4. Investing in healthcare workforce development.
5. Strengthening continuity-of-care initiatives.
6. Supporting interdisciplinary healthcare models.
7. Promoting healthy aging and aging-in-place strategies.
8. Expanding research related to Functional Longevity.

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These initiatives may improve healthcare outcomes while supporting long-term sustainability.

6.9 National Impact Summary

The Functional Longevity Integrated Care Framework provides a multidisciplinary strategy to address several national healthcare priorities.

By promoting preservation of function, supporting aging in place, strengthening workforce preparedness, improving continuity of care, and reducing preventable disability, the framework offers a practical pathway toward healthier aging populations and more sustainable healthcare systems.

Its potential impact extends beyond individual patient outcomes and includes broader benefits for healthcare organizations, public health systems, workforce development initiatives, caregivers, and policymakers.

As population aging continues to reshape healthcare delivery, Functional Longevity may serve as an important organizing principle for future healthcare innovation and policy development in the United States.

7. INNOVATION AND ORIGINAL CONTRIBUTION

7.1 Introduction

7.1 Innovation Statement

The primary innovation of the Functional Longevity Integrated Care Framework (FLICF™) is the introduction of Functional Longevity as a unifying healthcare objective that integrates functional assessment, preventive rehabilitation, home-based healthcare, continuity of care, and workforce development within a single multidisciplinary framework.

While each of these domains has been addressed independently in existing healthcare models, the FLICF™ proposes a coordinated structure centered on preservation of functional independence throughout the aging process. By shifting healthcare priorities from disease-centered outcomes toward long-term functional outcomes, the framework introduces a novel conceptual approach to healthy aging, healthcare sustainability, and population health planning.

7.2 Functional Longevity as a Novel Organizing Principle

The primary conceptual innovation of the FLICF™ is the introduction of Functional Longevity

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as a central healthcare objective.

Traditional healthcare models frequently prioritize:

- Disease treatment
- Mortality reduction
- Clinical indicators
- Acute care outcomes

While these objectives remain essential, they may not adequately capture the broader goals of successful aging.

The concept of Functional Longevity expands healthcare priorities by emphasizing:

- Mobility preservation
- Functional independence
- Participation in daily life
- Resilience
- Quality of life

throughout the aging process.

This perspective shifts attention from simply extending lifespan to maximizing function during those additional years of life.

7.3 Integration of Five Interdependent Pillars

A distinguishing feature of the framework is its integration of five evidence-based domains into a single operational model:

1. Early Functional Assessment
2. Preventive Rehabilitation
3. Integrated Home-Based Healthcare
4. Post-Discharge Continuity Programs
5. Healthcare Workforce Development

Although each of these domains has been studied independently, they are rarely incorporated into a unified framework with a shared objective of preserving functional independence.

The FLICF™ establishes a structured relationship among these domains, creating a coordinated system rather than a collection of isolated interventions.

7.4 Reframing Rehabilitation as Prevention

Another innovative aspect of the framework is the repositioning of rehabilitation within the

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healthcare continuum.

Traditionally, rehabilitation services are introduced after injury, hospitalization, surgery, or disability.

The FLICF™ proposes a broader role for rehabilitation as a preventive healthcare strategy that can delay or prevent functional decline.

This preventive perspective may help healthcare systems intervene earlier, reduce the risk of disability, and improve long-term outcomes among aging populations.

7.5 Workforce Development as a Core Healthcare Strategy

Most healthy aging frameworks focus primarily on patient care interventions.

The FLICF™ differs in that it incorporates workforce development as a central operational pillar. The framework recognizes that healthcare outcomes depend not only on clinical interventions but also on the availability of trained professionals capable of delivering those interventions effectively.

By integrating workforce preparedness directly into the model, the framework expands the discussion of healthy aging beyond patient care and addresses one of the most significant challenges facing contemporary healthcare systems.

7.6 Bridging Clinical Care and Public Health

The framework also contributes a broader systems perspective by connecting individual clinical interventions with population health objectives.

The FLICF™ links:

- Functional assessment
- Rehabilitation
- Home healthcare
- Care continuity
- Workforce preparedness

to broader goals, including:

- Healthy aging
- Aging in place
- Disability prevention
- Healthcare accessibility
- Healthcare sustainability

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This integration allows the framework to operate simultaneously at individual, organizational, and population levels.

Public Interest Relevance

The framework was designed to address substantial national healthcare challenges, including disability prevention, healthy aging, workforce preparedness, healthcare accessibility, and long-term healthcare sustainability. By promoting preservation of functional independence across aging populations, the FLICF™ has potential implications for public health outcomes, healthcare expenditures, and quality of life at both individual and population levels.

7.7 Original Contribution

To the author's knowledge, the Functional Longevity Integrated Care Framework is among the first multidisciplinary models specifically designed around preservation of functional independence as the primary organizing principle for healthy aging.

Its original contribution lies not in the creation of entirely new healthcare interventions but in the strategic integration of existing evidence-based practices into a comprehensive framework that addresses multiple aging-related healthcare challenges simultaneously.

The framework, therefore, provides both a conceptual contribution and a practical implementation model for future research, healthcare innovation, workforce development initiatives, and policy planning.

To the author's knowledge, no previously published healthy aging framework has combined preventive rehabilitation, integrated home-based healthcare, continuity-of-care programs, healthcare workforce development, and preservation of functional independence as equally weighted operational pillars organized under a single function-centered healthcare objective termed Functional Longevity. The FLICF™, therefore, represents a novel conceptual contribution that bridges clinical care, public health, workforce preparedness, and healthcare sustainability within a unified healthy aging strategy.

The original contribution of the FLICF™ lies not in proposing isolated interventions, but in establishing Functional Longevity as a unifying healthcare objective that organizes assessment, prevention, rehabilitation, home-based care, continuity of care, and workforce development within a single coordinated framework. This integrated structure represents a new conceptual approach to healthy aging and healthcare sustainability

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7.8 Innovation Summary

The innovation of the Functional Longevity Integrated Care Framework may be summarized through four principal contributions:

1. Introduction of Functional Longevity as a healthcare objective.
2. Integration of five interdependent pillars into a unified model.
3. Repositioning rehabilitation as a preventive healthcare strategy.
4. Incorporation of workforce development as a determinant of healthy aging outcomes.

Together, these innovations provide a new perspective for addressing population aging while supporting functional independence, quality of life, and healthcare sustainability.

Table 2. Comparative Analysis of Healthy Aging Approaches and the Functional Longevity Integrated Care Framework (FLICF™)

Framework Component	**Traditional Disease-Centered Models**	**Fall Prevention Programs**	**Home-Based Care Models**	**FLICF™**
Disease Management	✓	Partial	Partial	✓
Functional Assessment	Limited	✓	Partial	✓
Preventive Rehabilitation	Limited	Partial	Partial	✓
Home-Based Healthcare	Limited	Limited	✓	✓
Continuity of Care	Limited	Limited	Partial	✓
Workforce Development	Rare	Rare	Rare	✓
Functional Independence as Primary Goal	Rare	Partial	Partial	✓
Integrated Multidisciplinary Structure	Limited	No	Partial	✓

Source: Developed by the authors (2026).

Table 3. Novel Contributions of the Functional Longevity Integrated Care Framework (FLICF™)

Novel Contribution	**Description**
Functional Longevity	Introduces a new healthcare objective focused on preserving mobility, independence, participation, resilience, and quality of life.
Five-Pillar Integrated Model	Integrates functional assessment, preventive rehabilitation, home-based healthcare, continuity of care, and workforce development within a unified framework.
Workforce Development Integration	Positions workforce preparedness as a core operational component of healthy aging rather than a secondary administrative consideration.
Function-Centered Healthcare Approach	Shifts healthcare priorities from disease-centered outcomes toward long-term functional independence and healthspan optimization.

Source: Developed by the authors (2026).

"The contributions summarized in Table 3 highlight the principal innovations that distinguish the Functional Longevity Integrated Care Framework from existing healthy aging approaches.

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Together, these innovations establish Functional Longevity as a new organizing principle capable of guiding healthcare practice, workforce development, healthcare policy, and future aging-related research."

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8. PROPOSED PILOT PROGRAM AND IMPLEMENTATION STRATEGY

8.1 Introduction

Conceptual healthcare frameworks achieve their greatest value when translated into practical interventions that generate measurable outcomes. Although the Functional Longevity Integrated Care Framework (FLICF™) was initially developed as a conceptual model, its principles may be operationalized through pilot programs designed to evaluate feasibility, effectiveness, scalability, and long-term impact.

The proposed pilot program provides an implementation pathway for healthcare organizations to test Functional Longevity strategies, strengthen workforce preparedness, and improve continuity of care.

The pilot program is intended to serve as a foundation for future clinical research, healthcare innovation initiatives, workforce development programs, and policy evaluation efforts.

Current discussions explore the potential application of the Functional Longevity Integrated Care Framework (FLICF™) in pilot initiatives to evaluate feasibility, implementation strategies, and functional outcomes among aging populations. These exploratory efforts may provide valuable insights regarding the framework's practical applicability and inform future large-scale implementation studies.

8.2 Objectives of the Pilot Program

The primary objective of the pilot program is to evaluate whether a structured Functional

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Longevity approach can improve health outcomes while reducing preventable healthcare utilization among aging populations.

Specific objectives include:

- Preserving functional independence
- Improving mobility
- Reducing fall risk
- Enhancing quality of life
- Supporting aging in place
- Reducing avoidable hospitalizations
- Reducing hospital readmissions
- Strengthening continuity of care
- Expanding workforce competencies in healthy aging

A secondary objective is to generate real-world data to support future large-scale implementation.

8.3 Target Population

The pilot program may be implemented among adults at increased risk of functional decline.

Potential participant groups include:

Group A – Community-Dwelling Older Adults

Adults aged 65 years and older who live independently within the community.

Group B – Recently Discharged Patients

Individuals transitioning from hospitals to home environments following acute illness, surgery, or hospitalization.

Group C – Individuals with Chronic Diseases

Patients diagnosed with conditions associated with increased risk of disability, including:

- Diabetes mellitus
- Cardiovascular disease
- Osteoarthritis
- Stroke
- Parkinson's disease
- Chronic respiratory disorders

Group D – Individuals at Elevated Fall Risk

Persons presenting with:

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- Previous falls
- Balance deficits
- Mobility limitations
- Muscle weakness
- Environmental safety concerns

8.4 Program Components

The pilot program incorporates all five pillars of the Functional Longevity Integrated Care Framework.

Component 1 – Functional Screening

Participants undergo a comprehensive baseline assessment, including:

- Mobility evaluation
- Balance assessment
- Strength testing
- Functional independence measures
- Fall risk screening
- Home safety evaluation

This assessment establishes baseline status and identifies areas requiring intervention.

Component 2 – Preventive Rehabilitation

Participants receive individualized intervention plans that may include:

- Strength training
- Balance training
- Walking programs
- Endurance activities
- Functional mobility exercises
- Fall prevention strategies

Programs are tailored according to individual goals and risk profiles.

Component 3 – Home-Based Healthcare Services

When appropriate, services may be delivered within participants' homes.

Potential interventions include:

- Physical therapy
- Nursing care
- Home safety assessments

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- Medication management support
- Caregiver education
- Telehealth follow-up

Component 4 – Continuity of Care

Structured follow-up is provided following significant healthcare events.

Activities include:

- Post-discharge contact
- Functional reassessment
- Care plan review
- Outcome monitoring
- Interdisciplinary communication

Component 5 – Workforce Development

Participating healthcare professionals receive specialized education in:

- Healthy aging
- Functional assessment
- Fall prevention
- Home healthcare delivery
- Interdisciplinary collaboration
- Functional Longevity principles

8.5 Workforce Development Model

A distinguishing feature of the pilot program is the integration of workforce education into service delivery.

Educational initiatives may include:

Continuing Professional Education

Training focused on evidence-based healthy aging practices.

Interdisciplinary Team Training

Programs designed to improve collaboration among healthcare professionals.

Mentorship Initiatives

Support for clinicians entering aging-related healthcare fields.

Community Outreach Activities

Public education initiatives promoting healthy aging and prevention.

This approach simultaneously improves patient care and workforce preparedness.

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8.6 Outcome Measures

Program effectiveness should be evaluated using standardized outcome measures.

Functional Outcomes

- Gait speed
- Balance performance
- Functional Independence Measures (FIM)
- Mobility assessments

Clinical Outcomes

- Falls
- Hospitalizations
- Readmissions
- Emergency department visits

Quality of Life Outcomes

- Patient satisfaction
- Self-reported health status
- Social participation
- Independence measures

Workforce Outcomes

- Educational participation
- Competency development
- Interdisciplinary collaboration
- Workforce retention

8.7 Expected Benefits

Individual Benefits

- Improved mobility
- Reduced disability
- Greater independence
- Enhanced quality of life

Organizational Benefits

- Improved care coordination
- Better continuity of care

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- Reduced avoidable utilization
- Improved patient satisfaction

Workforce Benefits

- Increased competencies
- Improved preparedness
- Enhanced interdisciplinary collaboration

Healthcare System Benefits

- Greater sustainability
- Improved accessibility
- Better resource utilization
- Improved population health outcomes

8.8 Pathway Toward National Expansion

Following successful pilot implementation, the framework may be adapted for:

- Hospitals
- Academic medical centers
- Rehabilitation organizations
- Home healthcare agencies
- Community health programs
- Public health initiatives
- Aging services networks

Longitudinal outcome studies may provide evidence supporting broader implementation and future policy development.

8.9 Implementation Summary

The proposed pilot program demonstrates how the Functional Longevity Integrated Care Framework can be translated into measurable healthcare interventions. Through the integration of functional assessment, preventive rehabilitation, home-based healthcare, continuity of care, and workforce development, the program provides a realistic pathway to improving healthy aging outcomes while strengthening the healthcare system's capacity.

The pilot program serves as a bridge between conceptual innovation and practical implementation, creating opportunities for future research, healthcare innovation, and policy advancement.

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9. ECONOMIC IMPACT AND COST-EFFECTIVENESS CONSIDERATIONS

9.1 Introduction

Population aging presents not only clinical and public health challenges but also significant economic implications. Healthcare expenditures associated with chronic diseases, disability, falls, hospitalizations, long-term care services, and caregiver burden continue to increase as populations age. Consequently, healthcare systems must identify strategies that improve outcomes while maintaining financial sustainability.

The Functional Longevity Integrated Care Framework (FLICF™) was developed with the recognition that preservation of function may offer substantial economic benefits by reducing preventable healthcare utilization and delaying disability. Although additional economic evaluation studies are required, the framework provides a conceptual basis for understanding how investments in prevention, rehabilitation, continuity of care, home-based healthcare, and workforce development may influence healthcare costs over time.

9.2 The Economic Burden of Population Aging

Older adults account for a substantial proportion of healthcare expenditures within the United States healthcare system.

Several factors contribute to increased spending among aging populations, including:

- Hospital admissions
- Emergency department utilization
- Long-term care services
- Rehabilitation needs
- Medication utilization
- Caregiver support requirements
- Management of chronic diseases

As longevity increases, healthcare systems must prepare for greater demand across these services. Without effective preventive strategies, healthcare expenditures are expected to continue rising. This reality highlights the importance of healthcare models that preserve independence and reduce avoidable healthcare utilization.

9.3 Functional Decline as a Cost Driver

The FLICF™ identifies functional decline as a major contributor to healthcare costs.

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Loss of mobility and independence frequently initiates a progression of events associated with increasing healthcare utilization:

Functional Decline

↓

Reduced Physical Activity

↓

Falls

↓

Injury

↓

Hospitalization

↓

Readmission

↓

Long-Term Care Placement

Each stage of this progression may generate high costs for healthcare systems, families, and communities.Preventing or delaying functional decline, therefore, represents an important economic objective.

The framework seeks to interrupt this cascade through early intervention and preventive care strategies.

9.4 Falls and Healthcare Expenditures

Falls are among the most costly and preventable health events affecting older adults.

Consequences frequently include:

- Fractures
- Emergency department visits
- Hospital admissions
- Surgical procedures
- Rehabilitation services
- Long-term disability
- Institutional care placement

The economic burden extends beyond direct medical expenses and includes caregiver burden, productivity losses, transportation costs, and diminished quality of life.

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Preventive rehabilitation programs designed to improve strength, balance, mobility, and functional performance may reduce fall risk and, in turn, lower healthcare expenditures.

Preventing even a small percentage of fall-related events may yield substantial economic benefits at both the organizational and population levels.

9.5 Home-Based Healthcare and Cost Containment

Home-based healthcare has emerged as a potentially cost-effective strategy for supporting aging populations.

Potential benefits include:

- Reduced transportation barriers
- Improved access to care
- Early identification of complications
- Improved continuity of care
- Reduced hospitalization rates
- Greater patient satisfaction

By delivering services within home environments, healthcare professionals may identify problems earlier and implement interventions before more costly complications develop.

The FLICF™ positions home-based healthcare as a central component of sustainable healthcare delivery. This approach aligns with growing interest in community-based healthcare models and aging-in-place initiatives.

9.6 Continuity of Care and Readmission Reduction

Hospital readmissions represent a major source of healthcare expenditure.

Many readmissions are associated with:

- Medication-related issues
- Functional decline
- Inadequate follow-up
- Care fragmentation
- Poor transition planning

The continuity pillar of the FLICF™ seeks to address these challenges through structured follow-up, interdisciplinary communication, and ongoing monitoring.

Reducing avoidable readmissions may yield both clinical and economic benefits and improve patient outcomes.

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9.7 Workforce Development as an Economic Investment

Healthcare workforce development is frequently viewed solely as an operational expense.
The FLICF™ proposes an alternative perspective.
Education, training, competency development, and workforce preparedness should be viewed as long-term investments that can improve healthcare quality, efficiency, and sustainability.
Potential workforce-related benefits include:

- Improved clinical decision-making
- Better care coordination
- Reduced preventable complications
- Increased workforce retention
- Enhanced patient satisfaction
- Greater healthcare accessibility

These improvements may contribute indirectly to economic sustainability while strengthening the performance of the healthcare system.

9.8 Cost-Effectiveness Perspective

The economic philosophy underlying the FLICF™ may be summarized through a simple principle:
Preventing disability is often less costly than managing advanced disability.
Similarly:

- Preventing falls is often less costly than treating fractures.
- Preventing readmissions is often less costly than repeated hospitalization.
- Preventing functional decline is often less costly than institutional care.
- Preserving independence is often less costly than long-term dependency.

The framework, therefore, prioritizes interventions that occur earlier in the healthcare continuum, where opportunities for prevention are greatest.

9.9 Potential Return on Investment

Although empirical evaluation is required, the framework suggests several potential areas of return on investment.
Individual Level

- Greater independence

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- Reduced disability
- Improved quality of life
- Increased participation in daily activities

Organizational Level

- Reduced readmissions
- Improved patient outcomes
- Better service efficiency
- Improved care coordination

Healthcare System Level

- Reduced healthcare expenditures
- Better allocation of resources
- Increased sustainability
- Improved population health outcomes

These benefits suggest that investments in Functional Longevity initiatives may generate value beyond traditional healthcare metrics.

9.10 Economic Impact Summary

The Functional Longevity Integrated Care Framework proposes that preservation of function should be viewed not only as a clinical objective but also as an economic strategy. By reducing functional decline, preventing falls, supporting aging in place, improving continuity of care, and strengthening workforce preparedness, the framework may contribute to more efficient use of healthcare resources and long-term healthcare sustainability.

Future pilot studies and economic evaluations should examine the cost-effectiveness of Functional Longevity interventions across diverse healthcare settings and populations. Such investigations may provide important evidence to support the broader implementation of Functional Longevity principles within healthcare systems.

10. STRENGTHS AND LIMITATIONS

10.1 Introduction

All conceptual frameworks possess both strengths and limitations. Identifying these characteristics is essential for scientific transparency and provides direction for future refinement, implementation, and research.

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The Functional Longevity Integrated Care Framework (FLICF™) was developed as a multidisciplinary model to address healthcare challenges associated with population aging, the burden of chronic disease, functional decline, home-based healthcare delivery, continuity of care, and workforce preparedness.

The following section outlines the principal strengths and limitations of the framework.

10.2 Strengths

Multidisciplinary Integration

One of the principal strengths of the FLICF™ is its integration of multiple healthcare domains into a single conceptual model.

The framework combines:

- Functional assessment
- Preventive rehabilitation
- Home-based healthcare
- Continuity of care
- Workforce development

This integrated structure reflects the complex and interconnected nature of aging-related healthcare needs.

Rather than addressing individual challenges in isolation, the framework coordinates multiple interventions around a common objective: preservation of functional independence.

Function-Centered Approach

Many healthcare systems remain organized around disease-specific models of care.

The FLICF™ introduces a function-centered perspective that prioritizes:

- Mobility
- Independence
- Participation
- Resilience
- Quality of life

This approach aligns with contemporary concepts of healthy aging, healthspan, and patient-centered care.

Scalability and Adaptability

The framework was intentionally designed to be adaptable across multiple healthcare environments.

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Potential implementation settings include:

- Hospitals
- Rehabilitation centers
- Home healthcare agencies
- Long-term care organizations
- Community health programs
- Academic institutions
- Public health initiatives

This flexibility increases the model's potential applicability across diverse healthcare systems.

Workforce Development Integration

A distinctive strength of the framework is the inclusion of workforce development as a core operational pillar.

Many healthy aging models focus primarily on patient care interventions while giving limited attention to workforce preparedness.

The FLICF™ recognizes that healthcare outcomes depend upon the availability of trained professionals capable of delivering effective interventions.

Alignment with Contemporary Healthcare Priorities

The framework aligns with several major healthcare priorities, including:

- Healthy aging
- Aging in place
- Home-based healthcare
- Prevention-focused care
- Continuity of care
- Workforce development
- Healthcare sustainability

This alignment enhances the framework's relevance to healthcare organizations, researchers, educators, and policymakers.

Need for Prospective Evaluation

The framework has not yet been evaluated through prospective clinical trials or longitudinal outcome studies.

Consequently, the magnitude of its potential impact on healthcare utilization, patient outcomes, and healthcare expenditures remains to be determined.

Variability Across Healthcare Systems

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Healthcare systems differ substantially with respect to:

- Workforce capacity
- Funding structures
- Access to services
- Regulatory environments
- Population characteristics

Implementation strategies may therefore require adaptation according to local healthcare contexts.

Economic Assumptions Require Validation

Although the framework proposes that preservation of function may reduce healthcare expenditures, these assumptions require formal economic evaluation.

Future cost-effectiveness studies should examine the financial outcomes associated with implementing Functional Longevity programs.

Workforce Implementation Challenges

Workforce implementation may present challenges in healthcare systems experiencing staffing shortages, financial constraints, limited access to geriatric training programs, and regional disparities in healthcare resources. Successful implementation of the FLICF™ may therefore require phased adoption strategies, institutional support, interdisciplinary collaboration, and workforce capacity-building initiatives tailored to local healthcare environments.

10.3 Limitations

As a newly proposed conceptual framework, the Functional Longevity Integrated Care Framework (FLICF™) has not yet undergone large-scale implementation across diverse healthcare settings. While the framework is supported by existing literature and extensive clinical experience, future pilot initiatives and implementation studies may further evaluate its practical application, scalability, and potential impact on healthcare outcomes.

These considerations do not diminish the framework's relevance; rather, they provide opportunities for future investigation and continued refinement.

10.4 Strengths and Limitations Summary

The Functional Longevity Integrated Care Framework (FLICF™) offers a multidisciplinary, function-centered approach that integrates preventive rehabilitation, home-based healthcare, continuity of care, and workforce development within a unified healthy aging strategy. Its

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adaptability across healthcare settings and alignment with contemporary healthcare priorities support its potential applicability at clinical, organizational, and population levels.

As an emerging conceptual framework, it may benefit from ongoing pilot initiatives and future implementation studies to further strengthen the evidence base supporting its application across diverse healthcare environments.

11. Future Research Directions

Although the Functional Longevity Integrated Care Framework (FLICF™) was developed as a conceptual model, future research is necessary to evaluate its effectiveness, scalability, and long-term impact across diverse healthcare environments.

Several areas warrant further investigation.

First, pilot implementation studies should assess the feasibility of integrating the five pillars within hospitals, rehabilitation centers, home healthcare agencies, and community-based programs.

Second, prospective longitudinal studies should evaluate the framework's impact on mobility, functional independence, fall incidence, hospitalizations, readmissions, quality of life, and healthcare utilization.

Third, economic analyses should examine the cost-effectiveness and return on investment of Functional Longevity interventions.

Additional studies should investigate workforce outcomes, including competency development, retention, interdisciplinary collaboration, and preparedness for aging-related healthcare needs.

Research exploring the framework's adaptation across rural, urban, and underserved populations may further strengthen its applicability and national relevance.

Future investigations will be essential for validating the framework and identifying optimal implementation strategies to support healthy aging and healthcare sustainability.

Preliminary interest in the Functional Longevity Integrated Care Framework (FLICF™) has emerged among healthcare professionals and stakeholders involved in healthy aging initiatives. Ongoing exploratory discussions regarding potential pilot implementation may inform future evaluation of the framework's effectiveness, scalability, and impact on the healthcare system.

CONCLUSION

Population aging represents one of the most significant healthcare challenges of the twenty-first century. While advances in medicine and public health have substantially increased life

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expectancy, healthcare systems continue to face growing burdens associated with chronic disease, functional decline, falls, workforce shortages, rising healthcare expenditures, and increasing demand for home-based services. These challenges require innovative strategies that promote healthy aging while preserving the sustainability of the healthcare system.

The Functional Longevity Integrated Care Framework (FLICF™) was developed in response to these converging challenges. The framework introduces Functional Longevity as a guiding healthcare principle focused on preserving mobility, independence, participation, resilience, and quality of life throughout the aging process. Through integration of Early Functional Assessment, Preventive Rehabilitation, Integrated Home-Based Healthcare, Post-Discharge Continuity Programs, and Healthcare Workforce Development, the framework provides a multidisciplinary model designed to support healthy aging across the healthcare continuum.

A distinguishing contribution of the FLICF™ is its shift from a predominantly disease-centered perspective toward a function-centered approach. Rather than measuring success solely through longevity or disease outcomes, the framework emphasizes preservation of functional independence as a primary healthcare objective. This perspective aligns with contemporary priorities related to healthspan, aging in place, patient-centered care, healthcare accessibility, and long-term sustainability.

The framework also highlights the importance of preventive rehabilitation, continuity of care, workforce preparedness, and home-based healthcare as interconnected determinants of healthy aging. By addressing these domains within a unified structure, the FLICF™ seeks to reduce preventable disability, support aging populations, strengthen healthcare capacity, and improve quality of life.

Although the framework remains conceptual and requires future empirical validation, it provides a practical foundation for research, pilot implementation programs, workforce development initiatives, healthcare innovation, and policy planning. Future studies should evaluate clinical outcomes, healthcare utilization, economic impact, workforce effectiveness, and long-term scalability across diverse healthcare environments.

Ultimately, the Functional Longevity Integrated Care Framework proposes that the future of healthcare should not be measured solely by years lived but by individuals' ability to remain active, independent, engaged, and functionally capable throughout those years. By prioritizing preservation of function as a central healthcare objective, the framework offers a pathway toward healthier aging populations and more sustainable healthcare systems for future generations.

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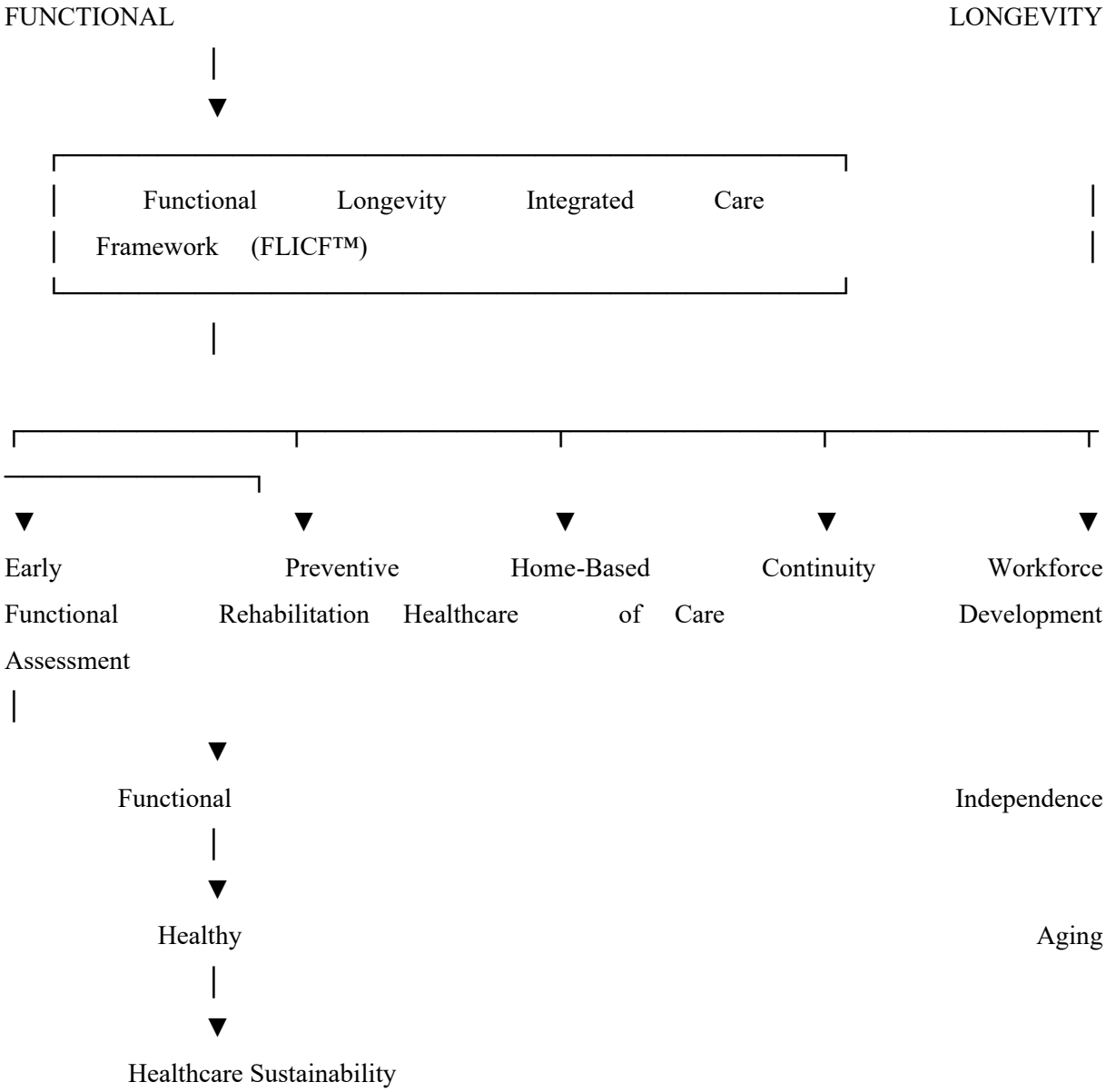
National Importance

The Functional Longevity Integrated Care Framework is particularly relevant to the United States because it addresses three converging national priorities: population aging, healthcare workforce shortages, and rising healthcare expenditures. By emphasizing prevention, preservation of function, continuity of care, and workforce preparedness, the framework provides a practical strategy to support healthier aging populations while contributing to the sustainability of the healthcare system.



Legend: Conceptual representation of the Functional Longevity Integrated Care Framework (FLICF™).

Table 1. Summary of the Five Pillars of the FLICF™

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Author Contributions

The author conceived the Functional Longevity Integrated Care Framework (FLICF™), conducted the literature review, developed the conceptual model, analyzed the findings, and prepared the manuscript.

CONFLICT OF INTEREST

Conflict of Interest Statement

The author declares no conflicts of interest related to this work.

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Impact Statement

The Functional Longevity Integrated Care Framework (FLICF™) addresses critical healthcare priorities facing the United States, including population aging, healthcare workforce shortages, chronic disease burden, disability prevention, and healthcare sustainability. By integrating preventive rehabilitation, home-based healthcare, continuity of care, and workforce development into a unified model, the framework offers a scalable strategy to improve functional independence, support aging in place, reduce preventable healthcare utilization, and strengthen healthcare system capacity.