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**AN OVERVIEW OF MOUNT SINAI HOSPITAL'S
ACUTE CARE FOR ELDERLY (ACE) STRATEGY**

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EXECUTIVE SUMMARY

In 2010, Toronto's Mount Sinai Hospital launched the Acute Care for Elders (ACE) Strategy to improve how care to patients 65 and older is delivered. Under the strategy, the hospital and its home, community, and primary care partners implemented a series of evidence-informed but tailored interventions within and spanning our continuum of care.

In the emergency department, we implemented the Identification of Seniors at Risk (ISAR) High-Risk Screening System, with additional supports to high-risk older patients provided by Geriatric Emergency Management (GEM) nurses. Within our inpatient settings, we established an Acute Care for Elders (ACE) Unit for high-risk medical patients and an Orthogeriatrics Service for older patients with hip fractures, along with integrated hospital-wide Consultation Liaison Services in Geriatric Medicine, Psychiatry, and Palliative Medicine. We have also implemented the Hospital Elder Life Program (HELP) and are using Nurses Improving Care for Health System Elders (NICHE) resources to educate frontline professionals in geriatric care and benchmark our performance internationally.

A number of integrated care models were also established to emphasize transitional and ongoing home and community care supports, like our House Calls Program, which provides home-based primary and specialty care for frail housebound elders; our Home-Based Palliative Care Program; and our Integrated Client Care Program (ICCP), which provides intensive care coordination for targeted high-risk older patients who are high users of services. Most recently, we received funding from the Ministry of Health to start the Community Paramedicine Program in fiscal year 2014–2015 to support high-risk clients and high users of 911 services. (See Appendix 1 for a more detailed description of our ACE Strategy interventions.)

Our ACE Strategy links these interventions to create a more seamless, integrated delivery model spanning the continuum of care through strong partnerships with local home, community, and primary care partners. This strategy is enabled by an interprofessional, team-based approach to care, as well as a number of technological innovations (e.g., geriatricized order sets, email notification and flagging systems, risk stratification tools), with a focus on maintaining the independence of older adults in our community for as long as possible and reducing unnecessary utilization of health care services.

The strategy includes a multiyear action plan to evaluate progress and make refinements using a balanced scorecard and a benchmarking system that allows for quarterly, regional performance comparators to identify areas of improvement. Since 2009–2010, the strategy has allowed us to reduce our average total length of stay (LOS) per patient 65 and older by more than 28 percent, while our patients are now more likely to go directly home as opposed to a nursing home. Furthermore, our patients are less likely to be readmitted and are more satisfied with our care. Despite a significant regional increase in emergency department visits and overall inpatient

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volumes, our improved efficiencies have allowed us to close beds. Meanwhile, our approach, which required minimal financial investments, but rather a different approach to the way we work, has achieved an average direct cost of care reduction of \$3,248 per patient. That translates into an overall savings of \$6.76 million in 2013–2014 alone.

BACKGROUND AND RATIONALE

While aging is inevitable, the proportion of our population entering “old age” has never been greater. Older adults drive health care costs and use more expensive types of health services, particularly in acute care settings. While they currently represent 14.9 percent of Ontario and Canada’s population, they account for over one-third (42%) of Ontario’s acute care hospitalizations and 58 percent of its hospital days.¹ This population accounts for just under half of all current provincial public health care expenditures. Innovations in health care are thus needed that not only improve patient care for this population, but also use our health care dollars more effectively.

Despite being our hospitals’ greatest users, little attention is paid to the unique needs of frail older adults within acute care who often present with a number of interrelated chronic and acute health and social issues. The inability to understand and address these issues in a proactive manner also contributes to the persistent alternate level of care (ALC), or more derisively called “bed blocker” challenge, that continues to negatively impact patient and system outcomes.

Mount Sinai Hospital’s vision is to deliver the best patient care, research, and education. The hospital is dedicated to working together with patients, families, staff, community partners, educators, and researchers to provide effective coordinated and integrated services. In 2010, Mount Sinai made a commitment to launch an integrated Acute Care for Elders (ACE) Strategy as a core strategic priority for our organization. This came out of recognition of how high-risk an environment the acute care hospital setting can be to all persons aged 65 and older, especially when one in three hospitalized elders experiences a significant functional disability at discharge, and over half fail to ever recover the function they lose.²

Mount Sinai’s ACE Strategy, therefore, proposed that these events are often not only catastrophic in terms of the decline in functional ability and the loss of independence that they can cause, but at the same time, are often preventable and could allow the hospital to achieve better patient, system, and financial outcomes. Mount Sinai’s patients, like older patients elsewhere, continue to articulate their desire for hospitals to deliver more integrated approaches to care that are patient-centered and focused on helping them return home and to their prior levels of functioning whenever possible. Mount Sinai’s ACE Strategy therefore emphasizes two key goals:

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1. Providing appropriate, knowledgeable, and effective care for older patients who are experiencing an acute medical episode and subsequent changes in physical, cognitive, or functional abilities.
2. Assisting older adults and their families and caregivers in maintaining or improving their functional, physical, and social abilities, enabling them to continue to live independently and prevent or delay institutionalization.

The key challenges in implementing system-level change included: 1) requiring a change in the traditional thinking often underpinning the way we have approached the care of older adults; 2) ensuring that frontline providers had the knowledge, skills, and tools needed to care effectively for an older population; and 3) making certain that the right home, community, and primary care partnerships were in place to ensure that a true continuum of care could be established that would enable patients to return home and remain well-supported in the community whenever possible.

Prior to 2010, Mount Sinai had established robust inpatient interprofessional consultation services in Geriatric Medicine and Psychiatry, but it became clear that these services have their limitations, when high-risk, frail older patients are scattered across various hospital units. While care standards were felt to be generally good, there was growing interest in developing more concrete and systemic interventions that could better influence the care older adults received, understanding that evidence around these hinted that better patient and system outcomes could be achieved through their implementation.

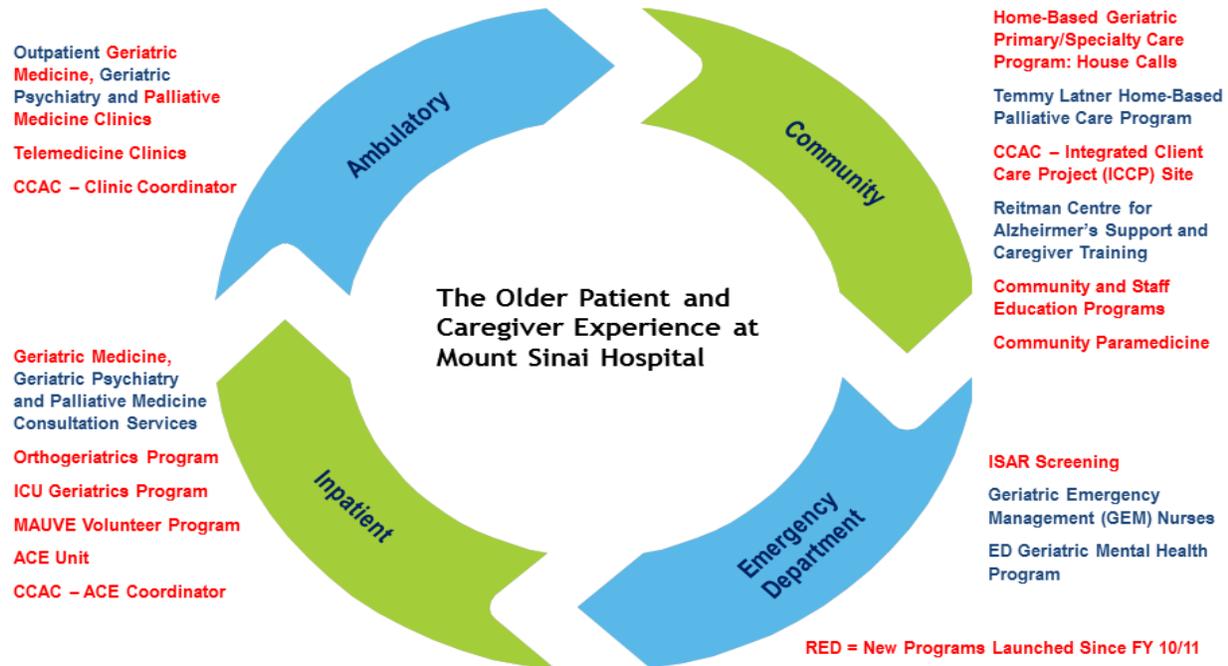
The ability to cluster frail older patients in one setting—an Acute Care for Elders (ACE) Unit, where the environment and staff could be specifically prepared to meet the needs of these particularly complex patients—became a concept that the organization felt would meaningfully advance the care of this unique population. The ACE Unit was envisioned to, and has become, the hospital's Centre of Excellence in advancing elder care—where the environment and its staff are welcome to embrace their mandate to implement and evaluate new models of caring for older adults.

Understanding that our hospital's highest-risk patients, and older ones in general, will still require care on most hospital units, we felt that an overarching ACE Strategy that imbued elder-friendly care principles, processes, and interventions throughout the hospital was the best way to advance geriatric care at Mount Sinai Hospital.

Figure 1 and Appendix 1 help to list some of the internal and external innovations that we have successfully implemented and that have helped us achieve unprecedented improvements in patient and system outcomes, as will be discussed in greater detail in the following pages.

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The Mount Sinai Geriatrics Continuum



WHAT IS UNIQUE ABOUT THE ACE STRATEGY MODEL OF CARE?

A unique feature of the ACE Strategy is how we took the original concept and principles of an ACE Unit and other singular evidence-based models or tools (e.g., HELP, ISAR) developed years ago and linked them together as an operational continuum, adding a number of original and innovative processes, or modifying traditional ones, to create a system of care that effectively spans the continuum with an interprofessional response. Each model or innovative process listed in Figure 1 and Appendix 1 is an integral part of an overall continuum of care envisioned through our ACE Strategy, which aims to deliver the right care, in the right place, at the right time for our older patients. Below are some of the original and innovative features of the ACE Strategy.

Mount Sinai ACE Strategy training curriculum and ongoing professional development.

All ACE Unit staff and Identified Lead Frontline Providers on every hospital unit have completed 19 hours of online geriatric-focused educational modules to ensure they have the knowledge, skills, and attitudes desired among all lead staff who primarily work with older patients. Most recently, all ACE Unit nursing and interprofessional staff attended 15 hours of education on delirium, dementia, and behavioral issues. Additionally, staff participate in monthly interprofessional staff meetings to support the further development of strong team functioning

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and interprofessional approaches to care. The ACE Strategy Staff Online Training Modules have been made freely available throughout the hospital, and dozens of other nurses and allied health staff have voluntarily completed them as well.

Patient-oriented recreational programming. The ACE Unit is where our MAUVE Program is based at Mount Sinai Hospital. Maximizing Aging Using Volunteer Engagement (MAUVE) is a volunteer-based program that provides special training to volunteers to work with frail older inpatients across all general medicine and other hospital units. The program provides socialization for patients and also supports patients to regain their functional abilities and return home. A highlight of the program is the communal dining program on Wednesdays that sees MAUVE volunteers set up a communal lunch experience with live music to encourage and promote patients getting out of their rooms to interact with others. The program was recently recognized as a Leading Practice by Accreditation Canada.

Constant use of innovative IT solutions to facilitate patient care. The ACE Strategy's initial and subsequent development allowed interest to develop in the use of technology wherever possible to facilitate the high standard of patient care the unit strives to provide. Special order sets have been developed to ensure that older ACE, general medicine, and orthopedic patients get the right medications and care protocols starting in the emergency department (ED) and on other units. Using special tracking orders, we can follow the flow of ACE Unit patients throughout the building in real time to ensure we can get all ACE patients to the unit as quickly as possible, while also ensuring that wherever an ACE or any older patient is in the hospital that they are getting the best possible care. We have also created robust email notification and alert systems that allow involved primary care, home care, and inpatient care providers to communicate in real time around "House Calls" and ICCP patients admitted to the ED in crisis. We have recently launch a software tool called ACE Tracker that allows frontline providers to discover older patients in their units or under their care anywhere in the hospital who may be at high risk for poor geriatric care outcomes and intervene early.

Relentless focus on quality improvement. All staff involved in our geriatric programs are committed to quality improvement and have come to embrace this through a number of initiatives. Our Releasing Time to Care (RTC) initiative has frontline staff monitoring "nursing-sensitive metrics" related to the care they provide daily to ensure a relentless focus on quality of care is being maintained. The medical teams are adopting metrics that monitor how well they support the philosophy of helping ACE patients return to their own homes. Overall, the geriatrics program reviews a series of quarterly reported metrics using a balanced scorecard, looking at a series of access and efficiency, quality and safety, patient and staff experience, and financial health metrics to establish patient and system-level outcomes and areas for improvement.

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EVALUATION AND IMPACT OF THE ACE STRATEGY

The ACE Strategy includes a multiyear action plan to evaluate progress and make refinements using a balanced scorecard and a benchmarking system that allows for quarterly, regional performance comparators to identify areas of improvement.

Between fiscal year 2010–2011 and 2013–2014, we admitted 8,022 medical inpatients age 65 and older to the hospital under our ACE Strategy. Of all patients admitted with acute medical needs over this period, 55 percent are 65 and older, with half deemed to be at high risk of functional decline and loss of independence. The average age of this high-risk cohort is 86 years of age, and they are often characterized as living marginally in the community with limited social supports, cognitive impairment, and/or multiple medical conditions resulting in significant medical and social frailty. Overall, our population of older admitted patients is similar to that of other acute care hospitals across Toronto, Ontario, and Canada. However, unlike other parts of Ontario and Canada, Mount Sinai and its other downtown Toronto counterparts are seeing unprecedented rises in visits to their emergency departments and subsequent admissions due to the rapid rise of the area's population.

In comparing 2013–2014 to 2009–2010 ACE Strategy performance data, a 37 percent overall increase in annual admissions of patients 65 and older was observed (principally due to climbing ED volumes with a maintained ED to admit ratio). Despite the increased volume of patients, a 27.8 percent decrease in total length of stay, 23.8 percent decline in average length of stay/estimated length of stay (ALOS/ELOS) ratio, and a 13.4 percent decline in readmissions was observed. This permitted a 13.6 percent reduction of general medicine beds in operation over this time period. A recent study examining the use of our House Calls Program as a post-discharge intervention for homebound patients in need of ongoing home-based primary care after an index hospital admission demonstrated a 50 percent reduction in 30-day readmission rates, a 50 percent reduction in year-over-year hospital visits, and an associated 70 percent reduction in hospital bed days for those admitted to this program.

The incidence of post-admit nosocomial pressure ulcers has been reduced by 93 percent. We have seen significant decreases in falls and a reduction of urinary catheter use of 50 percent. In addition to an overall drop in alternate level of care (a.k.a. bed blocker) days per patient of 20 percent, patients are now more likely to go directly home versus a nursing home or rehab center after an admission (79% vs. 71%) and are more satisfied with their care. Staff satisfaction has further increased while staff turnover has significantly declined.

With the achievement of an average reduction of direct costs of care of 22.7 percent or \$3,248 per patient, the net calculated savings achieved in 2013–2014 through the ACE Strategy was \$6.76 million (savings in 2012–2013 was \$6.4 million).

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Mount Sinai's ACE Strategy was recently awarded the 2014 3M Canada Healthcare Quality Team Award and the 2013 CERNER Canada Advancing Clinical Excellence Award for its IT Innovations and was recognized in the Ontario Government's 2013 Minister's Medal Honoring Health, Quality and Safety. Three of the ACE Strategy's individual models—the ACE Unit, the Maximizing Aging Using Volunteer Engagement Program, and its Support Program for Caregivers of People with Dementia—have also been awarded Leading Practice designations by Accreditation Canada.

In addition to being recognized widely, this program continues to contribute through its knowledge translation activities including publications³⁻¹⁰ to further enhance the global advancement in continuous quality improvement activities in the care of acutely ill older adults.

For further information on the ACE Strategy, please contact:

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APPENDIX 1.

Acute Care for Elders (ACE) Strategy Portfolio Components: *Evidence-Based, Elder-Friendly Hospital Interventions Implemented at Mount Sinai Hospital, Toronto*

1. ED Care Components

High-Risk Screening Tools

Evidence-based screening tools like Identification of Seniors at Risk (ISAR) and the interRAI Assessment Urgency Algorithm (AUA) have been designed for use with older adults presenting to the emergency department (ED) to quickly and effectively identify those who are at an increased risk of a variety of adverse outcomes including functional decline, readmission, and institutionalization.^{11,12} Use of these tools must be linked to follow-up processes, including a formal clinical evaluation.

- **Primary Outcome Measure—Improved Detection of Geriatric Syndromes**

Geriatric Emergency Management (GEM) Nurses Model

GEM nurses are ED-based advanced practice nurses who exclusively focus on assessing and addressing the needs of frail older patients while helping to connect them with specialized geriatrics services and home care and community support services as required. GEM nurses have been found to be helpful in preventing unnecessary admissions, while also facilitating the care of older patients who may need further in-hospital assessment and support.³

- **Primary Outcome Measure—Decreased Unnecessary Admissions**

2. Inpatient Care Components

Elder-Friendly Order Sets

The implementation of elder-friendly order sets to guide the implementation of evidence-based care protocols and practices can be effective ways to ensure ACE principles of care are being supported. Each organization will implement order sets that work best within their local contexts, but observed best practices include those that have activity orders as well that encourage early mobilization and influence the choice of safer pain management or nausea treatment options, promote more appropriate bowel and bladder management routines, and encourage proactive and comprehensive discharge planning.⁶

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- **Primary Outcome Measure—Decreased Functional Decline on Discharge**

RNAO Best Practice Guidelines

Mount Sinai Hospital has established a partnership with the Registered Nurses' Association of Ontario (RNAO) as a Best Practice Spotlight Organization (BPSO®). BPSOs are organizations that commit to implement multiple RNAO clinical best practice guidelines (BPGs) using knowledge translation methods supported by RNAO and reinforced in the RNAO BPG implementation portfolio.¹³ These same approaches adopted by Mount Sinai Hospital will support an evidenced-informed organizational culture and uptake of clinical practice guidelines in areas like falls, pressure ulcers, and delirium that will help to create elder-friendly hospitals.

- **Primary Outcome Measure—Decreased Falls, Pressure Ulcers, and Delirium**

Hourly Nurse Rounding Model

Nurses and nursing assistants through this model conduct hourly patient rounds designed to improve safety and address needs that otherwise would prompt use of call lights. During the rounds, they identify and address each patient's pain level, position, and comfort; offer toileting assistance; and ensure that all needed items are within reach. Several studies have since demonstrated the ability of these programs to help reduce patient falls, pressure ulcers, and call light use. They also contribute to significant improvements in patient satisfaction.¹⁴

- **Primary Outcome Measure—Increased Patient Satisfaction**

Acute Care for Elders (ACE) Units

ACE Units operate within a specially designated ward of the hospital that aims to combine geriatric assessments, quality improvement, a specially planned environment, interprofessional team rounds, frequent medical care reviews, and comprehensive discharge planning. ACE Units have been shown to reduce lengths of stay, readmissions, and long-term care placements and help hospitalized older adults maintain functional independence in basic activities of daily living.¹⁵

- **Primary Outcome Measure—Decreased Functional Decline on Discharge**

Orthogeriatrics Services

Orthogeriatrics is a comanagement model that brings geriatricians and orthopedic surgeons together in the care of older patients with hip fractures. In enhancing the care of these patients

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with comprehensive geriatric assessments at the time of admission and ongoing support through the length of stay, these models have shown an ability to reduce the incidence of delirium and thus shorten lengths of stay.¹⁶⁻¹⁸

- **Primary Outcome Measure—Decreased Length of Stay**

Hospital Elder Life Program (HELP)

HELP is a volunteer-based model designed to prevent delirium by keeping hospitalized older patients oriented to their surroundings; meeting their needs for nutrition, fluids, and sleep; and keeping them mobile within the limits of their physical condition.¹⁹ HELP has been shown to be effective at reducing the incidence of delirium and functional decline in hospitals.

- **Primary Outcome Measure—Decreased Incidence of Hospital Acquired Delirium**

Nursing Improving Care for Health System Elders (NICHE)

NICHE provides clinical and organizational tools and educational resources to support a systematic change in the culture of health care facilities. NICHE supports organizations to achieve patient-centered care for hospitalized older adult patients. NICHE has been used by numerous hospitals across North America and other health care settings to foster system-wide improvements in the care of older people.²⁰

- **Primary Outcome Measure—Increased Staff Satisfaction**

ACE Tracker

The ACE Tracker is a computer-generated checklist of all older patients in a facility that takes information from multiple areas of the electronic medical record to identify the older patients' risk factors for functional decline and poor outcomes.²¹ An initial study using the ACE Tracker tool has shown its ability to significantly decrease urinary catheter use and increase physical therapy referrals.

- **Primary Outcome Measure—Decreased Incidence of Urinary Catheter Use**

3. Transitional and Community-Based Care Components

Care Transitions Intervention Model

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In this model, hospital patients are assigned to a transitions “coach” who helps patients learn self-management skills beginning at discharge.²² The coach, a specially trained nurse, helps patients learn to manage multiple prescriptions, follow post-hospital recommendations, and present their health care providers the information they need.

- **Primary Outcome Measure—Decreased Readmission Rates**

House Calls—Home Based Primary Care (HBPC) Model

In this model, homebound frail older adults for whom home-based primary care becomes a necessity and not a convenience, receive comprehensive and ongoing primary care at home with the support of a fully interprofessional team. These patients have access to in-home geriatric medicine and psychiatry consultations as well. HBPC programs have been shown to be effective in reducing hospitalizations and ED visits and reduce the premature need for long-term care.^{5,9}

- **Primary Outcome Measure—Decreased Hospitalization Rates**

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