

Massachusetts Commission on Falls Prevention

Phase 2 Report:

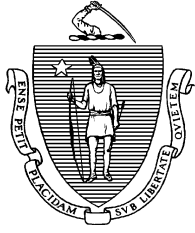
Recommendations of the Massachusetts Commission on Falls Prevention

September 2015



Prepared by:

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September 22, 2015

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Dear Messrs. Clerk,

Pursuant to Section 9, of Chapter 288, Acts of 2010 of the Massachusetts General Laws, please find attached *Phase 2: Recommendations of the Massachusetts Commission on Falls Prevention*.

Sincerely,

Carlene Pavlos, Chair
Massachusetts Commission on Falls Prevention
Director, Bureau of Community Health and Prevention, DPH

Acknowledgements

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Executive Summary

This report presents recommendations by the Massachusetts Commission on Falls Prevention to reduce the incidence of older adult falls and fall-related injuries in the Commonwealth of Massachusetts. The Commission convened in accordance with Section 9, of Chapter 288, of the Acts of 2010, as amended in 2012.

Falls are the leading cause of injuries and injury-related deaths for adults age 65 and older in Massachusetts.¹ This issue is of particular concern where the proportion and number of older adults in the state is increasing dramatically. By 2030, more than 20% of Massachusetts' residents will be age 65 or older.² A greater number of older residents means there will be larger numbers of people who are at risk for falls and fall-related events that can result in increased visits to emergency rooms, hospitals and long term care facilities. This can lead to decreased quality-of-life for a larger portion of the Commonwealth's population and increased costs to the healthcare system. In Fiscal Year 2013, the total inpatient and emergency department charges associated with falls injuries among MA older adults was over \$674 million, a figure which does not include emergency medical services, outpatient or long term care/rehabilitation costs (*Inpatient Hospital and Emergency Department Discharge Databases, Center for Health Information and Analysis, unpublished data*).

Fortunately, there are a number of falls reduction strategies that are proven to be effective, feasible, and inexpensive.³ Interventions to prevent falls include falls risk screenings by healthcare providers, community-based group programs, individually tailored strength and balance training, and improvements in home and community design. Many of these are already being implemented and evaluated in pilot communities through the Prevention and Wellness Trust Fund and other programmatic efforts. Falls prevention research has also helped raise the profile of this issue for both older adults and providers. Physicians indicate they want to know and do more to prevent falls.⁴ The challenge lies in the myriad of factors that can lead to a fall such as poor vision, medications that cause dizziness, chronic diseases, fall hazards in the home or in the community, and lack of awareness of fall risks. Meaningful falls prevention strategies must include multi-faceted approaches and the participation of a variety of stakeholders such as healthcare providers, clinics, hospitals, long-term care facilities, home care, insurers, regulators, community-based organizations (councils on aging, Area Agencies on Aging, etc.), local and state health departments and other governmental agencies as well as older residents and the general public.

The MA Commission on Falls Prevention, the first of its kind in the nation, was established by the Massachusetts legislature to reduce the impact and cost of falls to the state's older residents, their caregivers, and to the health care system. By preventing falls, the state can help older adults avoid the consequences of a fall-related injury, thereby enabling them to remain active and independent. Falls prevention is a strategy for healthy aging. In addition, falls prevention saves health care dollars by eliminating the emergency room visits, hospitalizations, and long-term care stays that can be the consequence of a fall.

In its first report to the EOHHS Secretary and the Joint Committee on Health Care Financing, [Phase 1: the Current Landscape](#), the MA Commission on Falls Prevention described the state's assets, gaps and challenges in addressing this problem. Since the Phase 1 publication, the Commission has met regularly in smaller task groups, and in its full complement, to discuss findings, seek new information from experts, review new technologies and approaches, and consider the impact of the changing health care finance and practice landscape on falls prevention.

With this report, *Phase 2: Recommendations of the Massachusetts Commission on Falls Prevention*, the Commission provides recommendations to the Secretary of the Executive Office of Health and Human Services and to the Legislature. The elevation of falls prevention as a state priority, and the engagement of stakeholders already involved in falls prevention strategies, makes this an opportune time to adopt systems-wide approaches that are effective and save health care dollars.

The Commission identified three areas that, through implementation of the proposed recommendations, could have the broadest and deepest impact on falls prevention.

The Primary Care Setting

Recommendation 1:

The MA Commission on Falls Prevention will convene stakeholders, including Accountable Care Organizations (ACOs), insurers, MA Association of Health Plans (MAHP), professional organizations, and other health care provider groups, to support the dissemination of the consensus on provider practice regarding falls risk screening and interventions in primary care settings for older adults.

Community-based Falls Prevention Programs

Recommendation 2:

MA Commission on Falls Prevention will collaborate with key stakeholders in the planning of distribution and promotion systems for community-based falls prevention programs that draw upon community, provider, workplace, and government networks. Any given system should meet specific criteria that accounts for quality, sustainability, fidelity and accessibility statewide.

Healthy Aging Community Design

Recommendation 3:

MA Commission on Falls Prevention will expand its collaboration with key stakeholders in healthy aging community design/the built environment in order to increase resource and knowledge sharing.

The fourth and final recommendation addresses changes to the Commission's enabling statute that would support its future work.

Recommendation 4:

Incorporate the following statutory changes:

- Appointment of additional Commission members with the following areas expertise: vision, falls research, and healthcare coverage and payment, and the built environment;
- Revision of scope of Commission reporting to the legislature to include an annual activities update, and a full report every two years.

These four recommendations require little to no additional investment by the Commonwealth. Instead, the Commission seeks to convene major stakeholders to develop consensus around key falls prevention approaches and strategies. The goal is for consensus statements to be disseminated via stakeholder networks and constituencies, and to lay the groundwork for statewide implementation of strategies that will reduce falls incidence and injury.

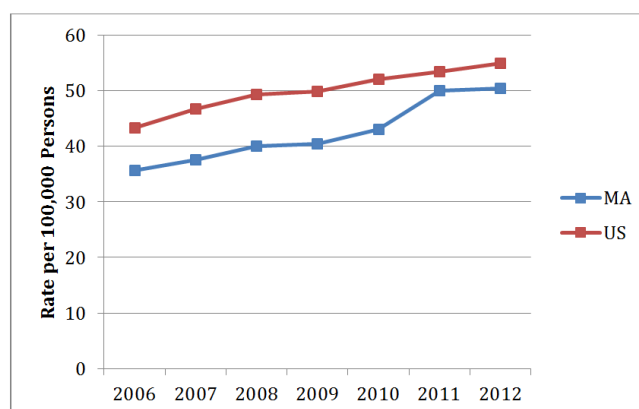
The Commission is committed to continuing its work with the Governor, his administration, the Legislature and key stakeholders to ensure that the incidence of older adult falls are reduced, and that the Commonwealth's older adult citizens live safe and healthy lives.

The Burden of Older Adult Falls

Falls are the leading cause of nonfatal injuries and injury-related death among MA residents ages 65 and older⁵ imposing a significant public health burden on the state's older residents and on the health care system. In 2012, approximately one quarter (26%) of Massachusetts' community dwelling older adults reported falling in the past 12 months⁶, and 38% of those that fell reported that they were injured (*Massachusetts Behavioral Risk Factor Surveillance System, unpublished data*). Falls injuries among MA adults aged 65+ years resulted in 537 deaths in 2012 and were associated with 21,598 hospital stays and 43,931 emergency department visits in fiscal year 2013 (*Inpatient Hospital, Observation Stay and Emergency Department Discharge Databases, Center for Health Information and Analysis, unpublished data*).

The rates of fall injuries in MA older adults have risen significantly during the past decade. From 2006 through 2012, MA experienced a 41% increase in unintentional fall death rates in older adults, even after adjusting for aging of the population (Figure 1). (According to estimates by the US Census Bureau, by 2030 the Commonwealth will experience a 70% increase in its population of adults age 65 and older as compared with the year 2000⁷.) Age adjusted rates of emergency department visits and hospital stays associated with falls injuries in this population also increased 12 and 13 percent, respectively, from 2002 through 2009, although they have been relatively stable since 2009 (*Inpatient Hospital, Observation Stay and Emergency Department Discharge Databases, Center for Health Information and Analysis, unpublished data*). The reasons for each of these increases are not entirely understood, although some of the increases in falls injuries may be associated with improvements in survival of other chronic or disabling conditions⁸ alone or in combination with a general increase in medication use.⁹ According to a random, phone-based survey of community-dwelling adults (the MA Behavioral Risk Factor Surveillance System), in 2012, older adults with disabilities requiring assistance reported a higher prevalence of falls compared to those without disability (52.1% vs. 18.4%, respectively), and higher rates of fall injury (*Massachusetts Behavioral Risk Factor Surveillance System, unpublished data*).

Figure 1: Age Adjusted Unintentional Fall Death Rates, MA and US Residents 65+ Years, 2006-2012ⁱ



²Sources: Registry of Vital Records and Statistics, MA Department of Public Health. 2012 File extracted 9/2014 and may differ from counts published using earlier files; U.S. data from Centers for Disease Control and Prevention, National Center for Injury Prevention and Control. Web-based Injury Statistics Query and Reporting System (WISQARS) [online]. (2005) [cited 1/12/15]. Available from URL: www.cdc.gov/ncipc/wisqars.

Many injuries related to falls can have long term consequences, with traumatic brain injuries (TBI) and hip fractures among the most debilitating. Among emergency department visits for nonfatal falls treated in MA acute care hospitals, one in four (25%) is associated with a TBI. For reasons that are not well understood, age-adjusted emergency department visit rates for fall-related TBI nearly tripled in Massachusetts older adults from FY2002 through 2013 (*Emergency Department Discharge Database, Center for Health Information and Analysis, unpublished data*).

Hip fractures are another severe consequence of falls. Although inpatient hospitalization rates of fall-related hip fractures have declined in the past decade, these injuries still made up approximately 28% of all inpatient hospitalizations for falls injuries in fiscal year 2013. Further, nearly three out of four of these hospitalizations (74%) resulted in a discharge to a skilled nursing facility (*Inpatient Hospital Discharge Database, Center for Health Information and Analysis, unpublished data*).

The economic impact of these falls injuries is enormous. In FY2013, the total inpatient and emergency department charges associated with falls injuries were over \$674 million (*Inpatient Hospital and Emergency Department Discharge Databases, Center for Health Information and Analysis, unpublished data*). The median charge for inpatient hospitalizations associated with falls injuries in older adults was \$20,100 in fiscal year 2013 (*Inpatient Hospital Discharge Database, Center for Health Information and Analysis, unpublished data*). This does not include costs related to pre-hospital ambulance services, outpatient follow-up, lost wages, or rehabilitation and long term care. According to estimates by the Centers for Disease Control and Prevention (CDC), the lifetime medical and work loss cost of falls injuries that were sustained in 2010 by US older adults is estimated to be over \$53.9 billion.¹⁰

Physicians and Primary Care Providers

GOAL: Primary Care Providers will implement annual falls risk screenings, interventions, and referrals as appropriate for all adults age 65 and older.

The primary care setting is an important site for the identification of patients at high-risk of falling, and for the initiation of falls reduction and prevention strategies. However, consistently screening for falls risk is challenging for primary care providers for a variety of reasons. First, primary care providers have limited resources and time as they manage acute and chronic health conditions, screen for domestic violence and substance abuse, and comply with various and changing regulatory requirements. Second, the lack of systemic compensation for falls reduction interventions and treatment makes it more difficult to institute the necessary changes in the primary care setting. Finally, there are gaps in falls prevention knowledge among primary care providers that have been shown to contribute to inconsistent screening and interventions.¹¹ While specialists (particularly those who work with high-risk patients with vision, neurologic and/or orthopedic disorders) also have roles and responsibilities in falls prevention, aiming initial efforts at primary care providers reaches a broader population and is therefore more cost effective.

The first Commission recommendation is to seek the input, buy-in, understanding, and commitment from major stakeholders in the state's primary care environment to improve falls screening and prevention activities. These stakeholders may include Accountable Care Organizations (ACOs), health plans, and healthcare provider groups. These organizations have a financial incentive due to significant health care costs associated with falls injury. In addition, these organizations are already involved in many practice and payment reform efforts that enable falls prevention. ACOs and health plans can increase primary care provider screening rates and referrals for prevention activities by providing technical assistance, provider incentives for falls risk screening, education strategies, and tools to assess quality of processes and programs. These strategies can significantly reduce falls incidence and injury in large numbers of older adults in the state.

Recommendation 1:

The MA Commission on Falls Prevention will convene stakeholders, including Accountable Care Organizations (ACOs), insurers, MA Association of Health Plans (MAHP), professional organizations, and other health care provider groups, to support the dissemination of the consensus on provider practice regarding falls risk screening and interventions in primary care settings for older adults.

The Commission has identified three topics for discussion that would help reach the screening and referral goal in the primary care setting. (These are not intended to be comprehensive or exclusive.) They are:

- 1a. Strategies for including falls prevention as a quality indicator in order to promote financial compensation that supports falls risk assessments and interventions by primary care providers.
- 1b. Electronic Health Record modifications that support falls screening and referrals for older adults.
- 1c. Primary care provider education strategies that maximize exposure to, and awareness of, falls prevention screening tools and guidelines.

1a. Strategies for including falls prevention as a quality indicator in order to promote financial compensation that supports falls risk assessments and interventions by primary care providers

Guidelines for falls prevention have been written and disseminated by leading national health care organizations such as the CDC and the American Geriatrics Society.¹² Based on in-depth research in the field, the guidelines identify the most effective, evidence-based falls prevention interventions for primary care and other healthcare providers. These interventions can be used as quality indicators for the primary care environment.

In the context of healthcare reform, and accompanying payment reform, financial compensation for falls risk assessment and interventions is an important element for widespread and comprehensive changes to clinical practices. Primary care providers frequently operate with significant financial constraints and need to be assured of adequate resources to address older adult falls. The changing environment of healthcare payment provides both an opportunity and challenge for falls prevention. Healthcare payment reform strategies are being tested and debated and range from fee-for-service to incentives for meeting quality indicators to global payments.ⁱⁱ By convening stakeholders to discuss the financing of falls prevention, the Commission seeks to identify short and long-term strategies that can be implemented and adapt to the changing payment landscape.

1b. Electronic Health Record modifications that support falls screening and referrals for older adults

Electronic Health Records (EHRs) are electronic versions of patient health records that can make current and historic clinical information available to authorized users, and ideally can communicate across health care settings. Embedding evidence-based falls risk assessments and decision tools in EHRs can help primary care providers identify high-risk patients and can guide the primary care providers through related clinical decisions.

ⁱⁱ A global payment is a comprehensive payment to a group of providers that is intended to account for most or all of the expected cost of care for a group of patients for a defined time period.

Examples of EHR strategies that can enhance falls reduction practice by providers include:

- A “structured data field” (a placeholder in the electronic record that displays a patient’s fall risk assessment information)
- Clinical decision support systems for fall risk screening and prevention
- Bi-directional referral mechanisms between clinics and community programs

The use of EHRs for falls assessment and referrals is being tested and evaluated in several pilot projects in the Commonwealth. The Commission will be monitoring these projects throughout their implementation and evaluation to gather information on their successes, failures, challenges and gaps.

For example, one novel strategy now being pilot tested is under the State Innovation Model (SIM) grant awarded to Massachusetts by the federal Centers for Medicare & Medicaid Services (CMS) to advance the Commonwealth’s innovative health care cost containment efforts. “Bi-directional e-Referral” enables physicians to refer patients via the EHR to a community-based falls prevention program. In turn, the community organization is able to respond to the referral electronically and send the information about the patient’s engagement in and completion of the program directly to the EHR (see Model 1).

Model 1: State Innovation Model (SIM) e-Referral Initiative

<i>How is it currently funded?</i>	<i>Affordable Care Act</i>
<i>Duration of project?</i>	<i>3.5 years</i>
<i>Noteworthy Components</i>	• <i>Bi-directional e-Referrals: Clinics make referral, with patient consent, to a community-based program. The program in turn responds electronically to the clinic with information about patient participation and completion.</i> • <i>This project has been aligned with the Prevention & Wellness Trust Fund which has a focus on falls prevention. Several clinical sites participating in e-Referral refer to community-based programs for falls home risk assessments, Matter of Balance, and Tai Chi.</i>
<i>What will we learn about falls?</i>	• <i>Demographic and health information of those referred to falls prevention programming, number of referred that complete the programming, and health outcomes of programming participants.</i> • <i>In the future, this information could be linked to hospital discharge data (Acute Hospital Case Mix) and the All Payer Claims Database (APCD) in order to evaluate the impact of programming on falls prevention.</i>
<i>Why is this an important contribution to falls prevention landscape?</i>	• <i>Links the clinic to community-based falls prevention programs, thereby breaking down silos and aiding patients’ participation in falls prevention activities.</i> • <i>Reduces falls incidence.</i> • <i>Determines value of evidence-based programs on health outcomes.</i>

The Prevention and Wellness Trust Fund (PWTF) offers other opportunities for testing falls reduction strategies. The PWTF provides funding to 9 communities across the Commonwealth to develop and implement “effective, sustainable interventions and systems to improve health and reduce costs.”¹³ PWTF communities are addressing older adult falls as one of four priority conditions. Awardees are implementing a variety of strategies, including the use of EHR to prompt clinician assessment of falls risk and to increase clinician referral to evidence-based community programs (see Model 2). These communities are also modeling new ways of partnering and linking institutions and agencies (such as hospitals, health centers, academic institutions, non-profits, government agencies) to create new approaches to falls prevention. The Commission will be monitoring their progress, challenges, and successes.

Model 2: Prevention and Wellness Trust Fund (PWTF)

<i>How is it currently funded</i>	<i>State (As legislated in Chapter 224 of the Acts of 2012)</i>
<i>Duration of project?</i>	<i>4 years</i>
<i>Noteworthy EHR components</i>	• <i>Use of EHR to prompt clinician assessment of falls risk.</i> • <i>2 communities serving as SIM test sites.</i> • <i>Use of e-Referrals: Providers can refer a patient to a community, falls prevention program, with patient consent. The program communicates with provider regarding patient’s participation and completion of the program.</i> • <i>Rigorous evaluation.</i>

Given these ongoing projects, now is an opportune time to take advantage of the efforts being tested and implemented in order to establish a systems-wide approach for using the electronic health record to prevent falls.

1c. Primary care provider education strategies that maximize exposure to and awareness of falls prevention screening tools and guidelines

According to the Clinical Guidelines published by the American Geriatrics Society/British Geriatrics Society¹⁴ (<http://www.medcats.com/FALLS/frameset.htm>), “All falls prevention programs include educational components that are intended to raise the awareness of the older person and/or health care workers about risk factors for falls and inform them about strategies to minimize risk.” The guidelines emphasize that any education effort be part of a multifactorial strategy. The Commission is focusing its education recommendations in this report mainly on the primary care providers. Their knowledge and use of guidelines, tools, and practices will be a vital step in improving patient awareness and behaviors.

Several studies have demonstrated the lack of consistent attention by primary care providers to falls prevention in their elderly patients. According to Rubenstein, et al, only about one quarter of vulnerable elderly patients in his study sample were asked at least annually about recent falls by their doctors.¹⁵ Shinyi Wu et al in California drew a

similar conclusion, noting “community physicians sub-optimally detect, evaluate, and manage older patients with falls.”¹⁶

Research by the Centers for Disease Control and Prevention (CDC) corroborated those findings. In a 2012 publication,¹⁷ Stevens et al, noted that practitioners lacked the information they needed to assess falls risk, or to recommend falls prevention strategies. However, the researchers found that primary care providers, especially those working with older patients, were very interested in learning about falls risk assessment and reduction.

As a result of this research, the CDC created a falls informational toolkit for providers. Known as STEADI (Stopping Elderly Accidents, Deaths and Injuries), the toolkit contains resources and tools that will help make falls prevention an integral part of clinical practice.¹⁸

Examples of strategies to improve falls awareness and knowledge in the primary care setting include:

- Continuing Medical Education (CME) options that meet the requirements for the risk management category defined by the Massachusetts Board of Registration in Medicine for license renewal. The STEADI toolkit can be the basis of that training.
- Developing a statewide informational website for providers and patients.
- Encouraging communication via professional organizational newsletters, websites and professional conferences.

Community-based Interventions and Programs

Goal: Massachusetts' older adult residents have access to evidence-based, community prevention and intervention programs for falls and falls-injury reduction

Types of falls prevention program:

Several decades of research have yielded a number of relatively low-cost, low-tech community-based interventions that are evidence-based for older adult falls prevention.¹⁹ These programs vary in approach and content and range from multifactorial programs to single interventions. *Multifactorial* programs are conducted by health care providers and involve assessment of a patient's falls risks (e.g., medications, vision problems, balance and strength, and safety of the home environment) and one or more interventions specific to the individual's risk profile. Programs classified as *single interventions* refer to those where all participants receive the same intervention. These are often community-based, and involve group participation.

Community-based interventions are typically conducted by organizations that serve the needs of older adults (e.g., Area Agencies on Aging, Councils on Aging) or serve a broader population (e.g., YMCAs).

Examples of Types of Falls Prevention Programs

Type	Characteristic	Examples
Single	One intervention strategy	Tai Chi
Multifactorial	1 or more intervention strategies in unique combination as per individuals fall risks	Risk assessment (e.g. STEADI) followed by clinical interventions for risks
Multiple	Fixed combination of intervention strategies	Matter Of Balance, Stepping On, Otago

Effectiveness for Falls Reduction:

While many activities may contribute to falls prevention, it is important that those receiving public funding, or that are offered within the context of medical care, be evidence-based. Programs with the strongest level of evidence are those that have been shown to be effective by one or more peer-reviewed randomized controlled trials. Falls prevention programs meeting this criterion typically result in 25-50% reductions in falls.²⁰ These programs can be integrated with healthcare if physicians are encouraged to become more engaged in falls risk assessment for their older patients, if providers and the public gain awareness that falls risk can be reduced, and if public and private healthcare insurers expand reimbursement for community-based falls prevention programming.

Cost effectiveness:

In addition to their effectiveness for falls prevention, recent studies have shown some programs to be cost-effective. The Centers for Medicare and Medicaid Services conducted a study evaluating *A Matter of Balance* (MOB), a program developed to reduce fear of falling and increase mobility in older adults. Compared to matched controls, older adults who had participated in the MOB program had, during the post-participation year, on average a \$938 reduction per client in health care costs, as well as reduced mortality. Other research estimating the cost effectiveness of falls prevention programs has also found significant savings.^{21,22}

Deploying falls prevention programs:

Several possibilities exist for distribution of consistent, low cost, statewide community-based falls program. Important among these are the organizations that provide aging services that encompass Aging Service Access Points (ASAPs), Area Agencies on Aging (AAA), Councils on Aging (COA) among others. In addition, health care organizations and community-based service organizations such as local YMCAs also offer potentially important venues. The Healthy Living Center of Excellence (HLCE) is bringing together such diverse organizations with the goal of establishing a statewide dissemination network for evidence-based programs including chronic disease self-management. HLCE operates with support of the Administration on Aging, the Tufts Health Plan Foundation, and the Hartford Foundation. HLCE seeks to expand the number of organizations and trained staff providing quality, evidence-based falls prevention programs across the Commonwealth (see Model 3). In 2014, HLCE also received a two-year grant from the Administration on Aging to add falls prevention programs to its compendium of programs delivered statewide.

Model 3: The Health Living Center of Excellence (HLCE)

<i>How is it currently funded?</i>	• <i>HLCE has operated with partial funding through a federal grant given to the Executive Office of Elder Affairs, MDPH and Tufts Foundation.</i> • <i>In 2014, HLCE received \$492, 000 Funded by Administration on Aging to add Falls Prevention Programs to its compendium of programs delivered statewide. Grant is for 2 years.</i>
<i>Why is this important contribution to falls prevention landscape?</i>	• <i>HLCE has an infrastructure, with central management, that can function statewide.</i> • <i>They seek to embed falls prevention programs within the elder services and public health networks, including with health care partners and community organizations.</i> • <i>It offers ongoing, consistent leadership training.</i> • <i>It has a process for retaining fidelity to original program content.</i> • <i>It incorporates program and participant monitoring and evaluation to determine program effectiveness.</i>
<i>What will we learn about falls?</i>	<i>Whether participation in community-based falls prevention programs reduces incidence of falls.</i>
<i>Program Sustainability</i>	<i>Using the fee for service model, HLCE is contacting health care organizations to establish reimbursement contracts for patients that complete the program.</i>

Recommendation 2:

MA Commission on Falls Prevention will collaborate with key stakeholders in the planning of distribution and promotion systems for community-based falls prevention programs that draw upon community, provider, workplace, and government networks. Any given system should meet the following criteria so that it:

- has an outreach and delivery system accessible for all older adult residents in MA including those with low literacy, limited English proficiency, limited resources, and/or with disabilities;
- ensures quality and fidelity of evidence-based programs;
- ensures sustainable funding, staffing, and organization;
- offers ongoing, consistent leadership training across the state;
- provides monitoring and evaluation to determine program effectiveness and health outcomes;
- links community-based interventions and clinical providers through a referral system; and
- includes website and/or other outreach vehicles to inform consumers and providers about the community-based programs.

Healthy Aging Community Design

Goal: Healthy aging, and specifically falls prevention, is considered integral to community design and built environment strategies in the Commonwealth.
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Healthy aging community design is the process of planning and shaping neighborhoods and communities to foster health and safety, especially for older adults. Accessible public transportation; available open spaces; and affordable, retrofitted housing and safe streets are all tools of healthy aging community design. Community design that optimizes healthy aging reduces the physical and environmental factors that may contribute to falls.

In their research, Li et al²³, shows a connection between outdoor falls and environmental factors for adults age 45 and older. Their research identifies uneven surfaces and objects on the streets, sidewalks and curbs as contributors to falls. They conclude: “Many of the environmental factors associated with outdoor falls appear to be preventable through better design and maintenance of sidewalks, curbs, walkways, streets, outdoor parks and recreational places, and parking lots and garages.”

Healthy aging community design (also referred to as “built environment”) involves the collaboration of diverse groups of professionals such as public health and elder service professionals, urban planners and land use experts, transportation engineers, builders, park and recreation planners, and contractors, to name just a few. When homes are built with no-step entryways, when traffic lights are programmed to allow for older adults to make it safely across the street, when curbs are clearly marked, and when sidewalks are free of cracks and ice and snow, this is healthy aging community design.

In Massachusetts, a number of organizations and coalitions are already addressing aspects of the built environment and its impact on healthy aging. For example, the Age-Friendly Cities network was established by the World Health Organization to promote and implement policies and environmental factors that support healthy aging. At least five Massachusetts cities and towns have joined this network (see Model 4).

The MA Partnership for Health Promotion and Chronic Disease Prevention is a coalition of public and private organizations with a shared interest in the prevention and reduction of chronic disease. This Partnership has designated the built environment as one of seven priority areas for action and has formed a workgroup to address it. The Built Environment Community of Practice (BECOP) has representation from a variety of organizations including Massachusetts Department of Public Health, Massachusetts Department of Transportation, the state’s municipalities, WalkBoston, and Massachusetts Public Health Association.

Model 4: City of Brookline, an Age-Friendly City

Noteworthy Components	• Thorough analysis and evaluation of town infrastructure and features from a healthy aging perspective. • Includes participation and input from seniors. • Includes access to information and information sharing with seniors. • Considers healthy aging from a systems and policy perspective.
Why is this important contribution to falls prevention?	• Addresses risk factors for falls such as low vision, safe sidewalks, and appropriate transportation, • Advocates for implementation of community-based programs that are accessible to all.
What we will learn about falls	• How a community designed for healthy aging impacts falls incidence.

In 2012, the city of Brookline was accepted as the first New England member of the World Health Organization's network of Age-Friendly Cities and Communities. Since then, at least 4 other cities and towns in Massachusetts have joined the network. Age Friendly Cities and Towns have features and plans that support healthy aging. In Brookline, already created a detailed strategic plan for an environment that is inclusive and accessible to its elders. The plan includes consideration for falls prevention from its many angles, including strategies that address many of the risk factors for falls such as building design modifications for seniors with low vision, sidewalks free of ice and snow; and highly visible crosswalks.

Recommendation 3: MA Commission on Falls Prevention will expand its collaboration with key stakeholders in healthy aging community design/the built environment in order to increase resource and knowledge sharing.

The MA Commission on Falls Prevention

Goal: The Massachusetts legislature considers statutory changes to support the MA Commission on Falls Prevention and its ongoing work.

As the Commission progresses in its work, additional experts in fields that impact falls prevention will provide needed knowledge and input and will enable the Commission to delve deeper into key topics that impact falls. Specifically, vision (low vision is common amongst the elderly, and a risk for falling), falls researchers (who are aware of the latest information and strategies), and healthcare coverage and payment (who can help inform falls-related payment discussions) are needed in the Commission's membership.

Also, the Commission proposes to deliver to the legislature annual activity updates and a full narrative report every other year. This enables the Commission to keep the legislature abreast of its activities while at the same time allowing the focus of the Commission's work to center on information gathering and promoting falls prevention activities rather than report drafting.

Recommendation 4: Incorporate the following statutory changes in the Commission's enabling statute:

- Appointment of additional Commission members with the following areas expertise: vision, falls research, and healthcare coverage and payment, and the built environment;
- Revision of the scope of Commission reporting to the legislature to include an annual activities update and a full report every two years.

EndNotes

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- ¹ Massachusetts Department of Public Health, Bureau of Health Information, Statistics, Research and Evaluation, Injury Surveillance Program. (January 2015). Injuries Among Massachusetts Residents: 2011.
 - ² U.S. Census Bureau, Population Division, Interim State Population Projections of Population for Five-Year Age Groups and Selected Age Groups by Sex (Table 3): July 1, 2004 to 2030." Data File 2. Table compiled by the U.S. Administration on Aging.
 - ³ Gillespie LD, Robertson MC, et al. (2012) Interventions for Preventing Falls in Older People Living in the Community. *Cochrane Database Syst Rev Online* 9:CD007146.
 - ⁴ Stevens JA, Phelan EA. (2013) Development of STEADI: A Fall Prevention Resource for Health Care Providers, *Health Promotion Pract*, Vol. 14, No. 5 706–714.
 - ⁵ Op. cit. Massachusetts Department of Public Health, Bureau of Health Information, Statistics, Research and Evaluation, Injury Surveillance Program. (January 2015).
 - ⁶ Ibid.
 - ⁷ Op. cit. US Census Bureau, Population Division, 2005 Interim State Population Projections, (Table 4)
 - ⁸ Iezzoni LI, Kurtz SG, Rao SR. (October 2014). Trends in U.S. adult chronic disability rates over time. *Disabil Health J.* 7(4):402-12.
 - ⁹ Charlesworth CJ, Smit E, Lee DS, Alramadhan F, Odden MC. (March 2015) Polypharmacy Among Adults Aged 65 Years and Older in the United States: 1988-2010. *J Gerontol A Biol Sci Med Sci.* pii: glv013. [Epub ahead of print]
 - ¹⁰ Centers for Disease Control and Prevention, National Center for Injury Prevention and Control. (2005) Web-based Injury Statistics Query and Reporting System (WISQARS) [online]. Retrieved July, 7, 2015 from www.cdc.gov/ncipc/wisqars.
 - ¹¹ Op. cit. Stevens, JA, Phelan, EA. (2013 Sep).
 - ¹² American Geriatrics Society, AGS/BGS Prevention of Falls in Older Adults, Clinical Practice Guidelines. Retrieved July, 2015 from <http://www.medcats.com/FALLS/frameset.htm>.
 - ¹³ Massachusetts Department of Public Health, Prevention and Wellness Trust Fund Website, available at <http://www.mass.gov/eohhs/gov/departments/dph/programs/community-health/prevention-and-wellness-fund/>
 - ¹⁴ Op. cit. American Geriatrics Society.
 - ¹⁵ Rubenstein LZ, Solomon DH, Roth CP, Young RT, Shekelle PG, Chang JT, MacLean CH, Kamberg CJ, Saliba D, Wenger NS. (2004 Sep). Detection and management of falls and instability in vulnerable elders by community physicians. *J Am Geriatr Soc*, 52(9), 1527-1531.
 - ¹⁶ Wu S, Keeler EB, Rubenstein LZ, Maglione MA, Shekelle PG. (November 2010). A cost-effectiveness analysis of a proposed national falls prevention program. *Clin Geriatr Med*, 26(4), 751-766.
 - ¹⁷ Op. cit. Stevens, JA, Phelan, EA. (2013 Sep).
 - ¹⁸ STEADI Website, available at <http://www.cdc.gov/homeandrecreationalsafety/Falls/steady/about.html>
 - ¹⁹ Op. cit. Gillespie LD, Robertson MC, et al (2012).
 - ²⁰ Ibid.
 - ²¹ Carande-Kulis V, Stevens JA, Florence CS, Beattie BL, Arias I. A cost benefit analysis of three older adult fall prevention intervention. *Journal of Safety research* (2015), <http://dx.doi.org/10.1016/j.jsr.2014.12.007>
 - ²² Op. cit. Wu S, Keeler EB, Rubenstein LZ, Maglione MA, Shekelle PG (November 2010).
 - ²³ Wenjun Li, Theresa H.M. Keegan, Barbara Sternfeld, Stephen Sidney, Charles P. Quesenberry, Jr, and Jennifer L. Kelsey. (July 2006). Outdoor Falls Among Middle-Aged and Older Adults: A Neglected Public Health Problem. *American Journal of Public Health*: 96(7),1192-1200.