Expanding Falls Prevention Through Surveillance, Community-Clinical Linkages, and Strategic Planning and Evaluation

A GUIDE FOR STATE HEALTH DEPARTMENTS

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LIST OF ACRONYMS

AAA	Area Agency on Aging
ACL	Administration for Community Living
ACO	Accountable care organizations
AHRQ	Agency for Healthcare Research and Quality
ASTHO	Association of State and Territorial Health Officials
ATSDR	Agency for Toxic Substances and Disease Registry
BRFSS	Behavioral Risk Factor Surveillance System
CDC	Centers for Disease Control and Prevention
CFA	Center for Forecasting and Outbreak Analytics
CHW	Community health workers
CMS	Centers for Medicare & Medicaid Services
COVID-19	Coronavirus disease of 2019
CSTE	Council of State and Territorial Epidemiologists
DMI	Data Modernization Initiative
DUA	Data use agreements
ED	Emergency department
EHR	Electronic health record
ELC	Epidemiology and laboratory capacity
EMS	Emergency medical services
HCUP	Healthcare Cost and Utilization Project
ICD	International Classification of Diseases
IHI	Institute for Healthcare Improvement
MLTC	Managed long-term care
MOU	Memorandum of understanding
MPA	Multisector plans on aging
MMWR	Morbidity and Mortality Weekly Report
NACCHO	National Association of County and City Health Officials
NCOA	National Council on Aging
NEMSIS	Nationwide Emergency Medical Services Information System
NPHL	The Network for Public Health Law
NSSP	National Syndromic Surveillance Program
OAA	Older Americans Act
PHIG	Public Health Infrastructure Grant
SUA	State Unit on Aging
STEADI	Stopping Elderly Accidents, Deaths and Injuries
WISQARS	Web-based Injury Statistics Query and Reporting System

INTRODUCTION

Unintentional falls are the leading cause of injury and injury death among older adults (aged ≥65 years) in the United States. Each year, about 14 million older adults report falls and 5 million report fall injuries.[1] Older adult falls contribute to more than 900,000 hospitalizations every year.[2] A fall-related hospitalization increases the likelihood of a long-term nursing home admission, creating either a temporary or permanent loss of independence.[3] In 2021, there were 38,742 fall-related deaths among older adults in the United States, averaging more than 100 deaths per day.[4] Falls among older adult populations in the United States are a public health burden, leading to over $50 billion in medical costs each year.[5]

Falls and fall deaths increase with age. However, age-related physical changes are only partially responsible for an older adult fall. Chronic conditions, when in the presence of age-related changes, put an older adult at a higher risk.[6] The following age- and comorbidity-related changes increase falls risk among older adults:

- Abnormal gait
- Decreased lower extremity muscle strength
- Impaired balance
- Cognitive decline
- Visual impairment
- History of previous falls
- Fear of falling
- Home hazards
- Multiple chronic conditions
- Polypharmacy (i.e., concurrent use of multiple medications).[7]

Several falls risk factors are modifiable, and while risk factors such as age are not modifiable, it is important to note that age is a risk factor partially due to modifiable factors—such as declining strength—that can be addressed. With the right intervention tailored to change or manage the risk factor, many falls could be prevented. For example, regular structured exercises aimed at improving strength, gait, and balance have been found to effectively reduce falls risk.[8] Home modifications led by an occupational therapist have also been shown to reduce falls.[9]

Healthcare providers have an important role in falls prevention; however, healthcare providers cite limited time during an office visit and lack of falls prevention education as barriers.[10] CDC developed the STEADI (Stopping Elderly Accidents, Deaths and Injuries) initiative to help healthcare providers make falls prevention a routine part of clinical practice. STEADI is based on the American and British Geriatrics Societies' Guideline for the Prevention of Falls in Older Persons and takes a multifactorial approach to falls prevention. A healthcare provider first screens an older adult for falls risk, assesses the at-risk older adult to determine their modifiable risk factors, and then intervenes by addressing the risk factors and/or by referring the older adult to other providers (e.g., physical therapist, occupational therapist, pharmacist, tai chi instructor). STEADI includes resources such as an algorithm to guide healthcare providers through the core elements of the STEADI process as well as training, clinical tools, functional assessments, and educational materials for patients.[11]

Community-clinical linkages are connections between community and clinical sectors to decrease the burden of falls and improve population health.

State health departments have important roles to play in fostering connections between clinicians within healthcare systems and other governmental and nongovernmental partners within communities who offer falls prevention programs using the STEADI materials. These connections, referred to as "**community-clinical linkages**," are defined as connections between community and clinical sectors to decrease the burden of falls and improve population health. Community-Clinical Linkages for the Prevention of Chronic Diseases: A Practitioner's Guide offers more information about key implementation strategies to establish and strengthen community-clinical linkages.

Purpose of This Guide

This guide is intended to be a comprehensive resource for state health departments in understanding how to align current falls prevention efforts to support community-clinical linkages and offer strategies to assist in implementing new efforts to support these linkages. While the content in this guide is primarily informed by states and the context might differ in U.S. territories and freely associated states, the concepts may still be applicable across island jurisdictions. ASTHO will continue to look for opportunities to increase awareness of and best practices for falls prevention in island contexts. This guide assists health departments in:

1. Documenting current activities in falls prevention (Step 1).
2. Understanding how current activities can be used to support community-clinical linkages in communities, (Step 2) including:
    a. Using surveillance data to track trends and raise awareness with clinical champions.
    b. Developing connections between clinical partners who recommend interventions to older adults for their risk factors and community partners hosting evidence-based and best practice programs.
    c. Connecting with federal, state, and local partners working in falls prevention.
    d. Conducting strategic planning and evaluation activities.
3. Learning about falls prevention approaches from three states (North Carolina, New York, and Nebraska).
4. Planning for expanding your falls prevention activities to support community-clinical linkages (Step 3).

The information contained in this report was collected through literature review, interviews with state health departments and subject matter experts, and survey responses from state health departments (see Appendix 1).

Governance Structures of State Health Departments

State health departments vary in their governance structures. CDC reports on four types of governance structures:

- **Centralized or largely centralized structure:** Local health departments are primarily led by employees of the state.
- **Decentralized or largely decentralized structure:** Local health departments are primarily led by employees of local governments.
- **Mixed structure:** Some local health departments are led by employees of the state and some are led by employees of local government. No single structure predominates.
- **Shared or largely shared structure:** Local health departments might be led by employees of the state or by employees of local government. If they are led by state employees, then the local government has the authority to make fiscal decisions and/or issue public health orders; if they are led by local employees, then the state has authority.

ASTHO's Profile of State and Territorial Public Health also provides information on state and territorial public health agency activities, structures, and financial and workforce resources.

Roles of State Health Departments

Falls prevention involves multiple divisions and programs within a health department, including injury prevention, chronic disease, healthy living, healthy aging, epidemiology, rural health, health facilities, and minority health. Historically, an injury prevention program's division within a public health agency has led falls prevention initiatives with funding through CDC's Core State Injury Prevention Funding. Over time, with new research modeling falls prevention as a chronic condition that needs follow-up, connecting falls prevention to other chronic diseases, and

developing an understanding of shared risk and protective factors with other topics, falls prevention has also become part of divisions of chronic disease, public health nursing, community health nursing, and other state health entities that promote healthy aging and older adult health. Collaboration with tribal or Indian Health Service programs is an important aspect of falls prevention in American Indian and Alaska Native communities. The Administration for Community Living (ACL) and CDC are federal funders who support this work. The National Council on Aging is a national nonprofit organization supporting falls prevention.

At a high level, state health departments have the potential to be involved in:

Conducting Surveillance on Falls Indicators: State health departments play a lead role in collecting, analyzing, sharing, and communicating about data related to falls. State health departments also have access to regularly reported patient safety data about experiences of near-harm and harm, including patient falls, and analyzing and disseminating this data could help prevent future events.

Supporting Clinical Falls Prevention, Community Falls Prevention, and Community-Clinical Linkages: State health departments support the strategic development of falls-related programming in clinical and community settings, train community organizations on delivering evidence-based falls prevention programs, and leverage and strengthen relationships across clinical and community settings to advance falls prevention. State health agencies are one of the many entities collaborating to do this work.

Strategic Planning and Evaluation: State health departments lead and co-develop strategic planning processes and evaluation activities to elevate falls prevention activities and infuse them throughout their state. This work is often done through or in collaboration with state falls coalitions and patient safety entities or boards.

The roles that the state health department plays within each of these areas are not mutually exclusive, and often overlap as surveillance activities inform strategic planning and program development and evaluation. In turn, strategic planning informs what surveillance activities and programs will be implemented. Additionally, aspects of **equity, communication, and partnership—**which are foundational public health services—are intertwined with each of the aforementioned roles in falls prevention.[12]

State health departments engage in:

Applying a Health Equity Lens: Across all the roles it serves, the state health department is called upon to be a leader to ensure equity remains at the center of the work. Health equity occurs when "everyone has a fair and just opportunity to be as healthy as possible in a society that values each member equally through focused and ongoing efforts to address avoidable inequities, historical and contemporary injustices, and the elimination of disparities in health and healthcare."[13] State health departments must ensure that falls prevention work is done through an equity lens.

Communicating for Multiple Purposes: The large network of partners involved in falls prevention activities along the community-clinical spectrum necessitates using a variety of communication skills. State health departments have the potential to be a leading convener of partners in falls prevention and thus need the ability to use different communication styles for different purposes. Communication about data is a distinct skill set from communicating with partners to develop programming and strategy. Messaging about the importance and value of falls prevention strategies and that falls are preventable (rather than an inevitable part of aging) is critical to ensuring the state health department's work continues. Furthermore, increasing public education and awareness of falls as a public health issue is a key state health department role.

Facilitating Multisector Partnerships: State health departments initiate and facilitate community-clinical linkages for falls prevention (e.g., STEADI) as well as lead or support state falls prevention coalitions which gather people from multiple sectors.

Multisector Partners

Falls prevention is not exclusively a healthcare or public health concern; rather, different organizations and domains in a community play a role. Additionally, federal agencies and national organizations offer resources and guidance related to falls prevention for communities' use. Figure 1 outlines many of the key governmental and nongovernmental partners involved in falls prevention, described in detail below.

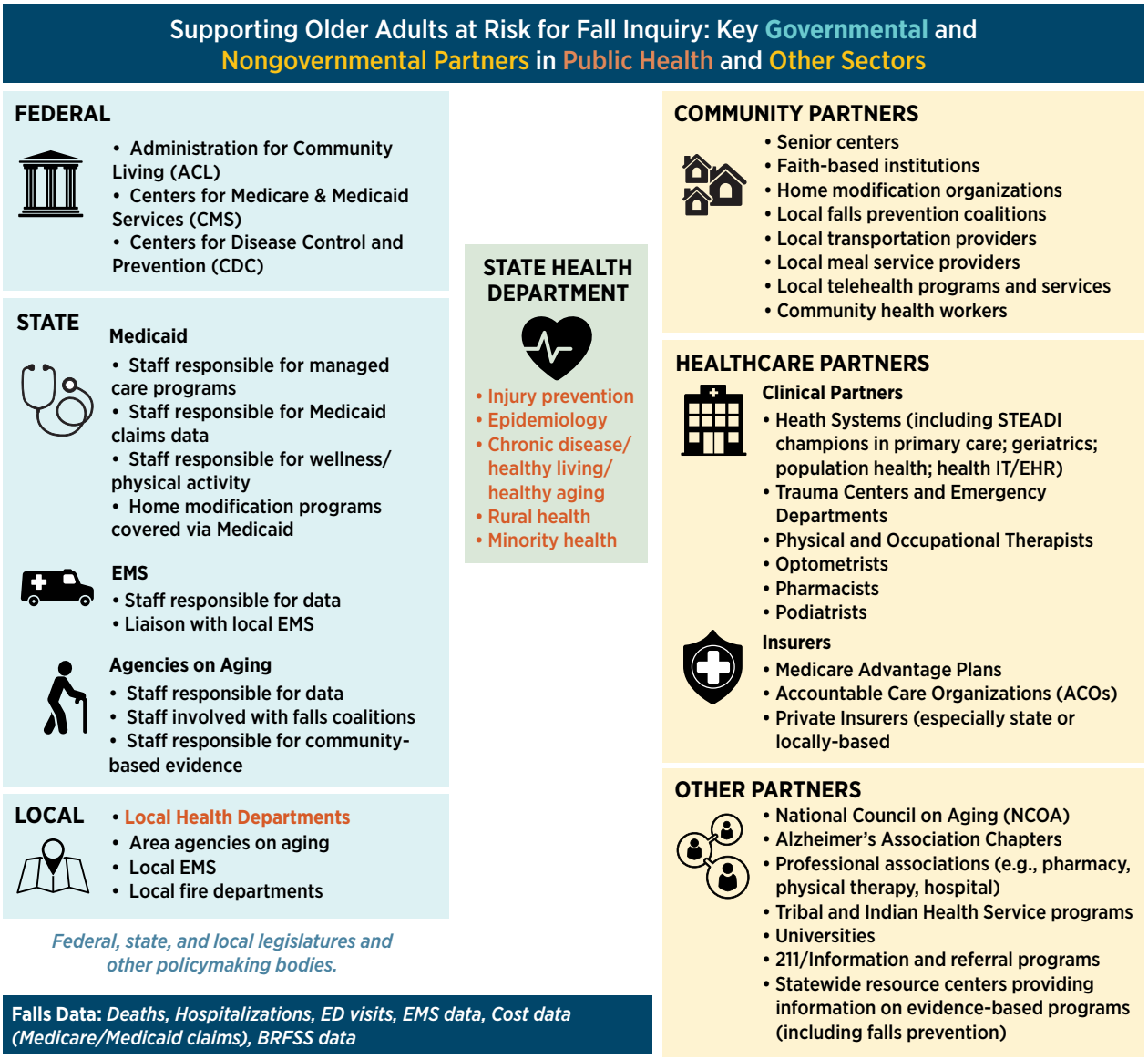


FIGURE 1: Key Governmental and Nongovernmental Actors in Public Health and Other Sectors Supporting Older Adults at Risk for Falls. *(This figure is adapted from a figure that Dr. Bruce Finke of the Indian Health Service presented at CDC's Older Adult Falls Reverse Site Visit in Atlanta in December 2022.)*

Key Governmental Partners

Federal Partners: Federal partners such as ACL, CMS, and CDC offer resources and funding for older adult falls prevention activities.

Local Health Departments: Local health departments are often referred to as "boots on the ground," as they implement many of the falls prevention activities in coordination with the state health department. NACCHO recently released a partner resource to this guide, which aims to help local health departments develop capacity to support clinical older adult falls prevention.

Medicaid/Medicare: The vast majority (93.6%) of older adults rely on governmental health insurance programs, making them key partners in obtaining coverage for evidence-based programs and providing reimbursement waivers for falls prevention program participation.[14]

State Emergency Medical Services: Emergency medical services (EMS) programs offer valuable perspectives as one of the key responders to 911 calls for falls in the home. State EMS programs can be helpful liaisons with local EMS programs and offer data. EMS may also be engaged in prevention programs such as home assessments.

State/Regional Trauma Advisory Councils: Many state statutes call for creating state and/or regional trauma advisory councils to advise on issues related to the statewide trauma care system. **These councils can be partners in falls prevention**.

State Agencies on Aging: State units on aging, and corresponding area agencies on aging (AAA) at the local level, are currently the primary government agencies responsible for funding and administering falls prevention evidence-based programs, including home modifications and referrals to services. Multisector plans for aging provide opportunities to improve the accessibility and safety of housing and public spaces.

State/Local Patient Safety Authority: Patient safety authorities collect reports of patient safety events from healthcare facilities. A patient fall can be one such safety event.

Nongovernmental Partners

Healthcare Partners: The STEADI Initiative maps out clear roles for several clinical partners, including health systems and the nurses, nursing assistants, physicians, nurse practitioners, physician assistants, pharmacists, and physical and occupational therapists within. Additionally, tribal and Indian Health Services programs, trauma centers and emergency departments, optometrists, ophthalmologists, community health workers, local telehealth programs, and EMS responders can play a role in falls prevention.

Electronic Health Record and Health Information Exchange Vendors: Electronic health record (EHR) and health information exchange vendors are necessary partners in working to modify and automate aspects of STEADI in healthcare systems.

Insurers: Similar to Medicare and Medicaid partners, nongovernmental insurers such as accountable care organizations, managed care organizations, and private insurers can be engaged in reimbursement and payment methodologies for evidence-based programs.

Community Partners: The National Council on Aging (NCOA), tribal and Indian Health Service programs, senior centers, faith-based institutions, wellness centers, aging services, Alzheimer's Association chapters, professional associations (e.g., physical therapy associations), 211 Information/referral programs, statewide resource centers focused on prevention, public libraries, higher education institutions (including schools of public health, medical school, nursing school and schools of healthcare professionals), and other community organizations are important to involve in aspects of falls prevention.

How to Use This Guide

The guide offers a three-step process for state health departments seeking to expand falls prevention. Island jurisdictions can apply the process outlined below, adapting as needed to their own contexts.

The **first step** is a current state assessment to answer the question, "What are our current falls prevention activities?" See the Current State Assessment section of this guide for more information on this step.

The **second step** is reviewing the falls prevention strategies to support community-clinical linkages to understand, "What else could we do to support community-clinical linkages to prevent falls in our state?" Information in the Falls Prevention Strategies section of this guide is organized by the state health department's roles, including surveillance, programs, and strategic planning and evaluation. Within each of these roles, we discuss aspects of partnership, communication, and equity. Additionally, we present three case studies from Nebraska, New York, and North Carolina to further illustrate how three state health departments have approached various falls prevention strategies.

The **third step** introduces questions to help state health departments develop action steps to answer, "What are we going to do next?" See the Develop Your Plan section of the guide for more information on this step.

The three steps above prepare a state to implement falls prevention activities and also perform routine monitoring and evaluation.

STEP 1: CURRENT STATE ASSESSMENT

Overview

The first step in using this guide is to spend time understanding what falls prevention work your state health department currently does. See Appendix 2 for a current state assessment tool. Completing this tool will give state health department leaders a snapshot of what work they are currently doing and what gaps exist.

The following is a high-level overview of the Current State Assessment Tool.

Surveillance

The tool has four questions asking state health departments about the surveillance activities they are currently doing. These questions ask about data sources, data analysis, and data dissemination activities, as well as partnerships for surveillance.

Clinical Falls Prevention, Community Falls Prevention, and Community-Clinical Linkages

The next section of the tool includes questions about the programmatic work that the state health department is directly engaged in or supports within the community and clinical environments, as well as how the two are formally or informally connected. The questions ask about work pertaining to the STEADI initiative and other community-clinical linkage work, clinician and community education, and partnerships across these various activities.

Strategic Planning and Evaluation

The final section of the tool includes questions about the strategic planning and evaluation activities that the state health department is engaged in, including coalition work.

Partnerships, Communication, and Equity

These strategies are essential components of the above roles and as such, the assessment tool includes questions asking state health departments to list and think about each in relation to those roles.

STEP 2: FALLS PREVENTION STRATEGIES TO SUPPORT COMMUNITY-CLINICAL LINKAGES

Overview

This part provides guidance on how state health departments and territorial health agencies can leverage roles and responsibilities to further community-clinical linkages in your jurisdictions.

The Surveillance Section outlines important data sources for identifying and tracking falls-related injuries and deaths over time and discusses how data products can be used to inform and prompt both clinical and community partners to join prevention efforts in high-risk areas.

The Clinical Falls Prevention Section explains CDC's Stopping Elderly Accidents, Deaths, and Injuries (STEADI) initiative and how the tools provided can be used to work routine older adult falls prevention into the clinical workflow.

The Community Falls Prevention Section outlines evidence-based community strategies for falls prevention.

The Community-Clinical Linkages Section outlines strategies for state health departments to foster connections between clinicians within healthcare systems (described in the Clinical section) and other government and nongovernmental partners within communities (described in the Community Section) who offer falls prevention programs using the STEADI materials.

The Strategic Planning and Evaluation Section outlines strategies for ensuring strategic planning initiatives consider community-clinical linkages for falls prevention and that evaluation data inform program implementation and dissemination efforts.

Surveillance

Surveillance activities are a key focus for state health departments, allowing states to assess and monitor population health as well as investigate, diagnose, and address health hazards, causal factors, and root causes. Surveillance plays an important role in community-clinical linkages, as data on the burden of falls-related injuries and deaths can be important tools to raise awareness among both clinical and community partners to prioritize work on falls-prevention initiatives and get involved with STEADI and other community-clinical linkages.

The surveillance cycle includes:

- Data sources
- Data management and analysis
- Dissemination and communication of data products.

With respect to falls, state health departments are involved in all aspects of the surveillance cycle, as described on the next page. Strategies for centering equity are reflected in each of these three subsections.

Data Sources

To effectively conduct surveillance activities, your state health department must collect and/or have access to a variety of data sources. The most used surveillance datasets for falls and fall injuries include:

- Deaths
- Emergency department visits
- Hospitalizations
- EMS
- Behavioral Risk Factor Surveillance System (BRFSS). (BRFSS is recognized as being well-suited to understanding some of the socio-demographic and risk factors associated with falls among community-dwelling older adults.)

These sources are widely recognized in falls prevention as the "gold standard," but there are several other data sources that state health departments may find valuable in their falls surveillance work. Many of these data sources represent innovative ways to expand knowledge of social determinants of health, to understand the environmental context of falls, and to access more timely data.

Table 1 below outlines descriptions of available data sources for surveillance, federal and state data sources to access this data, and the value each source brings to falls prevention. Newly emerging and innovative data sources for falls prevention are noted with a lightbulb icon.

TABLE 1: Federal and State Level Data Sources for Falls Surveillance Measures

Surveillance Measure	Data Source	State-Level Contact	Description	Value Added	Additional Resources
Deaths	National Vital Statistics System (available via WISQARS or CDC's tool WONDER)	Contact the office of vital records or state health department.	• Provides information on the numbers of deaths attributed to falls and includes • Demographics (e.g., age, gender).	Helps support a focus and prioritization on falls prevention by putting falls in context with other leading causes of death by allowing stakeholders to calculate death rates.	• The Council of State and Territorial Epidemiologists' (CSTE) Special Emphasis Reports on falls. (The "data preparation spreadsheet" offers an Excel template for summarizing death, emergency department, and hospital data; lists relevant ICD codes; and has embedded formulas to calculate age-adjusted rates, among other features.)
Emergency department visits	• National Electronic Injury Surveillance System's All Injury Program, available via WISQARS– *(national-level only)* • The Healthcare Cost and Utilization Project (HCUP) (*national data and selected states' data only*)	Contact state-based hospital association or state health department.	Provides information on the morbidity attributed to falls.	Helps support a focus and prioritization on falls prevention.	• CSTE's Injury Surveillance Toolkit (Under the "injury indicator" section on the webpage, one can find ICD codes for fall-related hospitalizations, emergency department visits, and hip fractures.) • CSTE's Special Emphasis Reports on Falls (The "data preparation spreadsheet" offers an Excel template for summarizing death, emergency department, and hospital data; lists relevant ICD codes, and has embedded formulas to calculate age-adjusted rates, among other features.)
Emergency department visits– continued	CDC's National Syndromic Surveillance Program (NSSP) 	Contact your state-based syndromic surveillance lead.	The state syndromic surveillance system gets data from emergency departments to monitor injuries, including falls.	Provides near real-time data to inform prevention; includes chief complaints as well as diagnosis data.	• NSSP Resources (Use the CDC syndrome definition "CDC Falls 65 and Older v1" in ESSENCE to identify fall-related emergency department visits. For more information, refer to this article about CDC's fall syndrome definition.) • CSTE's Injury Surveillance Toolkit

CONTINUED					
Surveillance Measure	**Data Source**	**State-Level Contact**	**Description**	**Value Added**	**Additional Resources**
Hospitalizations	• National Electronic Injury Surveillance System's All Injury Program (Available via WISQARS *(national-level data only)* • HCUP (*national/ selected states' data only*)	Contact state-based hospital association or state health department.	Provides information on the morbidity and potential co-morbidity and sequelae (e.g., association with chronic disease) attributed to falls.	Helps support a focus and prioritization on falls prevention.	• CSTE's Injury Surveillance Toolkit (Under the "injury indicator' section on the webpage find ICD codes for fall-related hospitalizations, emergency department visits, and hip fractures.) • CSTE's Special Emphasis Reports on Falls (the "data preparation spreadsheet' offers an Excel template for summarizing death, emergency department, and hospital data. It lists relevant ICD codes and has embedded formulas to calculate age-adjusted rates, among other features.)
Calls to EMS for falls and fall-related injuries 	The National Emergency Medical Services Information System (NEMSIS)	• NEMSIS state reports. • States can contact their state EMS organization to establish data sharing agreements. Visit the National Association of State EMS Officials (NASEMSO) to locate your state EMS agency.	• EMS provides data on falls-related calls, and can break them down by cause of fall. • States can also receive EMS data anecdotally by talking with EMS providers to get their input on frequent falls for the same individual.	• Captures falls that don't receive medical treatment (i.e., calls where EMS helps an older adult after a fall but doesn't transport them to a hospital). • Provides insights on trends that may not be captured in other data and informs community context of falls.	• NACCHO's fall prevention guide features questions to ask local EMS providers about older adult falls (page 13).
Self-reported falls/injuries	BRFSS	Contact your state BRFSS coordinator for state-based data.	Can be used to examine self-reported falls and injuries that may not have involved clinical partners as well as learn some of the health and social context of older adults who fall.	Can provide insights on the social context for older adults and help identify shared risk and protective factors with other healthy living issues.	• BRFSS' web enabled analysis tool

CONTINUED					
Surveillance Measure	**Data Source**	**State-Level Contact**	**Description**	**Value Added**	**Additional Resources**
Severe falls injuries	Trauma Quality Programs Participant Use File (*available by application only*)	Contact your state trauma registry program.	Trauma registries collect additional data on those admitted to the trauma center for injuries.	Provides additional context around severe falls injuries.	• American College of Surgeons' National Trauma Data Standard has a data dictionary and other trauma registry resources. The association also hosts the External Cause of Injury Matrix and Trauma Type Map spreadsheet.
Number of older adults screened, assessed, and/or given a falls prevention plan of care 	N/A	STEADI Program Data	Individual-level data from specific health systems implement-ing STEADI. (Can be from the electronic health record or collected via survey, tracking forms, etc.)	• Provides process data on numbers of older adults screened, assessed, and given a falls prevention plan of care. • Enables assessments of whether screened individuals fell post-screening.	
Falls-related healthcare costs 	• The Centers for Medicare & Medicaid Services (CMS) • Association for Healthcare Research and Quality (AHRQ) All-Payer Claims Databases.	Contact your state office of Medicaid/ Medicare.	Provides data on costs attributed to falls.	• Includes expanded cost data to use when partnering with insurance companies. • May provide additional information of the social context of older adults. • All-payer claims databases are large state databases that can include medical claims, pharmacy claims, dental claims, and eligibility and provider files collected from private and public payers.	• ResDac provides information on locating and using CMS data.
Social variables 	• Rural Population Health in the United States: A Chartbook • CDC/Agency for Toxic Substances Disease Registry Social Vulnerability Index	• County Health Rankings • Rural Population Health in the United States: A Chartbook	Social variables may provide additional context for falls.	Identifies equity issues and shared risk and protective factors with other healthy living topics.	• Safe States Shared Risk and Protective Factor Connections Lab

Key Strategies for Data Sources

A few strategies can help you secure access to data or collect data for surveillance.

Understanding How and Why to Collect Data

It is critical to understand how and why you should collect data, as these methods impact the utility of any data source and have implications for data accuracy and availability. Transparency about data standards and data availability uphold the CDC Foundation's Principles for Using Public Health Data to Drive Equity. For example, if you collect data from only certain segments of the population, any products using this data must clearly state this and not over-generalize to a broader population.

Data Sharing Agreements

State health departments often do not have access to all possible sources of falls data and will need to utilize data sharing agreements to access and/or share certain data. Having data sharing agreements in place protects against unauthorized access to data and establishes boundaries for data use. Examples of data sharing agreements are available at the Network for Public Health Law (NPHL). Additionally NPHL offers a helpful checklist of information needed to address proposed data collection, access, and sharing.

Strategies to use to secure data sharing agreements include:

- Understanding rules, regulations, and laws impacting the authority to gather, store, and use data. This may include working with legal departments for assistance and guidance. (Working with legal departments may also help you gain access to additional sources of data.)
- Aligning and being consistent with recycling such agreements from other programs, if possible.
- Using premade data-sharing agreement templates.

Use Equity Principles During Data Collection

Many standardized data sources were created years ago without concern for data equity principles. This has contributed to a lack of comprehensive data about demographics, context, content, inclusion and exclusion criteria, and sampling.

Strategies that will ultimately lead to more equitable data use include:

- Routinely reviewing data sources using the principles for using public health data effectively, and
- Revising data collection procedures to reflect equitable data collection practices including routinely sharing data with communities and jurisdictions, developing an accessible data request process, and incorporating social determinants of health in data collection processes.

Data Management and Analysis

After you collect and/or source our data, you should analyze the data to help understand the burden of falls in a given area or subpopulation. Three analysis areas that will be helpful for your state health department's falls prevention work are:

1. Describing recent trends in falls, fall-related injuries and deaths.
2. Understanding disparities in race/ethnicity, age, gender, rural status, disability status, and veteran status.
3. Identifying counties or census tracts with a high burden of falls.

These analyses will benefit from best practices in data analysis and management, which require personnel with experience and skills in biostatistics or epidemiology to effectively evaluate the data to develop quality data summaries. Many state health departments have internal data analysis expertise. Additionally, some states have centralized informatics or data analytics sections that are shared across many departments within state government. If your state health department does not have internal capacity, one common strategy is to partner with academic institutions for this work. Table 2 lists data management and analysis practices and resources to help support and inform the practice.

TABLE 2: Resources to Support Best Data Management and Data Analysis Practices

Practice	Data Analysis or Data Management	Resources
Creating a data inventory to document what technologies, platforms, tools, software, or operating systems are used to collect, manage, store, and analyze data.	Data Management	• CSTE Injury Data Science Competencies
Documenting data structure and processing flows.	Data Management	• CSTE Injury Data Science Competencies
Checking comprehensiveness of data via running frequency analysis on variables.	Data Management	• CDC Data Management Workbook • CDC Updated Guidelines for Evaluating Public Health Surveillance Systems
Performing routine data quality (reliability and validity) checks to understand patterns of missing or incomplete data and potential errors in data entry.	Data Management	• CDC Data Management Workbook • CDC Updated Guidelines for Evaluating Public Health Surveillance Systems • CSTE ICD-10-CM Injury Surveillance Toolkit
Developing infrastructure and protocols for responding to data requests.	Data Analysis	• CSTE Injury Data Science Competencies
Improving data coding coordination between prehospital, hospital, and the health department.	Data Analysis	• CSTE Injury Data Science Competencies
Following National Center for Health Statistics and CDC standards for setting falls injuries indicators to ensure comparability.	Data Analysis	• CDC Proposed Framework for Presenting Injury Data Using ICD-10-CM External Cause of Injury Codes • Safe States Consensus Recommendations for Surveillance of Falls and Fall-Related Injuries
Including community context and community engagement to prioritize analysis questions.	Data Analysis	• CDC Principles for Using Public Health Data to Drive Equity
Disaggregating data and analyzing intersectional experiences.	Data Analysis	• CDC Principles for Using Public Health Data to Drive Equity • NPHL Disaggregation of Public Health Data by Race and Ethnicity: A Legal Handbook

Innovative Directions

Older adult falls occur in a variety of environments and contexts, and the partners involved in prevention efforts are spread across multiple organizations and sectors. This means that *data* collected about falls are also context dependent and often siloed by domains. Data linkage projects offer state health departments a chance to enhance your analysis activities and learn more about the burden of falls in your states. CSTE offers a data linkage toolkit to assist in these types of projects.

Additionally, looking at existing data efforts, such as CDC's Center for Forecasting and Outbreak Analytics or CDC's Data Modernization Initiative , may provide insights on how to extrapolate processes and learnings to falls prevention. State-level funding through the Public Health Infrastructure Grant and the Epidemiology and Laboratory Capacity grants helps states modernize their public health data systems. As part of this funding, states may have new or existing projects that can align with the aforementioned falls prevention data strategies.

States can reach out internally to their Data Modernization Initiative director for updates on planned work and opportunities to collaborate or leverage data modernization funds.

Data Dissemination and Communication

Data interpretation and dissemination are the final steps in the surveillance process and are fundamental to getting data learnings to clinical and community partners. Providing data/findings in an easy-to-understand way for partners to use in different contexts for specific audiences is key to highlighting falls prevention as a priority. State health departments often maintain expertise in data analysis and creating high quality data products, thus playing a critical role in ensuring partners have timely and accurate data on falls.

You can use a variety of dissemination strategies to help your clinical and community partners communicate about:

- Identifying and monitoring trends in falls injuries and deaths over time.
- Identifying low resource areas (i.e., areas with little to no falls prevention programming in the community) or areas of highest need (i.e., areas with high rates of falls-related injuries and/or deaths) within a state.
- Identifying priority populations who are experiencing high rates of falls-related injuries and/or deaths.
- Informing health department, community, and/or coalition action planning for prevention and identifying areas for community-clinical linkages.
- Reporting on grant requirements to funders of falls prevention activities.
- Tracking disparities in falls-related injuries, deaths, and clinical visits over time (including racial/ethnic and geographic disparities).
- Assessing the impact of COVID-19 pandemic on falls-related injuries, deaths, and clinical visits.
- Assessing impact of other chronic diseases on falls-related injuries and deaths.

The audience of the aforementioned activities will vary by the data's intended purpose. Table 3 below outlines the different audiences that state health departments can engage for a variety of purposes and examples of data tools to use.

TABLE 3: Intended Audience and Purpose of Surveillance Products

Audience	Purpose	Examples of Surveillance Products
Falls coalitions	• Promote awareness of the issue of falls. • Identify solutions/ Highlight areas of need. • Build connections to engage in prevention activities.	• Surveillance reports (e.g., MMWR) • Mapping tools • Action plans
Policy-makers/decision-makers	• Raise awareness of falls as a health and economic priority.	• Surveillance reports (e.g., MMWR) • Mapping tools • Educational issue/policy briefs
Funders	• Report on grant requirements.	• Data briefs (e.g., State of Aging Health in America series)
General public	• Raise awareness of falls as a health and economic priority. • Raise awareness of older adult falls as a preventable health problem. • Build connections to engage in prevention activities.	• Dashboards • Mapping tools • Social media posts • Community newsletters
Healthcare systems and/or healthcare providers (including physical therapists, occupational therapists, and pharmacists)	• Raise awareness of falls as a health and economic priority. • Raise awareness of older adult falls as a preventable health problem. • Build connections to engage in prevention activities. • Motivate engagement by sharing information on disproportionate falls impact.	• Surveillance reports (e.g., MMWR) • Mapping tools • Action plans • Data briefs (e.g., State of Aging Health in America series)
Internal divisions within the health department	• Build connections to engage in prevention activities. • Inform community planning. • Drive evidence-informed decisions.	• Surveillance reports (e.g., MMWR) • Mapping tools • Action plans • Data briefs (e.g., State of Aging Health in America series)
Performance improvement teams involved in health assessment/health improvement planning	• Inform community planning and prioritization.	• Mapping tools
EMS	• Raise awareness of falls as a health and economic priority. • Motivate engagement by sharing information on disproportionate falls impact. • Emphasize the role EMS can play in education and prevention, especially among those in rural areas with limited services or to those who are homebound. • Understand frequent users through hotspot maps to improve crew management and preparedness.	• Surveillance reports (e.g., MMWR) • Mapping tools • Action plans • Data briefs (e.g., State of Aging Health in America series)
Medicare, Medicaid, and insurance companies	• Raise awareness of falls as an economic issue. • Build support for coverage of prevention activities.	• Surveillance reports (e.g., MMWR) • Mapping tools • Action plans • Data briefs (e.g., State of Aging Health in America series)

Surveillance Partnerships

Partnerships are a critical factor throughout the surveillance cycle. While your state health departments have a large role in each step of the surveillance cycle, other partners can also participate in each step of the cycle in various ways. Partners can send data to the state health departments for analysis as well as help departments use data to inform decision-making and community engagement. Table 4 summarizes the partner and state health department roles in each section of the surveillance cycle.

TABLE 4: Partner and State Health Department Roles in Surveillance

Surveillance Cycle	Partner	Partner Roles	State Health Department Roles
Data sources	• Healthcare systems • Governmental agencies • Vital statistics • Informatics • State unit on • Aging • BRFSS • Insurance companies • Community members	• Supply data to state health departments for analysis and dissemination. • Inform data collection and priorities.	• Maintain data use agreements/ memoranda of understanding. • Create data repositories/ inventories. • Create mechanisms for community members to engage with the health department to understand context around data as well as how appropriate the source captures the intended data.
Data analysis	• Universities and other academic partners • Community members	• Assist with data analysis and provide technical assistance with higher-level methodologies. • Inform analysis questions.	• Perform data analysis. • Create mechanisms for community members to engage with the health department to understand context around data.
Data dissemination	• All partners listed above	• Co-create data products. • Help disseminate products.	• Create data products. • Disseminate the products. • Use data products to engage in partnerships for prevention. • Increase visibility of the issue. • Support decision-making • Demonstrate transparency and accountability.

Resource Considerations for Surveillance

Surveillance activities are often resource intensive, involving costs to collect, maintain, and store data, as well as the personnel and time needed to analyze and disseminate data. Leveraging your partnerships to share data and expertise is one way state health departments maintain strong surveillance programs. Partnering with groups such as NCOA and Age-Friendly Public Health Systems that are already invested in aging initiatives may lead to more success. Additionally, NCOA's State Falls Prevention Coalitions page can help you identify falls coalitions in each state.

Read the New York and North Carolina case studies to learn how these states used data in their falls prevention work.

Key Surveillance Questions to Inform Community-Clinical Linkages

- Which areas within our state have a high-falls burden (e.g., high rate of falls-related deaths, emergency department visits, hospitalizations)?
- Which populations within those areas are disproportionately affected by falls?
- Which partners can help us access, collect, and/or share information?
- Which data products would be most useful to advance our falls prevention work?

Clinical Falls Prevention

The clinical sector is composed of organizations that provide services, programs, or resources directly related to diagnosing or treating community members' medical conditions in healthcare settings.[15] These include hospitals, federally qualified health centers (e.g., community health centers, public housing primary care programs, migrant health centers), rural clinics, group practices, single practices, and community clinics.

The U.S. Preventive Services Taskforce recommends a multifactorial approach to falls prevention interventions to reduce falls in at-risk older adults.[16] Multifactorial interventions include an individual risk assessment to develop a tailored plan for each adult.[17] A Cochrane review also showed that multifactorial intervention, which included individual risk assessment, reduced the rate of falls by 24%.[18] Older adult falls prevention is effective, although clinicians cite a lack of time and education as reasons for not doing it.[19, 20] CDC developed the STEADI initiative to provide tools and technical assistance for making falls prevention a routine part of older adult care.

State health departments can raise awareness of the preventability of falls and of evidence-based falls prevention strategies by educating administrators, doctors, and other healthcare providers in state and local healthcare systems to help implement these strategies in clinical settings. State health departments can use data to determine healthcare systems that serve populations of older adults with high fall and fall injury rates and can collaborate with them to implement STEADI-based falls prevention. The following is an overview of STEADI and a link to resources to aid health departments in implementing STEADI-based falls prevention.

Three Core Components of STEADI:

FIGURE 2: ***Components of STEADI***

The STEADI algorithm for clinicians outlines how to implement the three strategies. STEADI can be implemented in both outpatient and inpatient settings and the initiative offers a suite of materials for both settings that state health departments can share with clinicians.

Materials for Providers

The STEADI initiative offers a variety of additional screening, assessment, and intervention tools and resources for healthcare providers.

Screening

The Stay Independent tool is a 12-item screening instrument recommended by the STEADI algorithm. The Falls Risk Factor Checklist helps clinicians identify falls risk in older adults.

Assessment

The STEADI initiative offers information and resources about four functional assessments for gait and balance:

1. The Timed Up and Go (TUG) test
2. The 30-second Chair Stand test
3. Measuring Orthostatic Blood Pressure
4. The 4-Stage Balance Test

Medication review and management are also important clinical assessment activities. STEADI has a list of medications linked to falls and offers the SAFE Medication Review Framework to help providers with medication review.

Intervention

Clinical interventions for falls include referrals to physical therapy, occupational therapy, podiatry, vision screening and hearing screenings. CDC created the Fall Prevention Patient Referral Form and the Recommended Fall Prevention Program Form to help providers make these referrals. These forms may also be helpful in working with IT departments within health systems to modify the EHR to include these referrals.

A fourth element of STEADI is patient follow-up, which includes routinely checking on the patient to determine if they are doing the recommended strategies. The Helping My Older Patients Reduce Their Risk of Falling guide may be useful for this. If a patient is not participating in the recommended strategies, the clinician can ask additional questions to find out if the patient understands the strategies and what barriers they are facing. It may be necessary to further educate the patient about the strategy and its purpose or address barriers, such as cost or transportation.

Appendix 3 provides summary tables on the tasks, instruments and partners involved in each element of STEADI.

Key Questions About Clinical Interventions

It's important to ask the following questions about clinical interventions for falls:

- Which health systems and clinics in our community have disproportionately high rates of falls?
- What existing infrastructure does the health system and/or clinic have to support a screening, assessment, and referral process?
- What supports (academic detailing, notification of community resources, EHR modification) will the health system need that our state health department can facilitate?
- What key relationships do we need to establish or sustain to build and maintain screening, referral, and assessment processes?

Community Falls Prevention

According to CDC, "The community sector is composed of organizations that provide services, programs, or resources to community members in non-healthcare settings."[21] Examples include community pharmacies (as opposed to a pharmacy in a healthcare setting, such as a hospital), employers, faith-based organizations, community centers (e.g., senior centers), volunteer organizations (e.g., American Heart Association), and nonprofit organizations (e.g., YMCAs).[22]

Several activities within the core components of falls prevention (screen, assess, intervene) do not necessarily have to be conducted solely within clinical environments. **Screening** is well suited to occur in a community environment, as extensive training is not required for people to administer the validated instruments to older adults or a proxy, such as family member or caregiver, without extensive training. Older adults not found to be at risk can be referred to community programs such as strength and balance or falls prevention education classes to ensure that they continue to remain at low risk. One example of a non-clinical screening tool is NCOA's Falls Free Checkup.

For those found to be at risk, **assessments** are components that are well-suited to occur in clinical environments. Most assessments require some level of clinical training to administer.[23]

While most falls prevention **interventions** also require clinical training, many take place in community-based environments outside of health systems such as within libraries, community centers, senior centers, senior living residences, fitness centers, fire departments, and churches. State health departments can use the following resources detailing evidence-based falls prevention programs:

- A CDC Compendium of Effective Falls Interventions: What Works for Community Dwelling Older Adults
- Preventing Falls: A Guide to Implementing Effective Community Based Falls Prevention Efforts

NCOA also has compiled a list of evidence-based strategies that reduce falls or reduce falls risk on their website. State health departments are positioned to help ensure these strategies are in place within communities. Additionally, health departments and community organizations play an important role assuring that older adults have resources (e.g., transportation) to get to clinical resources.

Key Questions About Community Interventions

It's important to ask the following questions about available community interventions for falls:

- What evidence-based falls prevention interventions exist in our community?
- Where do interventions currently exist, and for whom? Does this match our surveillance data?
- Where do community members go to find out about falls prevention interventions? Is there a centralized location (e.g., a resource hub)?
- What key relationships do we need to build or maintain to ensure our awareness of community-based falls prevention interventions?

Community-Clinical Linkages

As mentioned previously, both clinical and community sectors can implement STEADI, but it's best if both clinical and community work are connected in a system of care. State health departments have important roles to play in fostering community-clinical linkages between clinicians within healthcare systems and other governmental and nongovernmental community partners that offer falls prevention programs. *Community-Clinical Linkages for the Prevention of Chronic Diseases: A Practitioner's Guide* offers more information about key implementation strategies to establish and strengthen community-clinical linkages.

Your state health department is well poised to ensure all three STEADI components are in place and to work with partners to connect the dots via community-clinical linkages.

One example of a community-clinical linkage is STEADI-RX, an initiative designed to improve collaboration between community-based pharmacists and healthcare providers.[24] Through this program, pharmacists screen patients for falls risk and perform a medication review at the pharmacy. This information is shared with both patient and provider, allowing the provider to follow up. The Community Pharmacy Algorithm and the STEADI-RX Guide for Community Pharmacists can help with this process.

The next sections discuss how state health department help facilitate other community-clinical linkages.

State Health Department Roles to Engage Community

While intervening to reduce risk is the third component of the STEADI initiative, it is often the *first* step in getting a community-clinical linkage started. One main hesitation clinical partners may have in screening older adult patients and assessing their falls risk is not having a place to refer those who are at higher risk for falls. Therefore, having falls prevention programming resources (e.g., home modification services and strength, balance, and mobility classes) in place in the community for providers to share with those screened for high falls risk is a key motivator for engaging champions and health systems in STEADI. There is greater ability to connect clinical partners to community interventions if evidence-based activities are currently available.

Partnerships to Support Community Programming

A critical role for your state health department is to develop and maintain local relationships to support community programming. These relationships could be internal to the state health department (i.e., involve multiple divisions and programs) and external (i.e., involve nongovernmental partners).

Building Internal and External Networks for Program Support

State health departments are instrumental in networking and relationship building. A key role in this arena is developing connections with other partners around shared risk and protective factors. According to Safe States, "Shared risk and protective factor approaches are efforts to improve multiple population health and quality-of-life outcomes by aligning diverse, multi-sector interventions that positively and equitably impact the social determinants of health."[25] Safe States' Connections Lab offers additional information on shared risk and protective factors. This work may be *internal* to the state government and focus on building networks within the state health department or between the state health department and other state agencies.

Partnership opportunities may depend on where falls prevention sits within the state health department. While falls prevention has traditionally been part of state health departments' injury prevention programs, a growing number of departments have programs focusing specifically on older adult health and healthy aging. Having falls prevention aligned with other programs focusing specifically on older adults, such as arthritis prevention and chronic disease self-management, may support stronger partnerships between the public health and aging sectors.

Other factors that can facilitate internal relationships include:

- Focusing on intentional relationship building with state agency partners (e.g., state unit on aging) who can support falls related work.
- Establishing regular/monthly standing meetings between the health department and aging partners to identify opportunities to support programs and learn from others' approaches.

- Having falls-focused health department staff consult with subject-matter experts to identify and address shared factors associated with increased falls risk, such as nutrition, physical activity, and social isolation.

Notably, community-based partners at the local level benefit from having a single point of contact at the state level. Streamlining *internal* relationships can allow for a single point of contact within the state health department for all efforts related to health promotion for older adults.

Learn more about Nebraska's experience with internal relationship building by reading the case study.

Community partners *external* to the state health department offer a variety of falls prevention interventions, such as strength and balance exercise programs, home environment risk assessments, home modification programs based on the risk assessment. Your state health department can support external community partners in the following ways:

Exercise Programs

- Train community-members and staff at community-based organizations (e.g., senior centers, community recreation departments, YMCA) to be trainers in evidence-based falls prevention programs to increase the availability of evidence-based programs.

Medication Review and Home Environment Risk Assessment

- Partner with the office of the state fire marshal to engage and train volunteer firefighters in in-home falls risks assessments.
- Train EMS providers to do motivational interviewing to help older adults identify fall risks and refer them to falls prevention programs supported by the state unit on aging and area agencies on aging.
- Engage community pharmacists in medication reviews to address multiple potential injury risks, including falls, overdoses, and suicides.

Home Modifications

- Collaborate with home improvement stores, which are strategic partners for home modification programs to promote related programs and tools.
- Partner with environmental health and weatherization state programs to provide home weatherization, with contractors working on falls mitigation.

It is important that your state health department is aware of ongoing falls prevention initiatives so that you don't duplicate work but rather support and expand the work that is already happening.

State Health Department Roles for Engaging Clinical Partners

State health departments can help facilitate the following key first steps of successfully implementing STEADI in clinical environments.

Use data products to spread information and awareness about the benefits of STEADI:

- Include testimonies from older adults in your community who have been helped by falls prevention, providers who have implemented STEADI, and other stories about the benefits of falls prevention. (See CDC's case study examples.)
- Provide evidence of increased independence, reduced healthcare utilization, or decreased emergency department admissions due to STEADI to help further engage insurers and healthcare systems. (See CDC's examples.)
- Highlight practitioners who are applying STEADI in the field in your injury prevention briefs, fact sheets, informational resources, and state falls updates. (See CDC's examples.)
- Share information at fall and osteoporosis prevention summits in your state.
- Connect with your relevant state professional associations, such as:
  - » Alzheimer's Association
  - » American Hospital Association
  - » American Geriatrics Society
  - » American Physical Therapy Association
  - » American Pharmacists Association
  - » American Occupational Therapists Association

- Offer training to providers. A partnership between CDC and American Board of Internal Medicine and American Board of Family Medicine gives maintenance of certification credits to clinicians for completing STEADI, reducing barriers to obtaining this type of certification credit.

Share STEADI resources: You are encouraged to share STEADI resources with your clinical partners (both within and outside of formal falls prevention partnerships) and through other avenues, including sharing information on your health department website.

Use data to understand the opportunities for partnering with health systems: Engaging healthcare systems large and small can be an effective way to facilitate screening and assessment in clinical settings. When planning outreach to health systems, it is important to consider potential reach, especially to populations experiencing disproportionate impact from falls.

Engaging a large health system that spans several counties and has multiple primary care sites and a trauma center may provide extended reach for a moderate amount of effort, but may not reach people who live in rural areas. Alternatively, engaging a small hospital may not bring you extended reach, but may serve a high number of rural areas and have unique mechanisms for appealing to this population.

Furthermore, partnering with healthcare systems like Kaiser Permanente that are both payors and providers can be very helpful for falls prevention, as they often have health fairs or other avenues for bringing clinical and community partners together. These types of partners may also be helpful for discussing how to develop financial incentives for falls prevention interventions.

Find local champions: Partnering with multiple champions within the healthcare system can help gain systemwide buy-in. This includes a physician-level champion to encourage other physicians, but also champions to encourage nurses, medical assistants, and others within the clinical setting.

While engaging champions and health systems generally happens at the level of local health departments, state health departments can support local strategizing on this front. Your support also produces benefits for other counties when a health system has a multi-county service area. Working with a champion within the healthcare system provides local accountability and can also help expand various parts of the initiative within the system (e.g., by adding the STEADI algorithm to an EHR). You can help local health departments use existing community-clinical linkages from other activities (e.g., chronic disease partnerships) and identify providers with a personal connection to falls due to medical specialty (e.g., geriatrics) or a personal experience involving a family member or loved one who has experienced a fall.

Engaging state or national professional healthcare associations is another strategic way to get broader buy-in and provide STEADI or general falls prevention information and resources. Finally, providing some funding for clinical partners' time can be essential for getting protected staff time for providers to be trained on STEADI. Local champions can also help get existing clinical networks engaged to extend the reach of STEADI.

Implement a coordinated approach to modifying workflows and the electronic health record: Embedding the STEADI algorithm into systemwide EHRs and related workflows takes time, given the healthcare system's competing priorities. Further, systems must ensure that once embedded, the falls module is sustainable through system changes and/or updates. As STEADI grows, EHR providers may have templates available for national use. For example, EPIC now has a STEADI module for all health systems that use EPIC nationally.

It's important for state health departments to take a coordinated approach to engaging clinicians and modifying an EHR, as academic detailing to make changes to the EHR helps bring clinicians on board and having clinicians support EHR modifications from their system IT departments is necessary to getting the changes prioritized.

Connect referral sources: Modifying the EHR to include ways for clinical partners to connect to community-based interventions and/or resource hubs is also useful. Your state health department can

work with clinical and community partners to create referral pathways within EHRs to facilitate connections between clinical and community interventions.

Clinical Partnerships

Hospitals, nurses, prehospital community paramedics, mobile integrated healthcare teams, community-based organizations, pharmacies, primary care physicians, physical therapists, and occupational therapists are all partners in STEADI work. See the STEADI mapping tool in Appendix 3 for additional information about these partners' roles, which may be beneficial to pull out of this guide and share with clinical partners as you engage them in establishing community-clinical linkages for falls prevention. roles, which may be beneficial to pull out of this guide and share with clinical partners as you engage them in establishing community-clinical linkages for falls prevention.

Other Opportunities for State Health Departments to Foster Community-Clinical Linkages

Coalitions

Convening a falls prevention coalition is a key way to engage and coordinate with partners around older adult falls. Coalitions provide a mechanism for strategic planning, using surveillance and program information across networks and partners. Coalitions allow health departments to gain situational awareness of on-the-ground realities that influence falls prevention work and data.

A falls coalition creates partnerships with those working on risk factors for falls, such as substance use, mental health, social isolation, cancer, diabetes, and cardiovascular disease. Through the coalition, your state health department provides information about shared risk factors and engages clinical and community-based organization partnerships. Coalitions also play a strong role in public outreach, engagement, and uptake of surveillance products and program offerings.

A state health department presence at events and coalition meetings helps with relationship building; when potential partners hear about state involvement for falls, they are more likely to reach out and ask for your support, and those that reach out are more likely to feel invested. Coalition-building around falls identifies opportunities to simultaneously meet the goals of the health department, clinical partners, and community-based partners. Falls coalitions are conduits for health departments to engage with clinical partners who are invested in falls prevention and to create interprofessional connections and knowledge sharing opportunities, as well as bridge research and practice.

If you are not already connected to your state falls prevention coalition, review NCOA's database. If one does not exist in your state, you can also establish one. NCOA also has a useful guide for building falls coalitions.

Community Health Workers

The American Public Health Association's CHW Section defines a community health worker as "a frontline public health worker who is a trusted member of and/or has an unusually close understanding of the community served. This trusting relationship enables the worker to serve as a liaison/link/intermediary between health/social services and the community to facilitate access to services and improve the quality and cultural competence of service delivery." A community health worker also builds individual and community capacity by increasing health knowledge and self-sufficiency through a range of activities such as outreach, community education, informal counseling, social support, and advocacy.

State health departments can develop and deepen relationships with community health workers (CHWs) in your state to understand what falls prevention resources may be useful to them and the community. Since CHWs are members of the communities they serve, they can offer insights about how to make public health programs and resources culturally relevant and accessible to the communities that need to be reached. In addition, CHWs may be employed by community-based organizations, health departments, health centers, or other entities to conduct home visits with patients, which could present an opportunity to conduct home screenings and to connect patients to healthcare.

State health department staff, in collaboration with CHWs themselves, can discuss which healthy aging-related trainings would be helpful in this work. State health departments may specifically want to connect with CHW coalitions or networks in their state, and the National Association of Community Health Workers can facilitate introductions as needed.

Co-hosting Community Events

Co-hosting community events focused on falls prevention with partners such as local hospitals and fire departments can help you disseminate falls prevention resources and information to the general public and build relationships with those partners. EMS is often a great partner in community events, particularly if their participation in the event is tied to continuing education credits. Motivators for engaging EMS with falls prevention include the potential to reduce the number of falls calls they must make, as well as offering training and paying for their time spent participating in falls activities (since they are not paid for assessments and only get paid for transport to the emergency department).

Promoting Increasing Mobility in Communities

Focusing on mobility is a key strategy of both clinical and community evidence-based falls prevention programs. Additionally, promoting mobility can be a strategic way to leverage other public health benefits of healthy community design, physical activity, and patient safety initiatives. There is potential here to partner with built environment partners (e.g., city planning teams) inside and outside of health agencies.

Further resources for your state health department to share with community and clinical partners include:

- CDC's MyMobility planning tool, which helps older adults plan to stay independent on their own terms. This tool may be useful for both clinical and community programs.
- Institute for Healthcare Improvement's Age-Friendly Health Systems 4Ms (What Matters, Medication, Mentation, Mobility) framework for evidence-based falls prevention, which may be useful in collaborating with health systems.

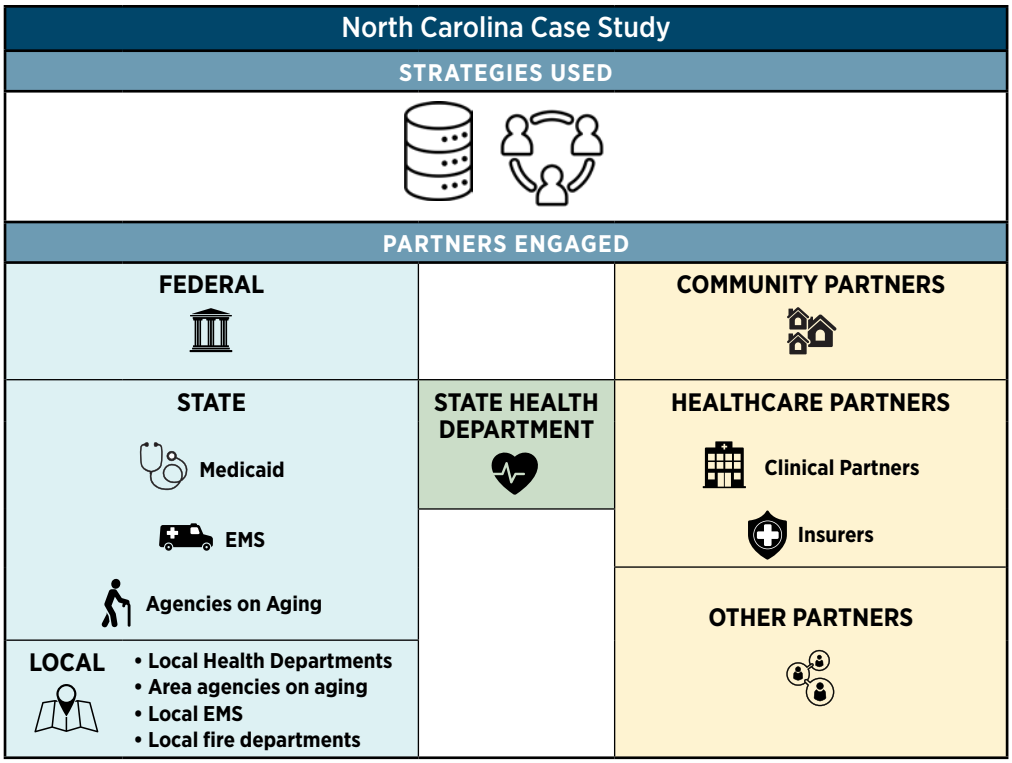
Integrating with Direct Services and Other Programs

Falls prevention information and resources can be integrated into other direct service capabilities delivered through state and local health departments, such as blood pressure screenings, brain health activities, vision and hearing screenings, music therapy, community recreation, and medication reviews.

Establishing Resource Hubs

State health departments can work with statewide efforts to coordinate local resources and services (like 211 or No Wrong Door) to build a central hub to access information and for providers to refer to people. You can play a role in connecting external community networks to healthcare systems (e.g., ACL's Community Care Hubs) to improve coordinated access and delivery of services.

North Carolina is one state that used a variety of funding sources to develop a robust resource hub. You can read more about this in the case study.



North Carolina Division of Public Health's Injury and Violence Prevention Branch has partnered with the state's aging network, with support from an ACL falls prevention grant through University of North Carolina at Asheville's North Carolina Center for Health and Wellness, to maintain the robust NC Falls Prevention Coalition since 2008 and also a healthy aging resource center of community-based falls prevention programs. The center is working on supporting coalition partners to integrate falls prevention program referrals into the electronic health record and has had success working with nurse practice managers to prioritize screening for falls, a required component of the annual Medicare wellness visit.

The NC Falls Prevention Coalition has established workgroups for developing referral pathways, training and technical assistance, promoting clinical and community partnerships, educating stakeholders about the connection between chronic disease and injury prevention, and examining shared risk and protective factors. The coalition has placed emphasis on working locally and attributes success to time spent building local-level relationships. For example, certain counties have engaged community paramedics programs for referrals. Additionally, they were able to engage coalition partners through relationships with physical therapy associations.

The coalition plans to hold listening sessions in each county to identify local falls prevention champions.

Surveillance data were instrumental in building support for prioritizing falls prevention through automating data processes and generating static reports and an interactive dashboard to inform prevention activities. Much of the Injury and Violence Prevention Branch's falls surveillance work has been supported by the Council for State and Territorial Epidemiologists' Applied Epidemiology Fellows placed with the branch. This work has included mapping to identify counties experiencing a high burden of fall injury and proximity to healthcare facilities in those areas. The team is now working on an injury indicator project focused on improving how surveillance data are processed and including broader indicators on shared risk and protective factors. This work is focused on removing silos between data sources and supporting data storytelling, while creating a crosswalk to facilitate additional data analyses and dissemination.

Lessons learned from North Carolina include:

- Local-level relationship building works!
- Developing relationships with occupational and physical therapists is valuable for raising awareness about falls prevention in health systems.
- Coalition workgroups help widen the breadth of the work.
- Surveillance and data are instrumental in identifying falls as a priority issue and can be useful in establishing new partnerships.
- Holding informational sessions for interested potential champions is a recruitment strategy that state health departments should consider.
- Bidirectional communication between clinical partners and community-based evidence falls prevention is critical to achieving falls prevention goals.

Addressing Equity Within Community-Clinical Linkages

State health departments can leverage program partnerships to address equity in falls prevention activities in a variety of ways, including through program content, accessibility, and community engagement.

Program Content

It is important for state health departments to consider the communities in their jurisdiction and support implementing appropriate tailored program offerings. Translating and transforming evidence-based programs for effective and appropriate use in diverse communities (e.g., Hispanic or Latino communities and American Indian or Alaska Native communities) is vital. This includes obtaining input from communities to ensure the program content makes sense and is offered in the participants' language.

Access to Falls Prevention Programs

Engaging rural areas is a health equity priority, as residing in rural areas is an extrinsic risk factor for falls because fewer providers or community falls prevention programs are located in rural areas.[26] Additionally, in the event of a fall, older adults residing in rural areas live further from healthcare facilities and often experience longer EMS response wait times due to longer travel times.[27] Health departments often train local partners to administer evidence-based programs but these trainings may not reach rural areas if, for example, one person is trained but they are based in the headquarters of a large region.

State health departments can encourage local leaders to engage partners across counties outside of the health department, leveraging strategies from chronic disease work that increases programming reach. Although difficulties with online programs persist, virtual programming can be a helpful strategy for engaging rural areas due to travel time for in-person events or poor weather conditions that limit travel. Virtual programming can also be helpful in reaching people who lack transportation or may be unable to leave the home without assistance.

Coordinating expanded access to telehealth and digital literacy skills through programs that send someone into an older adults' home to set up technology increases reach and improves the equity of falls prevention by enabling remote service delivery. State health departments can expand these program models' reach by partnering with universities.

Engaging Community Members in Falls Prevention

Engaging older adults in falls prevention is important when selecting evidence-based interventions and conducting outreach and coalition-building in the community. It's especially important to include representation from communities that may be disproportionately affected by falls. Networks of communities may or may not overlap with existing aging networks. State health departments can consider which partners within state government and within communities should be involved to engage people within communities of interest. Human Impact Partners outlines steps in a community involvement process that reflects equity principles, which are noted below.[28] Generally, state health departments should assess who is impacted by the activity and meaningfully engage them in public health work early and often.

Human Impact Partners Community Involvement Process Questions

1. What is the decision being considered, and who is the decision-maker? Who is doing the assessment?
2. What impacts will the decision have? How will it affect inequities?
3. How did you involve community members who are most affected by this potential decision in the assessment? What changed as a result?
4. What recommendations will you make? How will you communicate the recommendations to communities who are most affected by the decision?

It is also important to engage trusted community messengers to deliver messages and engage community members.

Resource Considerations for Falls Prevention Programs

State health departments are often working in resource constrained environments. Leveraging partnerships is important to aligning resources and may lead to additional success in securing additional federal funding for falls prevention activities. Health insurers represent an innovative network for develop reimbursement or covered benefits for falls prevention activities in the community-clinical linkage space.

Federal Funding

State health departments often use CDC core state injury prevention program cooperative agreement money to fund falls prevention programming as a subcomponent of the traumatic brain injury funding priority area. These funds can be used to support health department staff time on falls activities and to fund local health departments, local area agencies on aging, and other community-based organizations to implement evidence-based falls prevention programs.

Supplemental grant dollars include Older Americans Act funds for area agencies on aging or other federal, state, and local program-related grants. All states receive Older Americans Act Title III-D funds to administer evidence-based programs for older adults, which can include falls prevention. The ACL Falls Prevention grant program is another source of grant dollars. However, exclusive reliance on grants does not allow for continuation of the state-level infrastructure built during the grant period.

Health Insurers

There is growing interest in health departments approaching health systems and health insurers to reimburse for falls prevention programs. In doing so, it is key for the state health department to make a connection with the state Medicaid agency. Connecting internally with other departments, programs, and teams to see if they have connections with Medicaid counterparts (e.g., Title V and Ryan White HIV/AIDS Program) may be an effective approach. Additionally, helpful first contacts within the Medicaid office include:

- The staff member responsible for wellness initiatives.
- The staff member in a population health or similar department.

The following is a list of innovative ideas for involving insurers in falls prevention work that may gain traction in your state:

- Conducting outreach to managed long-term care plans is one avenue for working with insurers for reimbursement, as these plans are graded based on older adult falls, so they could choose to fund falls prevention for older adults enrolled in the plan.
- Using Otago, a home-based falls prevention program that is also reimbursable through Medicare if the patient is diagnosed with a balance problem.[29]
- Establishing Medicare reimbursement for falls prevention programs administered during home visits.
- Conducting outreach to Medicare Advantage plans to cover evidence-based falls prevention programs and/or adding them to covered benefits.
- Reaching out to mobility and balance-focused programs offered through SilverSneakers and Silver & Fit, which are covered for older adults with participating Medicare Advantage plans.
- Using SNAP-Ed funds to support older adult mobility programs.

Learn more about STEADI implementation from New York's experience.

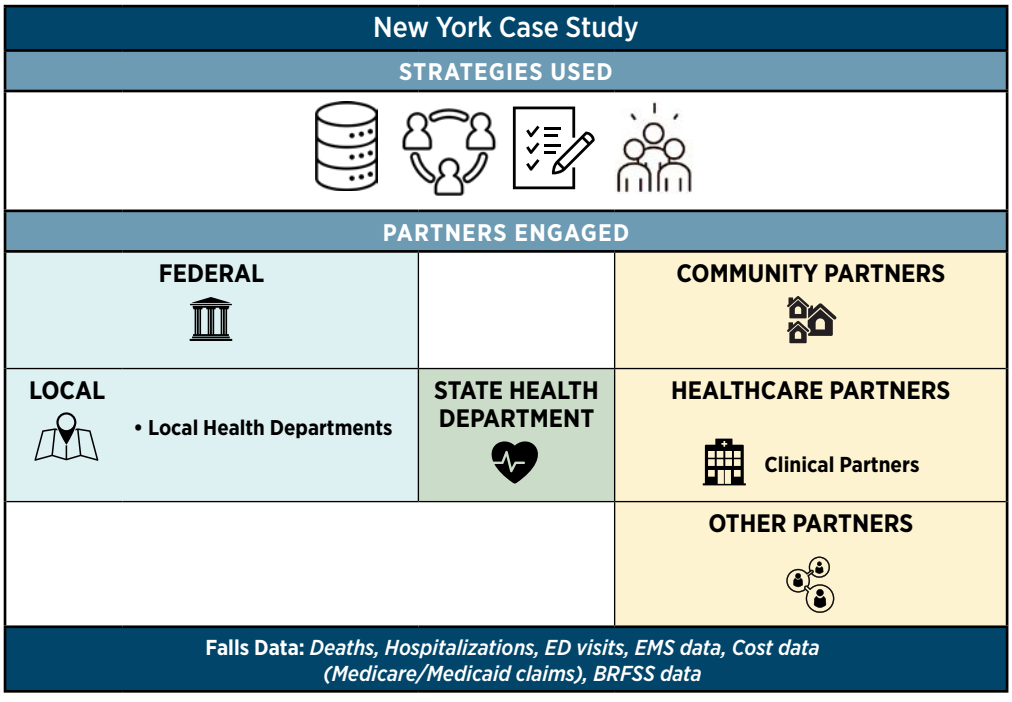
The New York State Department of Health was one of three pilot states that received CDC funding for STEADI implementation in 2011. The state health department used data to focus its STEADI implementation on a health system in Broome County, where the infrastructure of evidence-based programs was already in place, thereby ensuring clinicians had places to refer older adults who were identified with a high falls risk. The state also used data on the county's high fall rates to help engage partners, including a local champion who was dedicated to falls prevention due to a personal experience with a parent who fell.

The result was an implementation of STEADI-based falls prevention in outpatient practice (doctor's offices) in multiple sites of one healthcare system in the county. Physicians in these offices screened older adult patients, assessed those at risk for modifiable risk factors, and prescribed evidence-based interventions. New York Department of Health has sustained this effort since initial funding in 2011.

The state health department was involved with securing partners, analyzing and sharing data, mapping and building an awareness of falls prevention activities across the state, providing guidance to local health departments, and managing funding. The team has published a number of articles on their experience with STEADI:

- "Healthcare Providers Perceptions and Self-Reported Falls Prevention Practices: Findings from A New York Health System"
- "Implementing a Clinically Based falls prevention Program"
- "Preventing Falls Among Older Adults in Primary Care: A Mixed Methods Process Evaluation Using the RE-AIM Framework"
- "Implementation of the Stopping Elderly Accidents, Deaths, and Injuries Initiative in Primary Care: An Outcome Evaluation"

New York State Department of Health's work as a pilot site has allowed the state to consider other avenues for expanding falls prevention, including working with trauma centers, given that fall-related injuries are one of the most common injuries they treat and each Level 1 trauma center must have a full-time injury prevention coordinator who implements programs that address one of the major causes of injury in their community. The department also worked to connect managed long-term care plans with their performance improvement projects by embedding evidence-based fall prevention programs within their systems and also reached Alzheimer's disease and other dementias programs and their caregivers with evidence-based fall prevention programs.



Lessons Learned from New York:

- Having a local clinical champion is important to addressing workflow, academic detailing, and other clinic-specific implementation issues, including how to integrate and build upon other work within the health system to address:
  - » Workflows
  - » Risk assessment
  - » Modifying an EHR
  - » Who needs to be there for each step
  - » IT staff
  - » Academic detailing
  - » Performance measures within the system
- It is helpful to pursue STEADI implementation in places where infrastructure of evidence-based programs are already in place.
- Using data on falls rates helps to engage partners; for example, partners in local counties are more engaged when they are aware of high fall rates in their county.
- Local health departments work hard at the day-to-day operations of getting STEADI up and running, with state health department support.

Maintaining Community-Clinical Linkages

It takes a lot of time and relationship-building to get all three parts of the community-clinical linkage process (screenings, assessments, and interventions) up and running. Once all three pieces are working, it is necessary to maintain the process by routinely reviewing program data—such as the number of older adults who were screened, identified as high risk, and referred for services—to ensure that the cycle doesn't break down. Additionally, it is important to routinely update the resource hubs and referral locations to ensure services still exist, address and contact information are up to date, and other program details are still accurate. Your state health department can help create a maintenance process with clinical and community partners.

Table 5 summarizes all of the steps of a successful community-clinical linkage.

TABLE 5: Steps For a Successful Community-Clinical Linkage for Falls Prevention

Step	What is Involved	Common Pitfalls	Resources to Assist	Keep This in Mind
Understand what interventions are available in which areas	• Relationship building in the community. • Potential training opportunities.	Not spending enough time building relationships and getting to know various partners.	• State Falls Prevention Coalitions list • NCOA guide for building falls coalitions	• It can be time intensive to build trust. • Resource hubs take a lot of work to maintain.
Obtain buy-In from health systems	Connecting with health systems and clinical and non-clinical providers to build support for falls prevention screening and assessment activities.	• Competing demands. • Low/no reimbursement for falls prevention.	• The Coordinated Care Plan to Prevent Older Adult Falls • STEADI Materials for Clinicians	• This step can be time-intensive, given the need to schedule meetings with different providers and develop trust to move forward. Keep the long game in mind! • Work with local health departments to understand the benefits and implications of working with larger and smaller health systems. • Health systems' population health departments may be a good place to begin outreach.
Find local champions—physicians, nurses, clinic managers, IT	Supporting local health department strategizing around engaging health systems and champions, particularly in multi-county service areas.	Clinical providers are **busy**!	• Institute for Health Improvement's 4-M model, which reduces the complexity of older adult care and may help engage clinicians in falls prevention work. • STEADI Materials for Clinicians, including the STEADI Algorithm	• Use existing community-clinical linkages from other activities (e.g., chronic disease partnerships). • Identify providers with a personal connection to falls due to medical specialty (e.g., geriatrics) or a personal experience. • Engage healthcare professional associations (e.g., physicians, physical therapists) at the state and national level.
Modify electronic health records	Embedding STEADI algorithm into the systemwide electronic health record and related workflows.	• Competing demands. • Requires partnering with the health system IT team.	• EHR providers may have templates available for national use. • (EPIC now has a STEADI module that is available nationally to all health systems that use EPIC.)	• This step takes time and is dependent on how healthcare IT systems prioritize falls prevention.
Connect to community resources	• Linking to resource hubs within the EHR. • In some instances, clinicians can "prescribe" falls prevention interventions, and can give direct referrals to programs.	A delicate balance exists in community capacity for providing services and the amount of referrals given.	• ACL hub resources.	• Continuous communication between clinical and community partners is needed to ensure that the system is working.
Create a cycle maintenance process	Creating a process where the community-clinical linkages are routinely reviewed to prevent breakdown of the process.	If this part is not built into the implementation plan, the process can break down.	• Quality improvement professionals may be helpful to engage.	• Health departments need to create and continually monitor data sharing processes to identify the number of people screened, assessed, and referred. • Resource hubs and referral locations need routine updating to ensure services still exist, address and contact information are up to date, and other program details are still accurate.

Key Questions About Community-Clinical Linkages

- What is the current capacity of our community's evidence-based falls prevention programs to take in referrals?
- How will screening, assessment, and referral processes impact community programs' enrollment?
- What data feedback loops need to be created between community and clinical linkages to ensure the system is working as intended?

Strategic Planning and Evaluation

In addition to facilitating surveillance and programmatic activities, state health departments are leaders in strategic planning, evaluation, and planning for sustainability around falls prevention. These activities help to provide an overall framework for your health department's goals, making use of the surveillance and community-clinical linkage information highlighted above.

State health departments can engage in the following key strategic planning and evaluation activities:

- Incorporate falls prevention into community health needs assessments.
- Develop a falls prevention strategy with local health department partners that you can integrate into an overall health agenda for the state.
- Include creating community-clinical linkages as a strategy for falls prevention.
- Develop a sustainability plan for falls prevention work at the state and local levels.
- Align with National Patient Safety Goals, established annually by the Joint Commission, if falls are part of your annual goals.
- Incorporate falls prevention principles into broader healthy communities via design policies that integrate city planning, parks and recreation, and other governmental partners.
- Connect falls prevention risk and protective factors to an overall life course approach across your program area and the health department, which acknowledges that health later in life is influenced by what happens throughout the lifespan.
- Require local health departments receiving falls prevention funding to hold strategic planning sessions and develop sustainability plans throughout the grant period.
- Develop tailored communications for different sectors that emphasize key falls prevention activities they can participate in and connect falls prevention to partners' priorities and existing work.
- Develop comprehensive evaluation plans around falls prevention work. CDC's Evaluation Guide for Older Adult Clinical Fall Prevention Programs can assist with this.

Your internal partnerships within the state health department can help ensure that strategic planning efforts rooted in shared risk and protective factors are consistent and working toward the same outcomes. Academic partnerships can be helpful in developing and implementing evaluation strategies. Partnering with those who are already invested in aging initiatives may help create alignment and synergy in strategies across states.

Addressing Equity Through Strategic Planning and Evaluation

Centering health equity in strategic planning and evaluation is a critical step toward ensuring that your falls prevention direction and resource use is equitable and that your state health department's work helps to reduce disparities. ASTHO published the guide Measuring Health Equity: An Assessment of Equity Metrics in Performance Management and Planning, which aims to help state health departments comprehensively think through health equity planning and metrics. The following is a list of recommendations from this guide that are important to falls prevention strategic planning and evaluation:

- Use disaggregated data to drive decisions about:
  - What activities get prioritized.
  - What populations are prioritized.
  - What geographic locations are prioritized.
- Develop health equity metrics within falls prevention programs.
- Engage communities and potential partners to understand what information is useful to them.
- Work with communities to build the evidence base for falls prevention.

Resource Considerations for Strategic Planning and Evaluation

State health departments can consider developing strategic planning and evaluation efforts in partnership with other internal departments, community-based organizations, and/or health systems partners. Several of these partners conduct routine community health needs assessments or other planning activities. Rather than having each organization conduct separate planning initiatives, consider pooling resources to develop planning and evaluation efforts in tandem.

Key Strategic Planning and Evaluation Questions to Inform Community-Clinical Linkages

Consider the following questions regarding planning and evaluation:

- What aspects of community-clinical linkages need to be prioritized in our health department's strategic plan?
- What components of community-clinical linkages can be aligned with partners' strategic plans?
- Are we connected with our state falls prevention coalition?
- How can we engage community members in our strategic planning process?
- What data do we need to inform our strategic planning efforts?
- What evaluation data currently exists?
- How will we evaluate our strategic priorities?

Nebraska Department of Health and Human Services' Division of Public Health leaned into its strategic planning and partnership development roles. Read the case study to learn more.

Nebraska has done relationship-building and strategic alignment work with falls prevention that has laid an important foundation in the state. The Nebraska Division of Public Health created a new position in 2020 to coordinate its evidence-based falls prevention programs and chronic disease programs. Prior to the creation of this position, all evidence-based programs were housed within the Division of Public Health, with chronic disease programs managed by Nebraska's Chronic Disease Prevention and Control Program and falls prevention programs managed by Nebraska's Injury Prevention Program.

<table>
<tr><th colspan="3">Nebraska Case Study</th></tr>
<tr><td colspan="3">STRATEGIES USED</td></tr>
<tr><td colspan="3">   </td></tr>
<tr><td colspan="3">PARTNERS ENGAGED</td></tr>
<tr><td>FEDERAL  </td><td></td><td>COMMUNITY PARTNERS  </td></tr>
<tr><td>STATE  Agencies on Aging</td><td>STATE HEALTH DEPARTMENT  </td><td>OTHER PARTNERS  </td></tr>
<tr><td>LOCAL 
• Local Health Departments
• Area agencies on aging
• Local EMS
• Local fire departments</td><td colspan="2"></td></tr>
</table>

Nebraska's Division of Public Health decided to streamline all of its falls prevention activities under one job title: the healthy living program coordinator. Since the chronic disease and falls prevention programs operated similarly (e.g., they both included group-based programs, community implementation, fidelity requirements, and leader training), this strategic alignment allowed the program to offer a suite of evidence-based programs and a single point of contact for the vast network of people working in falls prevention across the state.

The healthy living program coordinator developed a sustainability tool for use across prevention programs. The tool features the following six areas of sustainability: organizational support, program capacity, community support, funding, marketing, and referral and retention. The tool aims to make the abstract concept of sustainability more concrete for local organizations implementing evidence-based programs by providing a roadmap for implementing sustainable changes. The tool is also used to onboard new staff and partners.

Nebraska's greater alignment created economies of scale by having one department manage the variety of different inputs related to falls and other public health initiatives sharing universal themes. Additionally, increased communication across programs has created opportunities for new and strengthened partnerships, including with the state unit on aging, senior centers, the state tobacco-free initiative, the state office of minority health, community health workers, and state professional organizations such as the Nebraska Physical Therapy Organization, Nebraska's enhanced services pharmacies, and the Nebraska Medical Association. Quarterly leadership cohorts meet to discuss topics such as program updates, participant retention, referrals to programs, and program fidelity. Many topics discussed are also part of the sustainability tool, which allows leaders to learn from each other rather than recreate the wheel.

Nebraska has a large population living in rural areas. Time spent building relationships with churches, senior centers, and hospitals helped to build upon local level clinical relationships and leverage programs that already go out to rural locations. Community health workers have also played a role in falls prevention. The state health department is currently working to better understand the needs of community health workers by meeting with the organizations involved with community health worker initiatives. Nebraska's Division of Public Health is interested in learning how it can train and leverage this workforce in evidence-based programs.

Lessons Learned from Nebraska:

- Relationship building takes time. The more you include partners, the more they include you.
- Having a single point of contact for falls prevention can help your partners more easily connect with your state health department for support.
- Develop and maintain a list of internal and external partners that includes their contact information and their role in evidence-based programming.
- Work intentionally with your state associations (e.g., pharmacy, Alzheimer's, physical therapy, EMS).
- Grow partnerships with warm handoffs. In the absence of a warm handoff, you may have to take additional time with cold calling and emails—don't give up!
- Share your "wishlist" of programmatic ideas and visions with partners. This helps to identify how to make ideas a reality.
- Local falls prevention champions are key!
- A centralized sustainability tool used across programs gives a roadmap and a vision for all to work toward to comprehensively improve public health.
- Community partners may be willing and able to do work that traditionally was within local health departments.
- There is alignment between all evidence-based programs and the issues of chronic disease and falls prevention are interconnected.

STEP 3: DEVELOP YOUR PLAN

The final step in this guide invites state health departments to plan next steps in their falls prevention initiatives using the current state assessment and information provided about falls prevention strategies. Appendix 4 contains a Planning Questions Tool that includes all of the key questions listed within the Falls Prevention Strategy section (Step 2). It is recommended that state health departments:

1. Complete the current state assessment sections of the Assessment Tool in Appendix 2.
2. Complete the Planning Questions Tool in Appendix 4
3. Revisit the Assessment Tool in Appendix 2 to complete the sections for future planning.

Planning Resources

The following resources provide additional tools and frameworks for needs assessment and planning efforts. While not all of the listed resources are specific to falls prevention, the tools and frameworks used can be adapted to the topic.

- ASTHO Needs Assessment Toolkit for Dementia, Cognitive Health and Caregiving
- Human Impact Partners Health Equity Lens Tool
- A Sustainability Planning Guide for Healthy Communities

Your state health department can use the Planning Questions Tool in Appendix 4 and the Assessment Tool to make decisions about implementing new strategies and monitoring and evaluating the success of those strategies in your state. We encourage aligning this cyclical planning process with existing planning occurring in your state.

CONCLUSION

State health departments are central to implementing and maintaining successful falls prevention initiatives. This guide outlines three steps to help state health departments assess the current state of their falls prevention activities; learn about different strategies they can use to affect change in their states; and plan how to develop, enhance, and/or maintain community-clinical linkages to prevent falls among communities of older adults across the United States.

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APPENDIX 1: Methodology Used for This Report

In October 2022, ASTHO used four mechanisms to conduct outreach to state and territorial health departments to invite them to participate in an environmental scan:

1. Emailing the Safe States Alliance director's group.
2. Networking with ASTHO colleagues to compile a directory of potential state contacts.
3. Reviewing online falls prevention materials with contact information included.
4. Directly contacting health departments.

ASTHO used a standardized set of questions soliciting information on activities, challenges, and recommendations related to falls surveillance and community-clinical falls prevention activities to gather consistent information from surveys and interviews. Participants could respond via a free-response Qualtrics survey or by scheduling a call with the ASTHO team. ASTHO received responses from 32 states and Washington, DC, including 12 interviews. ASTHO also reviewed 17 state falls data reports.

ASTHO partnered with its Island Jurisdiction team to perform outreach to territorial health departments. This team promoted the environmental scan opportunity during an event and by email. While no island jurisdictions participated in the opportunity, this highlighted the need for ASTHO to explore opportunities to increase awareness of and best practices for falls prevention in island contexts.

ASTHO analyzed the information collected and compiled a summary of findings which were used to inform this best practice guide.

APPENDIX 2: Falls Prevention Assessment Tool

Note: This falls prevention assessment tool is designed to be used in two ways:

1. State health departments should conduct a state assessment of falls prevention strategies that are *currently used.* (BLUE COLUMNS)
2. State health departments should note which falls prevention strategies they may want to *explore using in the future*. (ORANGE COLUMNS)

Falls Prevention Strategy: Surveillance

1. **Current State:** Which data sources listed in Column A do you currently use for falls prevention?
   a. If no, who could you connect to inquire about this data source as a next step?
2. **Future State:** Which data sources listed in Column A would you like to explore using for falls prevention?

	Current State		Future State
Surveillance Measures/Data Sources	**Yes/No**	**Contact for More Information**	**Yes/No**
Deaths			
Emergency department visits			
Hospitalizations			
EMS calls and associated data			
Self-reported falls and fall injuries (BRFSS)			
Severe falls injuries (Trauma Registry)			
National Syndromic Surveillance Program			
Number of older adults, older adults screened, older adults screened at risk, assessed, and/or given a falls prevention plan of care (STEADI Program Data)			
Cost data (Medicaid/ Medicare)			
Social factors from County Health Rankings			
Social factors from Rural Population Health in the United States Chartbook			
Other (list name)			

3. **Current State:** Which analysis activities does your state health department conduct?
   a. If yes, how frequently do you conduct the analysis?
4. **Future State:** Which analysis activities does your state health department want to explore using?

	Current State			Future State	
Analysis Activity	**Yes/No**	**If Yes, Frequency of Activity**	**Name/ Location of Analysis Results**	**Yes/No**	**Frequency of Activity**
Trend identification: deaths due to falls, ED visits due to falls, hospitalizations due to falls.					
Disparities identification: race/ethnicity					
Disparities identification: age					
Disparities identification: gender					
Disparities identification: urban/rural status					
Disparities identification: disability status					
Disparities identification: veteran status					
Other					

5. **Current State:** Describe any existing data linkage projects around falls.
6. **Future State:** Describe any future data linkage projects your state health department might be interested in exploring.

	Current State		Future State
Surveillance Measures/ Data Sources	**Linked to What Other Source**	**List Internal/ External Data Stewards Involved**	**Description of Data Linkage Project**
Deaths			
Emergency department visits			
Hospitalizations			
EMS calls and associated data			
Self-reported falls and fall injuries (BRFSS)			
Severe falls injuries (Trauma Registry)			
National Syndromic Surveillance Program			
Number of older adults screened, assessed, and/or given a falls prevention plan of care (STEADI Program Data)			
Cost data (Medicaid/Medicare)			
Social factors from County Health Rankings			
Social factors from Rural Population Health in the United States Chartbook			
Other			

7. **Current State:** Which of the following audiences do you routinely disseminate surveillance data to?
8. **Future State:** Which of the following audiences would your state health department want to involve in dissemination of surveillance data?

	Current State	Future State
Audience	**Yes/No**	**Yes/No**
Falls coalitions		
Policy-makers/decision-makers		
Funders		
General public		
Healthcare systems and/or healthcare providers		
Internal divisions within the health departments		
Performance improvement teams involved in health assessment/health improvement planning		
EMS		
Insurance Companies		
Pharmacists		
Other		

Equity

9. **Current State:** Which of the following equity practices within surveillance does your state health department currently use?
10. **Future State:** Which of the following equity practices within surveillance does your state health department want to begin?

	Current State	Future State
Equity Practice	**Yes/No**	**Yes/No**
Disaggregate data in analyses		
Provide transparency around data collection procedures		
Review existing data sources for inequities		
Partner with community-based organizations and/or community members to understand local context		
Increase race and ethnicity completeness in data sources		
Advocate for consistent and informed categorization of tribal nations		
Opt in to using optional BRFSS modules to capture sexual orientation and gender identity information		

Resources

11. **Current State:** What are the current resources available within the state health department for surveillance activities?
12. **Future State:** What are the resources that may need to be garnered to achieve future surveillance activities?

	Current State	Future State
Resource		
Staffing		
Funding		
Data systems		
Software		
Other (list)		
Other (list)		

Falls Prevention Strategy: Clinical Prevention Programs

For each of the clinical prevention questions, indicate what your state health department currently knows about each in the CURRENT STATE column. Document future activities your state health department wants to focus on related to each activity in the FUTURE STATE column.

	Current State	Future State
Activity		
Which health systems (outpatient clinics, EDs, trauma centers, EMS, PT practices) in your state have the most need for falls prevention?		
What clinical prevention efforts focused on SCREEN exist in your state? Within what health systems?		
What clinical prevention efforts focused on ASSESS exist in your state? Within what health systems?		
What clinical prevention efforts focused on INTERVENE exist in your state? Within what health systems?		
What existing or potential champions are in these systems? What is their specific role (administrator, MD, RN, PT, OT)?		
What kind of medical record system do they use? Is it electronic? What is the vendor?		

Falls Prevention Strategy: Community Falls Prevention

For each of the community prevention questions, indicate what your state health department currently knows about each in the CURRENT STATE column. Document future activities your state health department wants to focus on related to each activity in the FUTURE STATE column.

	Current State	Future State
Activity		
What falls-focused screening efforts exist in our community (in non-clinical settings)?		
What evidence-based falls prevention interventions exist in our community (in non-clinical settings)?		
Where do interventions currently exist and for whom? Does this match our surveillance data?		
Where do community members go to find out about falls prevention interventions? Is there a centralized location (e.g., a resource hub)?		
What key relationships do we need to build or maintain to ensure our awareness of community-based falls prevention interventions?		

Falls Prevention Strategy: Community- Clinical Linkages

Current State: Is your state health department currently engaging in the activity/step listed? Are other partners currently engaged in the activity/step listed? If yes, list them.

Future State: Which of the following programmatic activities is your state health department planning on conducting in the future? What partners might your state health department engage with to conduct the activity?

		Current State		Future State	
Activity	**Steps/Specify**	**State Health Department Yes/No**	**Other Partners Yes/No List**	**State Health Department**	**Other Partners**
STEADI implementation (Screen-Assess-Refer)	Use data products to spread information and awareness about the benefits of STEADI				
	Share STEADI Resources				
	Outreach and training with providers				
	Use data to understand the opportunities for partnering with health systems				
	Find local champions				
	Embed STEADI algorithm in EHR				
	Ensure referral sources are in place in the community				
	Capture data on screening, assessment, and referral processes.				
Engaging community members in falls prevention					
Co-hosting community events					
Hosting community education activities					
Promoting increasing mobility in communities					

Continued

		Current State		Future State	
Activity	**Steps/Specify**	**State Health Department Yes/No**	**Other Partners Yes/No List**	**State Health Department**	**Other Partners**
Integration with other direct services	Blood pressure screenings				
	Brain health activities				
	Vision screenings				
	Hearing screenings				
	Music therapy				
	Community recreation				
	Medication reviews				
	Community health worker trainings				
Developing or assisting with the development and maintenance of a resource hub					

Equity

Current State: Which of the following equity practices within programmatic and educational interventions does your state health department currently use?

Future State: Which of the following equity practices within programmatic and educational interventions does your state want to begin?

	Current State	Future State
Equity Practice	**Yes/No**	**Yes/No**
Culturally tailor programs and educational materials		
Conduct outreach with communities and potential partners to ensure programs and educational materials are relevant and meaningful to program participants		
Use trusted messengers in program and educational interventions		
Consider the Reframing Aging Initiative resources and toolkit in creating programs and materials		

Resources

CURRENT STATE: What are the current resources available within the state health department for community-clinical linkage activities?

FUTURE STATE: What are the resources that may need to be garnered to achieve future community-clinical linkage activities?

	Current State	Future State
Resource		
Staffing		
Funding		
Data systems		
Software		
Other (list)		
Other (list)		

Falls Prevention Strategy: Strategic Planning and Evaluation

1. **Current State:** What strategic areas is the state health department working within to advance falls prevention?
2. **Future State:** What strategic areas is your state health department interested in exploring to advance falls prevention?

	Current State	Future State
Area/Activity	**Yes/No**	**Yes/No**
Community health needs assessments • Health department-led • Community-based organization-led • Health systems-led		
State health department strategic plan		
Sustainability planning		
Incorporation into healthy community design		
Embedding falls prevention within a life course approach		
Developing strategic communications for different sectors		
Developing, leading, or participating in prevention coalitions		
Evaluating falls prevention activities		

Equity

3. **Current State:** Which of the following equity practices within strategic planning and evaluation does your state health department currently use?
4. **Future State:** Which of the following equity practices within strategic planning and evaluation does your state health department want to use in the future?

	Current State	Future State
Equity Practice	**Yes/No**	**Yes/No**
Use disaggregated data to drive decisions about: • What activities get prioritized • What populations are prioritized • What geographic locations are prioritized		
Develop health equity metrics within falls prevention programs		
Engage communities and potential partners to understand what information is useful to them		
Work with communities to build evidence base for falls prevention		

Resources

5. **Current State:** What are the current resources available within the state health department for strategic planning and evaluation activities?
6. **Future State:** What are the resources that may need to be garnered to achieve future desired strategic planning and evaluation activities?

	Current State	Future State
Resource		
Staffing		
Funding		
Data systems		
Software		
Other (list)		
Other (list)		

Falls Prevention Partnerships

What current partnerships does your state health department maintain across the different falls prevention strategies addressed above? The following table provides a list of falls prevention strategies.

1. Which partners have you engaged within these strategies?
2. Note the partnership type from one of the seven categories of The Tamarack Community Institute's Collaboration Spectrum:
   i. Compete: Competition for resources exists between agencies
   ii. Coexist: No connection between agencies
   iii. Communicate: Inter-organization information sharing
   iv. Cooperate: As needed, informal interaction on a discrete project
   v. Coordinate: Organizations Systematically align work with each other and share accountability for outcomes
   vi. Collaborate: Longer-term interactions based on shared missions, goals and shared decision making
   vii. Integrate: Fully integrated programs, planning and funding
3. In the future partnership planning section, note whether you plan to engage partners within these strategies in the future.

Falls Prevention Strategy	Additional Specificity	List Current Partners	Partnership Type	Future Partnership Planning
Surveillance				
Data use agreements				
Data analyses				
Data dissemination use cases:	Promote the issue			
	Identify solutions/ highlight areas of need			
	Build connections to engage in prevention activities			
	Raise awareness of falls as a health and economic issue			
	Report on grant requirements			
	Inform community planning			
	Motivate engagement by sharing information on disproportionate falls impact			

Continued

Falls Prevention Strategy	Additional Specificity	List Current Partners	Partnership Type	Future Partnership Planning
Community-Clinical Linkages				
STEADI Implementation (Screen-Assess-Refer)	Use data products to spread information and awareness about the benefits of STEADI			
	Share STEADI resources			
	Outreach and training with providers			
	Use data to understand the opportunities for partnering with health systems			
	Find local champions			
	Embed STEADI algorithm in EHR			
	Ensure referral sources are in place in the community			
	Capture data on the screening, assessment, and referral process			
Engaging community members in falls prevention				
Co-hosting community events				
Community education activities				
Promoting increasing mobility in communities				
Integrating with other direct services	Blood pressure screenings			
	Brain health activities			
	Vision screenings			
	Hearing screenings			
	Music therapy			
	Community recreation			
	Medication reviews			
	Community health Worker trainings			
Developing or assisting with the development and maintenance of a resource hub				

Continued

Falls Prevention Strategy	Additional Specificity	List Current Partners	Partnership Type	Future Partnership Planning
Strategic Planning and Evaluation				
Community health needs assessments				
State health department strategic plan				
Sustainability planning				
Incorporation into health communities by design				
Embedding falls prevention within a life course approach				
Developing strategic communications for different sectors				
Developing, leading, or participating in prevention coalitions				
Evaluation				

APPENDIX 3: STEADI Mapping Tool

Tasks, Instruments and Partners Involved by Community-Clinical Linkage Element (Screen, Assess, Intervene)

			Who Can Do This	
Element	**Description of Task**	**Example Instruments (If applicable)**	**Clinical**	**Community**
Screen	Screen older adult for falls risk using a validated tool	• Stay Independent • 3 Key Questions • Falls Free Check up	Healthcare professional	• Older adult • caregiver • Community worker
Assess: check gait and balance	Check older adult for gait/ balance strength abnormalities	• TUG • Chair Stand • 4 Stage Balance Test	• Physician • Nurse • Medical assistant • Physical therapist	
Assess: review medications	Review medications to see which increase falls risk	• SAFE framework • Beers criteria • STRATIFY Risk Assessment Tool • Falls Risk Checklist	• Physician • Pharmacist	Community-level pharmacist
Assess: Manage medication	Review medications and work with the patient to decide what to reduce, switch, or stop.	• Medications Linked to Falls • SAFE Medication Review Framework	• Pharmacist • Physician	Community Pharmacist
Assess: Assess and treat foot pain	• Assess and treat any foot pain. Identify and correct underlying biomechanical and gait abnormalities. • Refer individual to exercise programs. • Provide foot health and footwear advice.	No specific instrument	Podiatrist	
Assess: Eye examination	Provide routine, comprehensive eye examination, which can diagnose vision-threatening conditions that may increase falls risk.	No specific instrument	Eye doctor	

Continued

Element	Description of Task	Example Instruments (If applicable)	Who Can Do This	
			Clinical	Community
Intervene: make a referral	• Refer to interventions that address risk factors. • Discuss falls prevention strategies with patients and caregivers, including evidence-based interventions.	• Falls Referral Form • Recommended Programs Form	• Physician • Nurse practitioner • Physician assistant • Clinical nurse specialist	
Intervene: implement physical therapy	Evaluate the older adult to determine specific issues and prescribe exercises/ movements to address. This may include referral to a community-based exercise program such as Tai Chi.	• TUG • Chair Stand • 4 Stage Balance	Physical therapist	Community-based exercise program leader
Intervene: perform home assessment	• Assess home and older adult's use of the home to identify hazards and needed modifications. • Educate patients about home trip hazards (e.g., throw rugs, stairs). • Recommend falls prevention safety features (e.g., grab bars, lighting, railings).	• Check for Safety	Occupational therapist	
Intervene: Make home modifications	Make needed adjustments to home	No specific instrument		• Contractors • Handymen
Intervene: Implement an evidence-based falls programs	Implement evidence-based falls program	• Falls Referral Form • Recommended Programs Form	• Occupational therapist • Physical therapist	Evidence-based falls programs instructors

APPENDIX 4: Planning Questions Tool

Key Questions by Strategy to Inform Community-Clinical Linkage Work

Strategy	Key Questions to Inform Community-Clinical Linkages	Response
Surveillance	What areas within our state have a high falls burden (e.g., high rate of falls-related deaths, emergency department visits, hospitalizations)?	
	What populations within those areas are disproportionately affected by falls?	
	What is the projected population of older adults expected to be in the next 5, 10, and 15+ years?	
	Which partners can help access, collect, and/or share information?	
	Which data products would be most useful to advance our falls prevention work?	
Community	Which evidence-based falls prevention interventions exist in our community?	
	Where do interventions currently exist and for whom? Does this match our surveillance data?	
	Where do community members go to find out about falls prevention interventions? Is there a centralized location (e.g., a resource hub)?	
	What key relationships do we need to build or maintain to ensure our awareness of community-based falls prevention interventions?	
	Are we connected with our state falls prevention coalition?	
	What is the current capacity of evidence-based falls prevention programs in the community?	
Clinical	Which health systems and clinics are located in areas of our community with disproportionately high rates of falls?	
	What other clinical entities exist that could incorporate falls prevention (e.g., EMS, physical therapy practices)?	
	What are these health systems doing for older adult falls prevention?	
	What existing infrastructure does the health system and/or clinic have to support a screening, assessment, and referral process?	
	What supports (academic detailing, notification of community resources, EHR modification) will the health system need that our state health department can facilitate?	
	What key relationships do we need to build or maintain to build and maintain screening, referral, and assessment processes?	
	What is the current capacity of evidence-based falls prevention programs in the community to take in referrals?	
	How will screening, assessment, and referral processes impact the enrollment of community programs?	
	What data feedback loops need to be created between community and clinical linkages to ensure the system is working as intended?	

Continued

Strategy	Key Questions to Inform Community-Clinical Linkages	Response
Community-Clinical Linkages	What mechanisms are in place to inform healthcare providers of community falls prevention resources for their older adult patients?	
	What resources on community falls prevention are available for healthcare provider use?	
	Describe any systems in place for community falls prevention to inform healthcare providers of their older adult patients' participation?	
Strategic Planning and Evaluation	Which aspects of community-clinical linkages need to be prioritized in our health department's strategic plan?	
	What components of community-clinical linkages can be aligned with partners' strategic plans?	
	How can we engage community members in our strategic planning process?	
	What data do we need to inform our strategic planning efforts?	
	What evaluation data currently exists?	
	How will we evaluate our strategic priorities?	

Successes

1. What falls prevention strategy areas (surveillance, community-clinical linkages, strategic planning, and evaluation) are you doing well in?

2. What partnerships are you proud of?

3. What communication strategies are working well?

4. What are some ways you have worked toward health equity in falls prevention?

Opportunities

1. What opportunities does your state health department have within the falls prevention strategy areas (surveillance, community-clinical linkages, and strategic planning and evaluation)?

2. What opportunities does your state health department have to develop new partnerships? To expand existing partnerships?

3. What opportunities does your state health department have to develop new communication strategies to enhance surveillance, community-clinical linkages, and/or strategic planning and evaluation?

4. What opportunities does your state health department have to incorporate principles of equity into your work?

5. What opportunities does your state health department have to leverage strengths and existing resources to be more strategic in falls prevention initiatives?