

A C P M

Community-Clinical Linkages to Promote Brain Health



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This toolkit is designed for preventive medicine physicians and other healthcare professionals to implement and inform their practice around improving brain health within health systems. This toolkit provides a simple step-by-step guide with illustrative examples to assist preventive medicine physicians and related partners to educate patients on Alzheimer's disease and related dementias (ADRD), reduce risk factors related to dementia, and improve the brain health and cognitive functions of populations by leveraging community-clinical linkages (CCLs).

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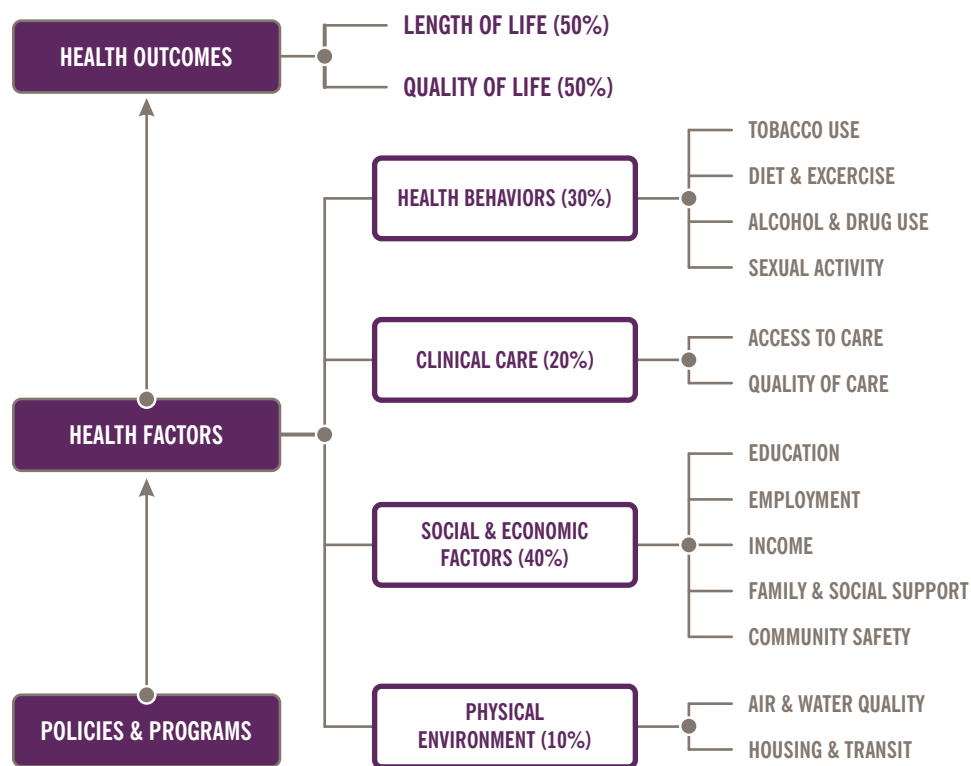
Understanding Brain Health & Dementia



Dementia is a multifaceted syndrome characterized by cognitive decline, memory loss, and impaired daily functioning, which not only significantly compromises the quality of life for those affected, but also places an immense strain on healthcare systems and society at large. Alzheimer's disease is the most common cause of dementia. As of 2024, there are an estimated 6.9 million Americans aged 65 years and older living with Alzheimer's disease, which costs the U.S. economy an estimated \$360 billion in direct care services.¹ By 2050, the number of Americans living with Alzheimer's is expected to reach 12.7 million, bringing the total cost to nearly \$1 trillion in 2050.¹

A growing body of research has identified modifiable risk factors for Alzheimer's disease and related dementias (ADRD) including hypertension, hearing impairment, smoking, obesity, depression, physical inactivity, diabetes, social isolation, alcohol consumption, traumatic brain injury, and air pollution.² These risk factors are not distributed equally in the population, with increased prevalence among Hispanics/Latinos and African Americans, which results in a disproportionate prevalence of ADRD among these populations.³ While access to quality healthcare services is essential for people with ADRD to learn about modifying risk factors, community-based resources, programs, and interventions also play a critical role in helping influence approximately 80% of health outcomes through addressing social determinants such as education, socioeconomic status, environment, and lifestyle factors [Figure 1].⁴

Figure 1: County Health Rankings' model of health that explores the measures that influence health outcomes⁴



Learning About Community-Clinical Linkages (CCLs)



CCLs are collaborative efforts that connect healthcare systems (clinical settings) with community-based organizations to improve health outcomes by facilitating education, reducing stigma, providing support, and increasing access to non-medical interventions. The CDC describes five ways these linkages can occur:

- 1 Networking (sharing of information)
- 2 Coordinating (modifying processes to improve access to services)
- 3 Cooperating (sharing resources)
- 4 Collaborating (enhancing each other's capacity)
- 5 Merging (full integration to operate as one entity)

The selection of the intensity of the linkage will vary according to the goals and objectives defined and the availability of resources and support.⁵

General Caveats and Considerations of CCLs

The community and clinical sectors must establish a bidirectional feedback structure that facilitates communication between organizations in each sector, enabling efficient patient referrals and health-related information exchanges. However, it is crucial to adhere to state and federal privacy laws, such as the Health Insurance Portability and Accountability Act (HIPAA), ensuring patient information remains confidential and referrals are done with the patient's approval.

When looking into how the CCLs can help improve a community's health, it is important to consider health fairness and crucial for patients to know who can see their data and why. Here are some areas to consider:

1

People living in households with differing immigration statuses may decline help because of the fear of complicating their own or their family's immigration process.

2

People with social security or other support like housing and food assistance might be worried about losing benefits if they receive services.

3

Out of pocket cost for services. Resources only being available through self-pay or eligibility requirements (e.g. Medicare/Medicaid).

Disproportionately affected communities often face increased difficulty in receiving healthcare services in a timely manner. These hurdles include lack of insurance, higher healthcare costs, personal beliefs about health risks, availability of information in their language, immigration status, past experiences of being treated unfairly, not trusting the healthcare system, and transportation to healthcare locations. Understanding how common these issues are in each health system and community helps to ensure all care is respectful of different cultures and more accessible overall.⁶

Blueprint for Community-Clinical Linkages (CCLs) for Brain Health at the Population Level



ASSESS

- 1 Identify the risk factors in a clinical population using one or more of the following data sources:
 - Screening tests or questionnaires (e.g. PHQ-2)
 - ICD-9 or ICD-10 codes
 - CPT Codes
 - Medication usage
- 2 Characterize target groups, challenges, and opportunities.
- 3 Identify and engage critical collaborators within the health system & community.

- Combine models that incorporate multiple sources of information to enhance accuracy in identifying cases.⁷
- Categorize the data according to categories such as urban/rural, race, ethnicity, payor/insurance, and define the burden of the disease and potential health disparities.⁸
- Involve healthcare professionals from your system and collaborate with public health agencies, patient groups, community organizations, advocacy groups, and faith-based organizations.



PLAN

- 4 Define the goals and objectives of the linkage.
 - What will the linkage achieve (e.g., reduce loss to follow-up)?
 - Define who, what, when, where, how.
 - Define the short and long term goals.

- Identify key personnel at each organization to streamline communication and allocate resources effectively.
- Develop a formal agreement outlining shared objectives, timelines, and each entity's commitment to the linkage.
- Seek legal counsel to ensure state and federal law compliance.



DO

- 5 Deploy the intervention and grow the linkage with sustainability in mind.

- Ensure adequate resources, including funding, staff, and electronic health records, while using performance monitoring to make necessary adjustments.



EVALUATE

- 6 Evaluate the linkage and refine the processes. Obtain and implement feedback from patients referred to community programs.

- Define the timeline for evaluation and set up a time to share the results with all the partners.

Case Study: Example of the Use of the Blueprint CCLs to Address Depression



Problem:

Dr. Y is the “Sacred Heart” hospital’s population health specialist. Over the last 3 months, he has heard that their outpatient mental health support programs are not accepting new patients. Current wait times are over 6 months. One of the social workers in the clinic mentioned that there is a support group at a local church, but they don’t know how to refer patients there. How can “Sacred Heart” help patients address their needs using available community resources?

ASSESS

Identify the population. (How many people were newly diagnosed in the last 6 months, and how many have been seen by outpatient mental health?)

First, Dr. Y seeks to estimate the prevalence of depression among their patient population. To do this, they opt to query their EHR using the following methods:

- Positive screening in tests such as the Patient Health Questionnaire (PHQ-2 or PHQ-9).⁹
- ICD diagnosis codes for patient identification (ICD-9: 296.2, 296.3, 296.5, 300.4, 301.12, 309.0, 309.1, 311; ICD-10: F20.4, F31.3 - F31.5, F31.x, F33.x, F34.1, F41.2, F43.2).⁷

Characterize target groups, needs, challenges, barriers, and opportunities. (What are the patients doing while they wait for outpatient mental health? Is it different according to insurance?)

Dr. Y notices that patients who live in Suburbia, one of the suburbs, are not participating in these support programs, and they have had a higher number of hospitalizations because of complications of their chronic conditions.

Dr. Y set up a couple of meetings with their patient advisory group, to learn more of the problem. They learned that patients usually call the local community center to sign up, but they need a referral from their doctor, that requires a new appointment and usually takes 2-3 months. Dr. Y. also learned that patients from Suburbia don’t participate in local community center programs because the group is close to rush hour, and they don’t want to spend so much time in traffic.

Identify and engage critical collaborators within the health system, public health agencies, and the community.

Dr. Y decided that he would start by addressing the issues of patients living in Suburbia. He invited representatives from the public health department, some advocates from National Alliance on Mental Illness (NAMI), the leadership of two churches, and some therapists who work in private practice. He learned that the school of social work is partnering with a local school to do some support groups, so he also invited those involved.



PLAN

Define the goals and objectives of the linkage.

Dr. Y facilitated the meetings; attendees said they have programs similar to those available at “Sacred Heart”. However, they usually do not have patients from Sacred Heart. The therapists in Suburbia have the bandwidth to see new patients, but because they are out of the Sacred Heart network, they do not have the infrastructure to receive electronic referrals. The group decided it would work on developing a referral process that would allow for more people in Suburbia to receive services closer to home.

Dr. Y meets with his team to see how the referral process would work since the organizations are not part of the hospital system. He met with social workers, lawyers, IT, and medical directors. Several barriers were identified during those meetings and he addressed them in them in the following ways:

- Created patient education materials with the resources at the community locations, including contact information and a short script that patients could use when contacting organizations themselves.
- Consulted with their Privacy Advisor about a way to share information outside of electronic medical records. It was agreed that at the time of the appointments, patients should sign a HIPAA release form for the medical team to handle the referral, and this would be faxed to organizations only if the patient requested that the organizations call them directly.
- Legal Affairs also recommended setting up an official memorandum of understanding to ensure that the referrals were not related to kickbacks or payments and that each organization would collect payment (if necessary) directly from the patient or their insurance.

DO

Deploy the linkage and grow it with sustainability in mind.

The referral process was implemented in one clinic. Social workers and medical assistants participated in short training sessions during lunch, where they learned about the resources available and the importance of those services. Additionally, they were instructed on completing the forms and referral process via fax and how to follow up with patients to ensure the instructions were clear.

Once a month, Dr. Y reconvened all the partners to see if they were getting the referrals, and comparing the numbers that they received. Two months after the implementation, it was noticed that patients with insurance X were not using the services because they were told that they would need to pay. Dr. Y’s team consulted with the benefits and insurance company and were able to ensure the services were fully covered, which increased the number of patients seen. The insurance X patients were contacted again to reassure them that they would be fully covered.

EVALUATE

Evaluate the linkage and refine the processes.

Dr. Y analyzed the population health data every six months to assess the outcomes of the linkage. He observed that wait times at outpatient services decreased due to reduced demand. Additionally, patients in Suburbia began utilizing the services, leading to their hospitalization rates aligning with those of the patients living in other locations. Dr. Y started to work on other linkages to help other patients.

Dementia Risk Factors



Dementia Risk Factors that Could be Addressed by CCLs



Risk factors at different stages of life can increase the chances of developing dementia. By addressing these factors, about 40% of dementia cases might be prevented or delayed.² Tackling inequalities and addressing risk factors in low- and middle-income populations is vital to curb rising dementia rates.

1. Diabetes Mellitus (DM):

Contributes to 1% of the dementia cases in the population.²

- ▶ The CDC National Diabetes Prevention Program (DPP) has been validated at YMCA centers with non-medical providers to provide evidence-based lifestyle change programs and prevent type 2 diabetes. https://www.cdc.gov/diabetes-prevention/?CDC_AAref_Val=https://www.cdc.gov/diabetes/prevention/index.html
- ▶ The use of Community Health Workers (CHWs) is cost-effective to improve glycemic control (HbA1c, fasting blood glucose [FBG]) and weight-related outcomes, and reduced rates of progression to type 2 diabetes.¹⁰
- ▶ Diabetes Self-Management Education and Support (DSMES) is an evidence-based program for patients diagnosed with diabetes who are looking for tools to manage the disease. <https://www.cdc.gov/diabetes-toolkit/php/about-dsmes/index.html>

2. Hypertension (HTN):

Contributes to 2% of the dementia cases in the population and increases the relative risk by 1.6, leading to faster cognitive decline.² Community programs offer workshops on nutrition, exercise, stress management, and medication adherence, fostering support and reducing isolation.

Interventions using community lay leaders, like in barbershops, can also improve adherence to antihypertensive management in black neighborhoods, complementing initiatives led by CHWs, community pharmacists, and wellness programs.^{11,12}

- ▶ WISEWOMAN (Well-Integrated Screening and Evaluation for Women Across the Nation) is a CDC program that serves low-income, uninsured, and underinsured women ages 40 to 64 years with heart disease and stroke risk factors. The program provides screening and services that promote healthy behaviors to reduce the risk for heart disease and stroke. <https://www.cdc.gov/diabetes-toolkit/php/about-dsmes/index.html>
- ▶ The BP Connect Toolkit is designed to connect patients in a specialty visit back to primary care for timely follow-up of HTN. <https://www.hipxchange.org/BPConnect>
- ▶ The National Hypertension Control Initiative is an evidence-based, community-driven effort to reduce HTN by increasing awareness, counseling and providing self-monitoring devices to communities. <https://nhci.heart.org/>

Dementia Risk Factors



3. Obesity:

Contributes to 1% of the dementia cases in the population.² The following evidence-based interventions are common among community-based programs delivered by lay personnel or a combination of trained providers:

- ▶ Digital health aids for adolescents who are overweight or obese.¹³
- ▶ Worksite programs.¹⁴
- ▶ Technology-supported multicomponent coaching or counseling interventions to reduce and maintain weight loss.¹⁵

4. Smoking:

Contributes to 5% of late-life dementia in the population.² The Ask-Advise-Connect approach is an evidence-based strategy to increase the utilization of national free smoking quit lines.¹⁶ It is understood the physician has limited time to “ask and advise” for smoking risk screening. Therefore, the use of auxiliary clinical staff is effective for initial screening and connecting the smoker via a triage before the physician portion of the visit.¹⁷

- ▶ AAFP’s Ask and Act Tobacco Cessation Program: <https://www.aafp.org/family-physician/patient-care/care-resources/tobacco-and-nicotine/ask-act.html>
- ▶ SAMHSA National Helpline: <https://www.samhsa.gov/find-help/national-helpline>
- ▶ Smokefree app and plan line: <https://smokefree.gov/>
- ▶ Resources for individuals, families, parents, caregivers, teens, community members and practitioners at SAMHSA on Tobacco, E-cigarettes, and Vaping: <https://www.samhsa.gov/find-help/atod/resources-events>
- ▶ QuitConnect:¹⁷ Protocol to be implemented at healthcare settings to connect patients who are identified as smokers to a quit line so that they have a greater chance of succeeding at quitting smoking. <https://www.hipxchange.org/QuitConnect>

5. Physical Inactivity:

Contributes to approximately 2% of dementia cases.² The following community-based initiatives have been shown to reduce this risk factor:

- ▶ Faith, Activity, and Nutrition (FAN)¹⁸ is a faith-based program that promotes physical activity and healthy eating habits in a supported environment. <https://ebccp.cancercontrol.cancer.gov/programDetails.do?programId=10977999>
- ▶ SAMHSA faith-based and community initiatives (FBCI): These programs promote partnership and best practices to improve mental health services, substance use prevention and addiction treatment at the national, state, and local levels. <https://www.samhsa.gov/faith-based-initiatives>
- ▶ YMCA programming: <https://www.ymca.org/what-we-do/healthy-living>

6. Social Isolation:

Categorized as social participation and loneliness, contributes to 4% of modifiable dementia risk factors.² Leveraging Exercise to Age in Place (LEAP) demonstrates the efficacy of community-based physical activity programs like Tai Chi for reducing loneliness¹⁹ and internet workshop classes.²⁰ The National Academy of Sciences, suggests interventions like health navigators, home-base visitation programs, and lifestyle interventions.²¹

- ▶ Socially Connected Communities solutions²² <https://healthyplacesbydesign.org/socially-connected-communities-solutions-for-social-isolation/>

Dementia Risk Factors



7. Hearing Loss:

Leads to cognitive load and reduced mental engagement, or may cause social isolation, impacting cognitive stimulation. Studies estimate that hearing loss contributes to about 8% of dementia cases, amounting to approximately 800,000 cases yearly.² Studies also suggest that using hearing aids might mitigate cognitive decline linked to hearing impairment.^{2,23}

8. Traumatic Brain Injury (TBI):

Encompasses various brain injuries like concussion and severe head trauma, often associated with increased dementia and Alzheimer's disease risks.

- ▶ The US military has studied a model to care for patients with TBIs that was delivered by an interdisciplinary, co-located team including behavioral health, case management, neurology or psychiatry, nursing, occupational therapy, physical therapy, recreation therapy, speech-language pathology, and transition support. Findings showed improvement at program discharge and during the year post-discharge.²⁴
- ▶ Current community-based interventions should focus on symptom improvement early in the development of TBI. In addition, injury prevention programs, as well as improved protective equipment, can help to reduce the incidence of TBI.

9. Alcohol:

Approximately 0.8% of dementia cases worldwide can be attributed to excessive alcohol consumption, which is defined as more than 21 units of alcohol per week (1 unit of alcohol is equivalent to 10 mL or 8 g pure alcohol).² Examples of community resources include:

- ▶ Support groups.
- ▶ Behavioral interventions (e.g. those based on motivational interviewing).²⁵
- ▶ Substance abuse programs.²⁶

10. Depression:

This can be a risk factor or one of the early symptoms of dementia, resulting in the need for early assessment and management. Collaborative care with community-based treatment is effective and cost-efficient in improving depression symptoms, adherence to treatment, response to treatment, and remission and recovery from depression.²⁷ Examples of interventions that have been shown to work include:

- ▶ Support groups.²⁸
- ▶ Peer support programs.
- ▶ Case management/navigation programs.
- ▶ Social programs that support comprehensive solutions to assist individuals in addressing social needs.²⁹



Glossary (From CDC's Healthy Brain Initiative)³⁰



Brain Health is a concept that involves making the most of the brain's capacity and helping to reduce some risks that occur with aging. Brain health refers to the ability to draw on the strengths of the brain to remember, learn, play, concentrate, understand and maintain a clear, active mind.

Cognitive functioning encompasses various mental activities such as learning, intuition, judgment, language, and memory.

Cognitive health is achieved when these functions are operating effectively, optimizing the brain's capacities for memory, learning, play, focus, and maintaining an alert, active mind.

Dementia is a broad term referring to a specific set of symptoms, encompassing challenges with memory, language, and abilities significant enough to disrupt daily functioning. Alzheimer's disease stands as the primary contributor to dementia cases. Additional causes encompass vascular contributions to cognitive impairment and dementia (VCID), Lewy body dementia (LBD), frontotemporal dementia (FTD), Parkinson's disease, hippocampal sclerosis, mixed etiology dementias (MED), and various other rare diseases, disorders, and conditions leading to dementia.

Mild Cognitive Impairment (MCI) is a medical condition characterized by an initial phase of memory loss or other forms of cognitive decline (such as language or visual/spatial perception) in individuals who retain the capability to independently carry out most daily activities. MCI exists within the spectrum of cognitive deterioration; it may stem from brain disorders as well as hormonal or nutritional imbalances.

Risk reduction, also known as primary prevention, aims to intervene before the onset of health consequences by implementing measures such as modifying health-risk behaviors (e.g., unhealthy eating habits or tobacco use) and prohibiting substances linked to diseases or health conditions. Modifiable risk factors encompass lifestyle choices and behaviors that can either decrease or heighten an individual's likelihood of developing a disease.

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