ISSUE BRIEF

APRIL 2023

NCIOM

Malnutrition & Older Adults in North Carolina

INTRODUCTION

By 2028, 1 in 5 North Carolinians will be over the age of 65. Among these older adults, fifteen percent will not have reliable access to enough nutritious food on a regular basis.[1,2] Nutritional deficiencies result in more than $140 million in annual costs related to disease-associated malnutrition among people over 65 in North Carolina.[1] These costs accumulate from factors such as falls, complications from diabetes, and heart failure.[3,4]

Despite the social and economic burden from older adult malnutrition that adversely affects the state, it is not often discussed as a key health indicator for this population.[5] Key health indicators are characteristics of a population that can be used to describe its overall health, such as oral health, mental health, and life expectancy.[6] Data for key health indicators are usually well-collected, allowing for the tracking and mitigation of related issues. However, data on malnutrition in older adults are not currently reliably collected.[5]

Malnutrition in older adults is currently being addressed in a multitude of ways across North Carolina. Many programs attempt to lessen the negative effects of malnutrition on both the older adult and the health care system, including those focused on meal delivery programs, grocery vouchers, and improved oral health. There are also opportunities to improve access to these programs and resources. Additional funding for programs that provide nutritious meals and use of standardized screenings are among the tools that can prevent nutrition-related illnesses. This brief will describe the current state of malnutrition among older adults in North Carolina, what is currently being done to address it, and additional potential action to address this growing problem.

AGING FOOD INSECURITY IN NORTH CAROLINA

- Ranked **8th** in the US for population 65+[1]
- By 2028, **1 in 5** North Carolinians will be 65+[1]
- By 2040, **90 of 100 counties** in North Carolina will have more people aged 60 and older than under 18 years old[1]
- In 2019, **7.5%** of 60+ in North Carolina were food insecure[1]
- In the past 12 months, approximately **15%** of adults 60 and older in North Carolina were food insecure[7]

MALNUTRITION AS A CONDITION

While the terms are sometimes used interchangeably, hunger and malnutrition are not the same. Hunger is weakness or discomfort from a lack of food, while malnutrition is a lack of balance in nutrients, such as protein, vitamins, and minerals from food. Malnutrition can be a result of food insecurity—when access to food is limited, uncertain, or inconsistent—or a result of reduced intake of nutritious food for other reasons.[8] Being malnourished results in a deficiency in nutrients that leads to adverse effects on mental and physical health.[7,9–11]

Older adults suffering from malnutrition can be either underweight or overweight since calories consumed do not necessarily reflect the intake of important nutrients.[8] Simply eating more food will not prevent malnutrition; it is the quality of calories consumed, not quantity, that matters.[8] Many people who cannot afford healthy food options rely on less-expensive options that tend to be calorie-dense but nutrient-poor, leading to simultaneous health issues from both lack of nutrients and overeating. Older adults who suffer from malnutrition are 50% more likely to develop diabetes, three times more likely to suffer from depression, and 60% more likely to have congestive heart failure or a heart attack.[12]

As we age, our daily intake of food can decrease by up to 30% due to a combination of several factors. A reduction in appetite that can come with aging has been termed the "anorexia of aging" and is a common risk factor for malnutrition.[11] In addition, our metabolism slows down as we age, leaving us full longer. Our sense of smell and taste are diminished, which can reduce interest in food.[10,11,13,14] The effect of these changes can be addressed by ensuring older adults have access to foods that are not only nutritious but have been tailored to taste and are more appealing. Social engagement while eating has also proven to increase appetite.[15] In addition, polypharmacy—the taking of multiple prescription drugs per day—is often linked to malabsorption of micronutrients, which can lead to malnutrition.[14]

Malnutrition can also result from a variety of factors that extend beyond the physical changes in older adult bodies. For example, the physical environment plays a key role. The presence of grocery stores, the variety of food available, and the cost of food are all important factors that can serve as a pathway to malnutrition.[16] Older adults with a disability are twice as likely to suffer from food insecurity than those living without a disability. Living with a disability often leads to higher medical costs, which in turn leads to a reduced income for groceries. It can also make traveling to grocery stores and meal preparation more difficult.

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ORAL HEALTH

Poor oral health can also contribute to malnutrition. A diet poor in nutritional foods likely contains more sugars, which can increase the chances of tooth decay.[17]

In 2019, 21% of North Carolina older adults had lost all of their teeth.[18]

Chewing and swallowing problems, which affect approximately 15%-22% of the older adult population, can be caused by health conditions or medications.[11,19] Challenges with the ability to chew can lead to a five-fold increase in the likelihood of becoming malnourished.[10] Common medications often cause dry mouth, which slows down the production of saliva, affecting the ability to break down nutrients and impacting the experience of eating.[20]

DETECTION

Although malnutrition is associated with earlier death and higher cost of care, nutritional imbalance in older adults is often undetected.[5] It is often assumed that being underweight is a key factor in malnutrition.[21] One commonly used malnutrition assessment—measurement of body mass index (BMI)—is limited in its scope to estimating body fat percentage without factoring in nutritional intake.[11] A more reliable instrument for measuring or assessing malnutrition in older adults is the commonly used Malnutrition Universal Screening Tool (MUST).[10] The MUST assessment considers height and weight, unplanned weight loss, and effects of acute disease, and contains guidelines to help develop a care plan. Unlike other measurement tools, MUST can also be used without height or weight.[10,22]

DISPARITIES AMONG POPULATIONS

Not all older adults are affected by malnutrition equally. Black and Hispanic older adults are twice as likely to suffer from food insecurity.[7,23] Black older adults are also more likely to experience negative health outcomes associated with malnutrition, such as high blood pressure and diabetes.[24] Among Black populations, the most prevalent nutritional risks included low levels of fruit and vegetable intake, as well as reporting fewer than two meals a day.[25] Economic factors, such as fewer financial resources, are also a contributor; according to the Federal Reserve Board, the median wealth of Black families in 2019 was less than 15% of that of White families (approximately $24,100 versus $188,200).[26] Other determinants include limited access to grocery stores and fresh produce, which disproportionately affects Black and Hispanic communities.[27] In Hispanic populations, food insecurity aligns closely with unemployment rates, which leads to lower incomes. For households with undocumented residents, additional barriers include the inaccessibility of programs designed to improve nutrition.[26]

HEALTH CARE COSTS RELATED TO MALNUTRITION

Malnutrition in older adults leads to worse health outcomes and higher costs for medical care. Those who are malnourished have three times as many hospital admissions, have longer hospital stays, and see their primary care physician twice as often as those who are well-nourished.[28] Medicaid pays for a large share of hospital stays involving undernourishment while Medicare paid a disproportionate share for other types of malnutrition-related hospital stays, such as those related to protein-calorie malnutrition.[7,29]

HOW NORTH CAROLINA ADDRESSES OLDER ADULT NUTRITION

CONGREGATE MEALS

According to the North Carolina Division of Aging and Adult Services, nutrition services are meant to maintain and improve the health of older adults by providing nutritionally balanced meals at least five days a week through home-delivered or congregate meal settings. In 2018–2019, more than 4.5 million meals were served, costing roughly $28 million.[30]

Congregate meals are healthy meals served to older adults in group settings, such as senior centers. These meals are available to those who are 60 and older and offer one-third of the recommended daily dietary allowance. There is no income requirement to participate in congregate meals. In 2020, more than 23,000 older adults were served through congregate meals.[31]

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The nutrition and social interaction provided by these meals can help older adults continue living in their homes longer. One congregate meal costs an average of $8.85, while one day in a nursing home costs $240. Costs to Medicaid for long-term care, then, could potentially be reduced by earlier interventions with nutrition rather than treatment of health and social conditions resulting from malnutrition.[31]

MEALS ON WHEELS

Meals on Wheels is a nonprofit statewide program that helps to ensure that all older adults have access to high-quality meals. In 2021, more than 41,000 participants were served by North Carolina Meals on Wheels by volunteer drivers who deliver meals to participants' homes.

The cost of serving Meals on Wheels to older adults is about $1,400 per person annually, which is less than the average cost of one day in a hospital.

Home-delivered meals were shown to promote well-being through meeting nutritional needs of older adults, increased socialization through check-ins at meal drop-offs, decreased chronic health conditions, and decreased hospital visits.[32,33] Meals on Wheels has initiated partnerships with insurance companies, hospitals, and health systems in hopes of training volunteers to detect and report changes in health status, reducing avoidable emergency room visits.[34]

FEDERAL PROGRAMS

The Commodity Supplemental Food Program (CSFP) works with low-income older adults, supplying a monthly food package that is designed to help meet the nutritional needs of those 60 and older.[35] In this federally funded program, the USDA purchases food and makes it available to the North Carolina Department of Agriculture and Consumer Services, which then stores and distributes the food.[36] Facilitated through the Food Bank of Central and Eastern North Carolina, CSFP has set eligibility at or below 130% of the federal poverty income guidelines. CSFP served nearly 12,000 older adults in North Carolina in 2021.

The Supplemental Nutrition Assistance Program (SNAP) is a federal program that provides benefits to increase the food budget of households in need so they can afford healthier food options. In North Carolina, this program is referred to as Food and Nutrition Services (FNS). FNS allotments had been temporarily increased due to the pandemic, though this emergency measure ended March 1, 2023. As of October 1, 2022, a cost-of-living adjustment was made to increase the maximum benefit in a one-person household from $250 to $281 per month.[37] *See the text box on the next page for more information.*

SUPPLEMENTAL NUTRITION ASSISTANCE PROGRAM (SNAP)/FOOD AND NUTRITION SERVICES (FNS) IN NORTH CAROLINA

- Serves all 100 counties in North Carolina
- Over 296,000 North Carolinians aged 55 and older were enrolled in FNS as of February 2022
- The FNS monthly allotment is determined based on income and number of people in the household[38]
- The maximum benefit per month for a one-person household is $281,[38] and the minimum is $23[39]
- The average low-income meal costs less than $3 so the minimum FNS benefit can purchase an average of 7 meals[40]
- The end of pandemic emergency allotments will see the average FNS benefit drop from around $8.12 per day to $5.45[41] (and from roughly $243.60 per month to $163.50)
- In 2021, almost 10,000 businesses across the state participated in the FNS program, accounting for more than $2 billion in FNS funds from customers[42]
- Individuals may apply for FNS benefits online, in person at a local county Department of Social Services office, or through by mail through a county Division of Social Services office

BenefitsCheckUp is an online tool intended to assist individuals with applying for and receiving food and other benefits. BenefitsCheckUp includes access to online benefits counselors who help older adults apply for benefits, as well as a hotline for those more comfortable receiving help over the phone. Older adults on Medicaid or below 200% of the federal poverty guideline qualify for the Affordable Connectivity Program, which provides a discount of up to $30 per month toward internet service through companies such as Comcast, Spectrum, and AT&T.[43,44] Those without internet access can contact their state Medicaid office for assistance with eligibility and application.[45]

STATE FOOD ASSISTANCE PROGRAMS

Another resource is the North Carolina Seniors Farmers' Market Nutrition Program (SFMNP), which provides vouchers for low-income older adults to use at local farmers' markets. As of June 2022, there were more than 50 farmers' markets participating across the state. This program, offered through the North Carolina Department of Agriculture's Food and Nutrition Services program, dually supports agriculture and healthy eating. Older adults who have household incomes of less than 185% of the federal poverty level qualify for the program. The benefit can serve individuals or a household and range from $20 to $50 per month. In 2020, there were more than 3,200 participants in the program.

In 2020, there were more than 3,200 participants in the Senior Farmers' Market Nutrition Program.

This is a separate program from FNS benefits, but the vouchers can be combined with FNS benefits to stretch a household's food budget.[46]

PRODUCE PRESCRIPTIONS

Produce prescriptions, aimed at providing better access to fresh produce, are another source of nutrition for low-income older adults. These programs, which feature health care providers prescribing fresh produce as a needed health care service, have been shown to increase fruit and vegetable consumption and improve blood pressure.[47] One such program is RP Rx, which is managed by Reinvestment Partners in Durham. The program initially worked with Food Lion to provide produce for the program's prescriptions, and now includes additional grocery retailers, where recipients can receive up to $40 per month credited to their store-based member card or prepaid debit card to use for WIC-approved fruits and vegetables.[48] Healthy Helping, a fruit and vegetable incentive program implemented early in the COVID-19 pandemic for FNS users, was designed to encourage spending on fruit, vegetables, and legumes. Healthy Helping found that participating FNS beneficiaries doubled their purchases of fruits and vegetables with the assistance of the funds provided through the program.[49]

FOOD BANKS AND PANTRIES

Older adults are also able to access nutrition resources through food banks and food pantries across North Carolina. Food banks are nonprofit organizations that collect food to distribute to those who are food insecure, often through food pantries. Food pantries distribute the food, working through supplies from the food banks as well as donations. Food pantries have been found effective in improving diet and diet-related outcomes by increasing fruit and vegetable intake among participants.[50] In addition, this food assistance enables many seniors access to more produce than they can typically afford.[51]

Slight modifications in food bank program design, such as conducting senior-only days, facilitating home delivery, and updating content to reflect seniors' dietary needs, have been proven successful in helping older adults overcome challenges with their food budget and access to healthier foods.[51] While not all resources are available through the state – leaving some rural areas with fewer services – there are programs available to supplement these disparities. For example, the Rural Delivery Program based in Albemarle works with 100 partners across 14 counties in northeastern North Carolina and offers solutions such as mobile food pantries that cover more than 6,000 square miles.[52]

PROGRAM QUALIFICATIONS

Programs funded through the US Department of Agriculture (USDA) are means-tested; this means that they require individuals to meet certain standards, such as income thresholds, to be eligible for services. However, Health and Human Services (HHS) programs are not means-tested, and all who are 60+ years of age are allowed to participate. *See below for examples of each.*

MEANS-TESTED PROGRAMS[53]	PROGRAMS AVAILABLE TO ALL 60+[54]
• SNAP/FNS benefits	• Home-delivered meals
• Commodity Supplemental Food Program	• Congregate meals
• Senior Farmers' Market Nutrition Program	• Food pantries

POLICY OPPORTUNITIES

INCREASING AND MAINTAINING ENROLLMENT IN FOOD AND NUTRITION SERVICES (FNS)

In North Carolina, only around 34% of older adults who are FNS-eligible participate

Some older adults cited a confusing application process, stigma associated with receiving services, and being uncomfortable with the technology used to apply online.[55] Outreach efforts vary based on many factors within the older adult population, such as whether individuals are homebound or have live-in children and/or grandchildren. Other states have attempted to address this issue in different ways; in New York, for example, programs have worked to help those who are eligible to enroll volunteers to help people apply for benefits through written materials and verbal interactions. Volunteers might encourage an older adult to request a phone interview instead of traveling to a local Department of Social Services office. Providing older adults with branded promotional materials and toll-free numbers as well as informational websites has also proven successful in increasing applications from eligible individuals.[57] Partnering with other programs, such as adult day care programs or Meals on Wheels programs that already serve as successful and trusted partners, has also shown to increase participation.[57] Another approach, used in Minnesota's SNAP Rural Outreach, aimed to help decrease the stigma associated with using SNAP benefits. This program engaged older adults with nutrition education and connected them with peers to learn about the benefits of SNAP enrollment.[51]

Traditionally, people enrolled in the FNS program must prove their eligibility through an annual recertification process. While the initial application for the program can be done online, recertification must be completed via a paper application that can be filled out in person or mailed in.[57] To reduce the number of people who lose enrollment through this process—not because of change in eligibility, but because of challenges completing paperwork—other modes of recertification (e.g., phone and internet) or longer recertification periods can be implemented.[57] In order to alleviate financial burdens on households and administrative burdens on agencies that are caused by households exiting and re-entering services within the span of several months, known as "churn," programs have identified a longer recertification period as a useful strategy.[58] The FNS program in North Carolina has approved a three-year recertification period, but due to a staff capacity issue, the increased recertification period may not be implemented until Fall 2023.

It is likely that extended recertification periods could raise participation among older adults who may view the reapplication process as difficult to complete. Targeted outreach to older adults may also motivate those currently unsure of their eligibility in the program to enroll.[59]

Possible Actions for Change

- **Accelerate implementation of extended recertification periods for FNS**
- **Increase targeted outreach for older adults to encourage enrollment in FNS**

INCREASING IMPLEMENTATION OF PRODUCE PRESCRIPTION PROGRAMS

Coupled with FNS and SFMNP, produce prescription programs provide additional food security. The National Produce Prescription Collaborative recommends providing a produce prescription benefit within Medicaid as well as funding federal research examining the impact of these prescriptions.[60] Currently, North Carolina is one of four states that use a Medicaid Demonstration Waiver to cover services like produce prescriptions that are not typically covered under federal regulation.[47,61] Increasing grants for programs such as that administered by Reinvestment Partners in Durham will allow for a larger fresh food budget for older adults. For now, the targeted beneficiaries of the Reinvestment Partners grants are determined by the donating organization or individual. Designating older adults as targeted beneficiaries of these services may increase awareness of the programs and improve utilization.

Possible Actions for Change

- **Increase grants for produce prescription programs**

INCREASING SCREENING FOR MALNUTRITION IN HEALTH CARE SETTINGS

Screening and early intervention are the first steps necessary in the treatment of health conditions caused by malnutrition, such as those marked by a loss in muscle mass and strength. Earlier evaluation and treatment of malnutrition can have a positive effect on clinical outcomes, such as an improvement in physical function and a reduced hospital stay.[62] Malnutrition screenings should take place prior to surgery, which is not currently standard practice, as well as when a change in condition (such as a hospitalization) occurs.[63] The Joint Commission[A] requires hospitals to screen for malnutrition within 24 hours of admission, but there are no guidelines for what type of health care professional conducts the screening, which may affect the efficacy of the questioning as well as what actions are taken if an older adult is found to be at risk. Linking programs with NCCARE360, a coordinated network to connect those in need with community resources, can also allow health care providers to assist patients who are identified as at risk for malnutrition. Improving connections to available resources may help standardize malnutrition screening. Existing barriers to screening include a lack of time for the physician and inadequate nutrition knowledge due to lack of training for nurses. A standardized screening tool, coupled with expanded nurse training across hospital settings, may help create consistency in evaluation of malnutrition.[64,65]

Possible Actions for Change

- **Standardize malnutrition screenings in hospital settings**
- **Ensure health care staff are adequately trained on the screening tool and what results mean**
- **Increase connections to community services for older adults experiencing food insecurity and malnutrition**

[A] Founded in 1951 by doctors and hospitals, The Joint Commission (formerly Joint Commission on Accreditation of Healthcare Organizations or JCAHO) evaluates and accredits health care organizations in the U.S., including hospitals, health plans, and other care organizations that provide home care, mental health care, laboratory, ambulatory care, and long-term services." – North Carolina Healthcare Association, https://www.ncha.org/glossary/the-joint-commission/

INCREASING KNOWLEDGE AND ACCESS TO ORAL HEALTH CARE

In 2020, The American Dental Association urged development of policies at the federal, state, and local level to improve oral health care for older adults. Further, they advocated for Medicaid legislation that would cover oral health services, increase Medicaid reimbursement rates, and enable dental offices to offer membership plans to support oral healthcare for older adults.[66] North Carolina has a robust Medicaid coverage program that includes oral health services; however, access to oral health care and receipt of services have been negatively affected by the limited number of oral health providers that treat Medicaid beneficiaries. This is partially due to Medicaid reimbursement rates that are much lower than standard private insurance rates. In 2020, North Carolina reimbursement rates were 57.5% of the private insurance reimbursement. Other states, such as Maryland, had a 77.2% reimbursement rate.[67] Increased reimbursement rates may help to increase the number of providers who will work with older adults enrolled in Medicaid. There are some Medicaid-enrolled older adults who are not aware that dental services are included in their coverage; increasing awareness of this coverage may help to improve use of those services. It is also worth noting that Medicare does not cover any dental care, including preventive procedures such as cleanings and fillings.[68] Some Medicare Advantage programs (Medicare Part C) offer routine dental service coverage for procedures such as oral exams, cleanings, and restorative services through private, Medicare-approved insurance companies. However, as of 2019, 47% of Medicare beneficiaries did not have dental coverage.[69]

Possible Actions for Change

- **Increase Medicaid reimbursement for dental services**
- **Raise awareness of dental services available through Medicaid**
- **Standardize recommended dental services for older adults**

There are many North Carolina oral health groups, such as the North Carolina Oral Health Collaborative, which aims to reduce barriers to oral health care through better access to care and increased coordination between the medical and oral health communities.[70] BlueCross BlueShield of North Carolina aims to extend access to affordable oral health services through partnerships and the development of safety net access points to support communities with low access to oral health services.[71] The North Carolina Department of Health and Human Services Oral Health Improvement Plan includes the goal of incorporating oral hygiene programs in residential facilities.[72] Access Dental Care is a nonprofit mobile provider that serves older adults and other vulnerable populations. This program offers services in 33 counties, providing care such as cleanings, extractions, fillings, and treatment for gum disease.[73] New Hanover County Health and Human Services Senior Resource Center began a program in July 2022 to offer oral health care for low-income older adults 55+ who do not have dental insurance.[74]

Standardization of a set of recommended services and frequency of those services may also lead to improved oral health among older adults.[75]

CONCLUSION

Through increased funding and standardization of programming, North Carolina can decrease rates of older adult malnutrition. While there are some policies that could be addressed at health system and federal levels, changes at the state and local level have the potential to make long-lasting impacts. Left unchecked, it is unlikely the upward trend of malnutrition will slow down as the population of older adults increases.

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