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MEMORANDUM March 8, 2017

To: The Honorable Bill Pascrell Jr.
Attention: Ben J. Rich

From: Agata Dabrowska, Analyst, 7-9455

Subject: **Malnutrition in Older Adults**

This memorandum responds to your request for information on malnutrition in older adults, specifically (1) an overview of the problem (e.g., prevalence, impact on health care outcomes, patient function), (2) barriers to malnutrition care, (3) an example of an evidence-based care model for malnutrition prevention and intervention, as well as attempts to integrate malnutrition care quality measures, based on these evidence-based best practices, into quality programs in Medicare. This memo focuses on malnutrition in the clinical rather than community setting; however, the appendix does include a table of federally-funded, community-based programs that provide food and nutrition assistance for which older adults may be eligible.

Information in this memorandum is of general interest to Congress. As such, this information may be provided by CRS to other congressional requesters, and may be published in CRS products for general distribution to Congress at a later date. In any case, your confidentiality as a requester would be preserved.

Overview of Malnutrition

Malnutrition, often used synonymously with undernutrition, is defined as a nutrition imbalance that can affect both overweight and underweight patients. Lack of adequate calories, protein, or other nutrients needed for tissue maintenance and repair can result in malnutrition.[1] In 2012, the Academy of Nutrition and Dietetics (formerly known as the American Dietetic Association) and the American Society for Parenteral and Enteral Nutrition issued a consensus statement, recommending a standardized set of characteristics to be used to identify and document adult malnutrition status; specifically, the identification of two or more of the following characteristics was recommended for a malnutrition diagnosis: insufficient energy (calorie) intake, weight loss, loss of muscle mass, loss of subcutaneous fat, localized or generalized fluid accumulation that may mask weight loss, and diminished functional status.[2]

[1] S Rinehart, J Folliard, & M Raimondi, "Building a Connection between Senior Hunger and Health Outcomes," *Journal of the Academy of Nutrition and Dietetics*, (2016), vol. 116, no. 5, pp. 759-763.

[2] JW White, P Guenter, & P Jenson et al. "Consensus statement of the Academy of Nutrition and Dietetics/ American Society for Parenteral and Enteral Nutrition: Characteristics recommended for the identification and documentation of adult malnutrition (undernutrition)," *Journal of the Academy of Nutrition and Dietetics*, (2012), vol. 112, no. 6, pp. 730-738.

Normative physiologic changes associated with aging impact nutritional status. Gastrointestinal problems, changes in sense of taste, polypharmacy (use of multiple medications), decreased appetite, and food insecurity[3] can all lead to decreased food intake and malnutrition among older adults.[4] One study found that 20% of hospitalized patients age 65 and older had an average nutrient intake of less than 50% of their calculated maintenance calorie requirements (i.e., the calories needed to maintain one's weight).[5]

It is estimated that malnutrition affects 35% to 50% of older residents in long term care facilities[6] and as many as 60% of hospitalized older adult patients in the United States,[7] although it is important to note that these numbers are estimates, and they vary by study and methodology.

Malnutrition is associated with increased morbidity and mortality, decreased function and quality of life, increased risk of falls, increased frequency and length of hospital stays, and higher healthcare costs.[8] Malnutrition in older adults can also lead to increased infections, pressure ulcers, imbalance in electrolytes, altered skin integrity, and weakness and fatigue.[9] One frequently cited study reported that the annual cost of disease-associated malnutrition (DAM) in older adults in the United States is $51.3 billion.[10] While 13%-14% of the U.S. population is 65 years and older, 33% of the total burden from DAM is borne by this population.[11]

Barriers to Malnutrition Care

Despite evidence demonstrating the importance of adequate nutrition in the health care setting and the role of nutrition in improved health status and outcomes, variation and gaps exist with respect to the provision of malnutrition care, specifically nutrition screening, assessment, intervention, monitoring, and overall care for older adults who are malnourished or at-risk for malnourishment.[12]

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[3] The Department of Agriculture defines food insecurity as "the limited or uncertain availability of nutritionally adequate and safe foods or limited or uncertain ability to acquire acceptable foods in socially acceptable ways." Limited access to nutritionally adequate food among older adults can contribute to malnutrition. See https://www.ers.usda.gov/topics/food-nutrition-assistance/food-security-in-the-us/measurement/#insecurity.

[4] S Rinehart, J Folliard, & M Raimondi, "Building a Connection between Senior Hunger and Health Outcomes," *Journal of the Academy of Nutrition and Dietetics*, (2016), vol. 116, no. 5, pp. 759-763.

[5] Academy of Nutrition and Dietetics, "Malnutrition Measures Specification Manual- Version 1.0—October 2016," see http://www.eatrightpro.org/~/media/eatrightpro%20files/practice/quality%20management/quality%20improvement/malnutritionmeasuresspecificationmanual.ashx.

[6] National Resource Center on Nutrition, Physical Activity & Aging, Florida International University, "Malnutrition and Older Adults," accessed February 23, 2017, http://nutrition.fiu.edu/aging_network/malfact2.asp.

[7] A Sauer, et al., "Nurses needed: Identifying malnutrition in hospitalized older adults," *NursingPlus Open*, (2016), vol. 2, pp. 21-25.

[8] Academy of Nutrition and Dietetics, "Malnutrition Measures Specification Manual- Version 1.0—October 2016," see http://www.eatrightpro.org/~/media/eatrightpro%20files/practice/quality%20management/quality%20improvement/malnutritionmeasuresspecificationmanual.ashx.

[9] Position of the American Dietetic Association, American Society for Nutrition, and Society for Nutrition Education: Food and Nutrition Programs for Community-Residing Older Adults, *Journal of the American Dietetic Association*, (2010), vol. 110, pp. 463-472.

[10] JT Snider et al., "Economic Burden of Community-based Disease-Associated Malnutrition in the United States," *Journal of the Parenteral and Enteral Nutrition*, (2014), vol. 38, supp. 2, pp. 77S-85S. This study defined DAM to occur when "the severity or persistence of an inflammatory response in an individual results in the loss of lean body mass and/or functional impairment." This study tracked DAM for eight diseases: breast cancer, chronic obstructive pulmonary disease (COPD), colorectal cancer, coronary heart disease, dementia, depression, musculoskeletal disorders, and stroke.

[11] Ibid.

[12] Academy of Nutrition and Dietetics, "Malnutrition Measures Specification Manual- Version 1.0—October 2016," see http://www.eatrightpro.org/~/media/eatrightpro%20files/practice/quality%20management/quality%20improvement/malnutrition

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Nutrition screening is the recommended first step in malnutrition care, and screening triggers a *nutrition assessment* for those patients determined to be at-risk. However, stakeholders have identified inadequate malnutrition screening as a key barrier to malnutrition care. Lack of malnutrition screening affects whether dietitians conduct nutrition assessments since without screening, many at-risk patients go unidentified. The Academy of Nutrition and Dietetics reports that the prevalence of adult malnutrition ranges from 15% to 60% depending on the patient population and identification criteria. The health consulting firm Avalere Health reported that up to 60% of patients are malnourished upon admission to the hospital, yet just 7% are diagnosed with malnutrition.[13] Another study showed that only 3.2% of all U.S. hospital discharges in 2010 had a documented malnutrition diagnosis, and that those patients were more likely to be older.[14] Avalere Health attributes the gap between estimated malnutrition prevalence and malnutrition diagnosis to several factors, including lack of provider awareness of patients' nutrition status, as well as how malnutrition information is tracked and communicated in the hospital medical record system.[15] One national survey of hospital-based professionals found that just 36.7% reported completing nutrition screening upon patient admission; of those who completed nutrition screening, 50.8% reported doing so within 24 hours, and 69% reported documenting the results in the patient medical record.[16] In addition, estimates of malnutrition prevalence rates vary based on study methodology (e.g., which screening or assessment tools were used), and actual malnutrition diagnosis rates in hospitals using ICD codes[17] are not fully captured and are inconsistent with prevalence estimates.[18] Use of non-validated screening tools and the lack of recognition of malnutrition risk in overweight and obese patients may also contribute to low malnutrition diagnosis rates.[19]

The Alliance to Advance Patient Nutrition ("Alliance"), "an interdisciplinary consortium dedicated to championing effective patient nutrition practices" was launched in 2013 to highlight the costs of malnutrition in the hospital setting and to emphasize the importance of patient nutrition. The Alliance was founded by the Academy of Medical-Surgical Nurses, the Academy of Nutrition and Dietetics, the Society of Hospital Medicine, and Abbott Nutrition.[20] In a 2013 paper, the Alliance recommended that to effectively manage malnutrition, nutrition interventions should, among other things, involve collaboration

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[13] Avalere, "New Malnutrition Quality Measures will Lead to High Quality, Lower-Cost Care," published September 29, 2016, http://avalere.com/expertise/life-sciences/insights/new-malnutrition-quality-measures-will-lead-to-higher-quality-lower-cost-ca.

[14] Corkins et al., "Malnutrition diagnoses in hospitalized patients: United States, 2010," *Journal of Parenteral Nutrition*, (2014), Vol. 38, No. 2, pp. 186-195.

[15] Avalere, "New Malnutrition Quality Measures will Lead to High Quality, Lower-Cost Care," published September 29, 2016, http://avalere.com/expertise/life-sciences/insights/new-malnutrition-quality-measures-will-lead-to-higher-quality-lower-cost-ca.

[16] Academy of Nutrition and Dietetics, "Malnutrition Measures Specification Manual- Version 1.0—October 2016," see http://www.eatrightpro.org/~/media/eatrightpro%20files/practice/quality%20management/quality%20improvement/malnutrition measuresspecificationmanual.ashx

[17] ICD is the international standard for reporting diseases and health conditions, and the diagnostic classification standard for all clinical and research purposes. See http://www.who.int/classifications/icd/en/.

[18] A Sauer, et al., "Nurses needed: Identifying malnutrition in hospitalized older adults," *NursingPlus Open*, (2016), vol. 2, pp. 21-25.

[19] Ibid.

[20] In a statement of potential conflict of interest, Abbott Nutrition disclosed that it has provided funding to the member organizations of the Alliance. In addition, Abbott Nutrition "has been developing and marketing science-based nutritional products to support the growth, health and wellness of people of all ages for more than 85 years," see http://malnutrition.com/alliance/abbottnutrition.

across clinical disciplines (e.g., physicians, nurses, registered dietitians). The Alliance identified six key barriers impacting the provision of nutrition care in the hospital setting:[21]

1. Inadequate screening for malnutrition: it is estimated that at least one-third of hospitalized patients (estimates vary) being admitted are malnourished, yet a majority of those patients are inadequately screened or not screened for malnutrition at all.
2. Inadequate staffing: the responsibility of nutrition care often belongs to registered dietitians; however, many institutions lack adequate dietitian staffing to address all patients.
3. Delay of nutrition care: nutrition care is often delayed due to a variety of factors (e.g., patient's medical status, lack of diet order). One study from Johns Hopkins reported that the average time between hospital admission and a nutrition consultation was five days.[22]
4. Exclusion of nurses: nurses are rarely included in nutrition care yet they provide and oversee most of the patient care, including observing dietary intake.
5. Physician sign-off: in many health care settings, physicians are required to sign off on implementation of a nutrition care plan. One study reported that dietitian recommendations are implemented in only 42% of cases.[23]
6. Inadequate patient support: some patients have difficulty consuming meals without some type of assistance, contributing to more than half of hospitalized patients not finishing their meals.

Evidence-based Care Model

Following the identification of these barriers to provision of malnutrition care, the Alliance recommended an evidence-based nutrition care model to remediate malnutrition in hospitals to improve patient care and reduce hospital costs. The model (see **Figure 1**) focuses on six key principles deemed as "essential elements of optimal patient nutrition care:" (1) creating an institutional culture where all stakeholders (i.e., hospital administrators, physicians, nurses, and dietitians) value nutrition; (2) redefining clinicians' roles for including nutrition care; (3) recognizing and diagnosing all malnourished patients and those at-risk (e.g., nurses screening every hospitalized patient for malnutrition); (4) rapidly implementing comprehensive nutrition intervention and continued monitoring (e.g., physicians supporting the policy that provides automated nutrition intervention within 24 hours in patients identified as "at-risk" during the nutrition screen, while awaiting nutrition assessment, diagnosis, and care plan); (5) communicating nutrition care plans (e.g., nurses incorporating nutrition discussions into handoff care and nursing care plans); and (6) developing a comprehensive discharge nutrition care and education plan (e.g., dietitians providing patients, family members, and caregivers with nutrition education and a comprehensive post-hospitalization nutrition care plan).[24]

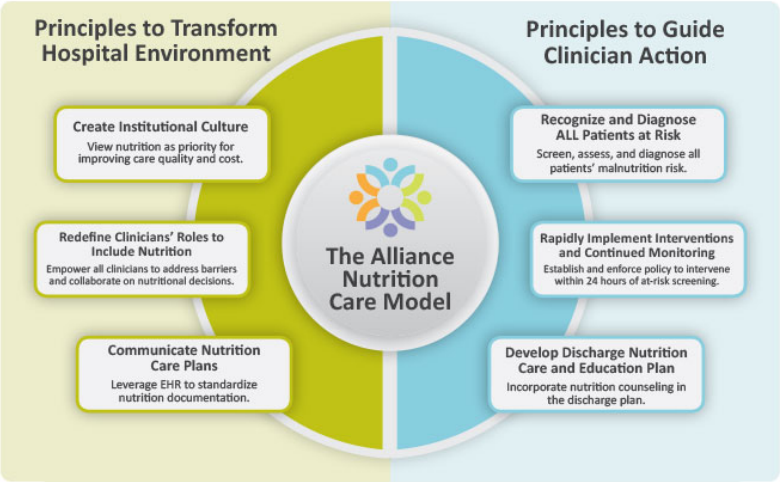
[21] Critical Role of Nutrition in Improving Quality of Care: An Interdisciplinary Call to Action to Address Adult Hospital Malnutrition," *Journal of the Academy of Nutrition and Dietetics*, (2013), vol. 113, pp. 1219-1237.

[22] M Somanchi, X Tao, G Mullin, "The facilitated early enteral and dietary management effectiveness trial in hospitalized patients with malnutrition," *Journal of Parenteral and Enteral Nutrition*, (2011), vol. 35, no. 2, pp. 209-216, as cited by A Sauer, et al., "Nurses needed: Identifying malnutrition in hospitalized older adults," *NursingPlus Open*, (2016), vol. 2, pp. 21-25.

[23] A Skipper et al, "Physicians' implementation of dietitians' recommendations: A study of the effectiveness of dietitians," *Journal of the American Dietetic Association*, (1994), vol. 94, no. 1, pp. 45-49, as cited by "Critical Role of Nutrition in Improving Quality of Care: An Interdisciplinary Call to Action to Address Adult Hospital Malnutrition," *Journal of the Academy of Nutrition and Dietetics*, (2013), vol. 113, pp. 1219-1237.

[24] Tappenden et al., "Critical Role of Nutrition in Improving Quality of Care: An Interdisciplinary Call to Action to Address Adult Hospital Malnutrition," *Journal of the Academy of Nutrition and Dietetics*, (2013), vol. 113, pp. 1219-1237.

Figure 1. Alliance Nutrition Care Model and Toolkit



Source: Alliance to Advance Patient Nutrition, "Alliance nutrition care model and toolkit," see http://malnutrition.com/getinvolved/hospitalnutritiontoolkit, and Tappenden et al., "Critical Role of Nutrition in Improving Quality of Care: An Interdisciplinary Call to Action to Address Adult Hospital Malnutrition," *Journal of the Academy of Nutrition and Dietetics*, (2013), vol. 113, pp. 1219-1237.

In 2013, the Academy of Nutrition and Dietetics and Avalere Health partnered to create the Malnutrition Quality Improvement Initiative (MQii), in collaboration with other stakeholders, to "advance evidence-based, high-quality, patient-driven care for hospitalized older adults who are malnourished or at-risk for malnutrition."[25] The MQii is based on findings from literature reviews, stakeholder engagement, and best practices research. The MQii objectives are to: "(1) improve effectiveness and timeliness of malnutrition care; (2) advance adoption of malnutrition electronic clinical quality measures (eCQMs) 'that matter;' and (3) support availability of tools (e.g., screening tools) that can be integrated into electronic health record (EHR) systems."[26]

To achieve the first of these objectives, the MQii developed the MQii Toolkit, defined as "a guide for identifying and implementing clinical quality improvements for malnutrition care... designed to support changes among the care team's clinical knowledge and raise awareness of best practices for optimal nutrition care delivery." The Toolkit is rooted in principles of quality improvement and includes best practices for screening, assessing, diagnosing, and treating patients age 65 years and older, admitted to the hospital malnourished or at risk of malnutrition.[27] The MQii Toolkit was tested in 2016 over a three-month implementation period, demonstrating that "the introduction of recommended malnutrition quality improvement actions helps hospitals achieve performance goals in nutrition care."[28]

The Academy of Nutrition and Dietetics and Avalere Health also developed and tested a set of malnutrition eCQMs,[29] which were reviewed by the Measure Applications Partnership (MAP) at the National Quality Forum (NQF) in February of 2017 for recommendation for inclusion in rulemaking for

[25] Defeatmalnutrition.today, "MQii," see http://mqii.defeatmalnutrition.today/.

[26] Defeatmalnutrition.today, "About the MQii," see http://mqii.defeatmalnutrition.today/about-mqii.html.

[27] The MQii Toolkit, Introduction to the MQii Toolkit, see http://malnutrition.com/static/pdf/introduction-to-the-mqii-toolkit.pdf.

[28] Ibid.

[29] The four eCQMs are: NQF #3087: Completion of a Malnutrition Screening within 24 hours of Admission; NQF #3088: Completion of a Nutrition Assessment for Patients Identified as At-Risk for Malnutrition within 24 hours of a Malnutrition Screening; NQF #3089: Nutrition Care Plan for Patients Identified as Malnourished after a Completed Nutrition Assessment; NQF #3090: Appropriate Documentation of a Malnutrition Diagnosis.

the Center for Medicare & Medicaid Services (CMS) Hospital Inpatient Quality Reporting (IQR) Program. MAP did not recommend the four malnutrition measures—submitted for consideration by Avalere and the Academy of Nutrition and Dietetics—for inclusion in the CMS Hospital IQR Program at this time; in addition, none of the four measures[30] received NQF endorsement through the NQF's Health and Wellbeing Project in 2016.[31] The measures were not endorsed at this time by NQF due to concerns about validity (and specifically, measure exclusions that would limit the denominator and decrease provider burden) and evidence supporting the links between the processes (e.g., documentation of diagnosis) and improved health outcomes.

With respect to inclusion in the Hospital IQR Program, MAP recommends the measures be refined and resubmitted to NQF prior to going through rulemaking, with the exception of the documentation measure, which MAP did not support for rulemaking because of the need to move away from documentation measures. MAP recommended that the developer consider combining the other three measures into a single composite measure to decrease reporting burden while still filling the malnutrition measure gap in the quality program. If the measures received NQF endorsement and were eventually included in the CMS Hospital IQR Program through the rulemaking process, the measures would be the first malnutrition measures—and the first malnutrition eCQMs—added to the IQR Program.[32]

[30] Only one of the four measures, #3089 Nutrition Care Plan for Patients Identified as Malnourished after a Completed Nutrition Assessment, was recommended by the Health and Well-Being Standing Committee for endorsement; it was not endorsed by the NQF's Consensus Standards Approval Committee (CSAC). Because it was recommended by the Health and Well-Being Standing Committee, it is the only measure of the four that is eligible for appeal. See National Quality Forum, Health and Well-Being 2015-2017 Voting Report, December 21, 2016, http://hwb_draft_report_for_voting(1).pdf.

[31] See NQF: Health and Well-Being Project 2015-2017, http://www.qualityforum.org/Health_and_Well-Being_2015-2017.aspx.

[32] For questions relating to quality measurement, contact Amanda Sarata, Specialist in Health Policy, 7-7641.

Appendix. Federal Nutrition Assistance Programs

There are several federally-funded, community-based programs that provide food and nutrition assistance for which older adults may be eligible. While these programs do not address malnutrition specifically, the services provided (e.g., home-delivered meals) may help to prevent malnutrition by reducing hunger and food insecurity among older adults. **Table A-1** provides a description of such nutrition programs, administered by the U.S. Department of Agriculture's Food and Nutrition Service (USDA-FNS), as well as by the Administration on Aging (AoA) within the U.S. Department of Health and Human Services' Administration for Community Living (HHS-ACL). Additional information about these and other domestic food assistance programs can be found in CRS Report R42353 *Domestic Food Assistance: Summary of Programs*.

Table A-1. Federal Food and Nutrition Assistance Programs for Older Adults

Program/ Authorizing Legislation	Description	Eligibility
U.S. Department of Health and Human Services- Administration for Community Living (HHS-ACL)		
Congregate Nutrition Program Older Americans Act, Title III, Part C, Subpart 1 (42 U.S.C. 3030e)	Provides meals to seniors in settings such as senior centers, schools, and adult day care centers, as well as social services; nutrition screening, assessment, and education; and counseling at meal sites.	Persons age 60 or older and their spouses of any age; persons under age 60 with disabilities who reside in housing occupied by seniors where meals are served; persons with disabilities who reside at home with, and accompany, seniors to meals; and volunteers.
Home Delivered Nutrition Program Older Americans Act, Title III, Part C, Subpart 2 (42 U.S.C. 3030f)	Provides meals to seniors who are homebound. Offered services include nutrition screening, assessment, counseling and education.	Persons age 60 or older and homebound and their spouses of any age; may be available to individuals who are under age 60 with disabilities if they reside at home with the homebound senior.
Grants to Native Americans: Supportive and Nutrition Services Older Americans Act, Title VI (42 U.S.C. 3057c)	Provides for the delivery of supportive and nutrition services comparable to services provided under Title III (i.e., congregate and home-delivered meals) to older Native Americans.	Persons age 60 or older who are American Indian, Alaskan Native, and Native Hawaiian.
Nutrition Services Incentive Program (NSIP) Older Americans Act, Title III, Part A, Section 311 (42 U.S.C. 3030a)	Provides funds to states, territories, and Indian Tribal Organizations to purchase food or to cover the costs of food commodities provided by USDA for the congregate and home-delivered nutrition programs. Funds are allotted to states and other entities based on each state's share of total meals served during the prior year. Most states choose to receive their share of funds in cash, rather than commodities.	Persons age 60 or older and their spouses of any age; persons under age 60 with disabilities who reside in housing occupied by seniors where meals are served; persons with disabilities who reside at home with, and accompany, seniors to meals; and volunteers.
U.S. Department of Agriculture- Food and Nutrition Service (USDA-FNS)		

Program/ Authorizing Legislation	Description	Eligibility
Supplemental Nutrition Assistance Program (SNAP) Food and Nutrition Act (7 U.S.C. 2011 et seq.)	Provides benefits (through the use of electronic benefit transfer cards) that supplement low-income recipients' food purchasing power. Benefits vary by household size, income, and expenses (like shelter and medical costs).	In general, eligible households must meet a gross income test (monthly cash income below 130% of the federal poverty guidelines), net income (monthly cash income subtracting SNAP deductible expenses at or below 100% of the federal poverty guidelines), (for FY2017) liquid assets under $2,250 (assets under $3,250 if elderly or disabled household members). However, households with elderly or disabled members do not have to meet the gross income test. Recipients of Temporary Assistance for Needy Families (TANF) cash assistance, Supplemental Security Income (SSI), or state-funded General Assistance are categorically eligible for SNAP. The state option of broad-based categorical eligibility also allows for the modification of some SNAP eligibility rules and has resulted in the vast majority of states not utilizing an asset test.
The Emergency Food Assistance Program (TEFAP) The Food and Nutrition Act, Section 27 and The Emergency Food Assistance Act, Section 204(a) (7 U.S.C. 2036 & 7508(a))	Provides food commodities (and cash support for distribution costs) through states to local emergency feeding organizations (e.g., food banks/pantries, soup kitchens) serving the low-income population.	States designate local emergency feeding organization recipients and establish income standards for individual eligibility.
Community Food Projects Food and Nutrition Act, Section 25 (7 U.S.C. 2034)	Competitive grants to nonprofit organizations for programs that improve access to locally produced food for low-income households.	Eligibility for grants will vary according to request for applications.
Commodity Supplemental Food Program (CSFP) Agriculture and Consumer Protection Act of 1973, Section 4(a) (7 U.S.C. 612c note)	Provides supplemental monthly food packages to primarily low-income elderly persons in projects located in, in FY2016, 47 States, the District of Columbia, and two Indian Tribal Organizations (ITOs).	Elderly persons (age 60+) who have access to a local CSFP project and household income below 130% of the federal poverty guidelines. (Prior to 2014, women, infants, and children with income below 185% of the federal poverty guidelines had been eligible for CSFP. P.L. 113-79 reauthorized the program as seniors-only; women, infants, and children may continue to participate only if they had been participating prior to implementation of this change.)
Seniors' Farmers Market Nutrition Program Food, Conservation, and Energy Act of 2008 (P.L. 110-246), Section 4231 (7 U.S.C. 3007)	Provides grants to participating states to offer vouchers/coupons to low-income seniors that may be used in farmers' markets, roadside stands, and other approved venues to purchase fresh produce.	Income eligibility criteria are established by states.

Program/ Authorizing Legislation	Description	Eligibility
Child and Adult Care Food Program (CACFP) Russell National School Lunch Act, Section 17 (42 U.S.C. 1766))	Provides cash subsidies to participating child care centers, family day care homes, after-school programs, and non-residential adult-care centers for the meals and snacks they serve to children, the elderly, and chronically disabled persons.	For adult services: elderly (age 60+) or chronically disabled persons attending participating non-residential adult-care centers. Both for-profit and nonprofit centers are eligible to participate. Adults are eligible for free or reduced meals based on income guidelines that are the same as in school meals programs.

Source: The information in this table has been adapted from CRS Report R42353 *Domestic Food Assistance: Summary of Programs*, and the paper "Position of the American Dietetic Association, American Society for Nutrition, and Society for Nutrition Education: Food and Nutrition Programs for Community-Residing Older Adults," *Journal of the American Dietetic Association*, (2010), vol. 110, pp. 463-472.