

The Nutrition Services Program Outcomes Evaluation: Effects on Participants' Health Care Utilization

National Evaluation Results Webinar
The National Resource Center on Nutrition and Aging

October 30, 2018

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AoA Nutrition Programs Evaluation Objectives

1. Process study

- Provide information to support program planning
- Analyze program structure, administration, staffing, coordination, processes, and service delivery

2. Cost study

- Estimate the average costs of congregate and home-delivered meals
- Assess variation in costs by selected characteristics of local providers

3. Outcomes evaluation

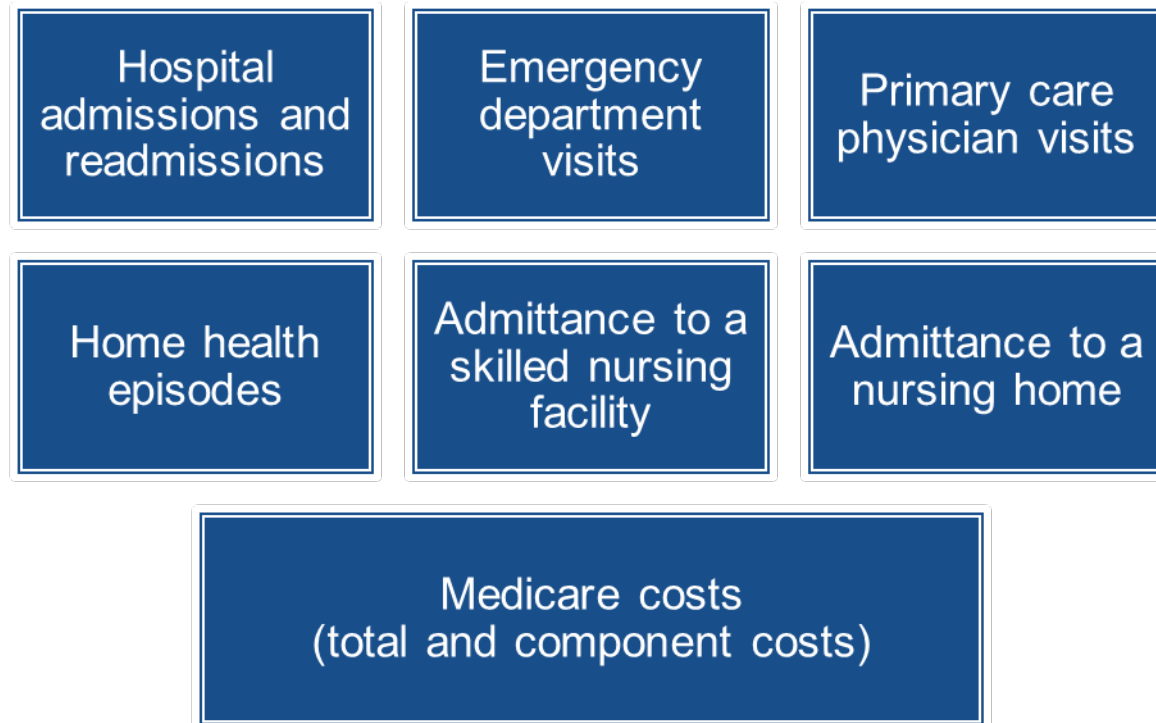
- Assess program effectiveness in improving food security, socialization, and diet quality
- Assess program effectiveness in improving longer-term health and delaying or avoiding institutionalization

Objectives of the Outcomes Evaluation (First Report, 2017)

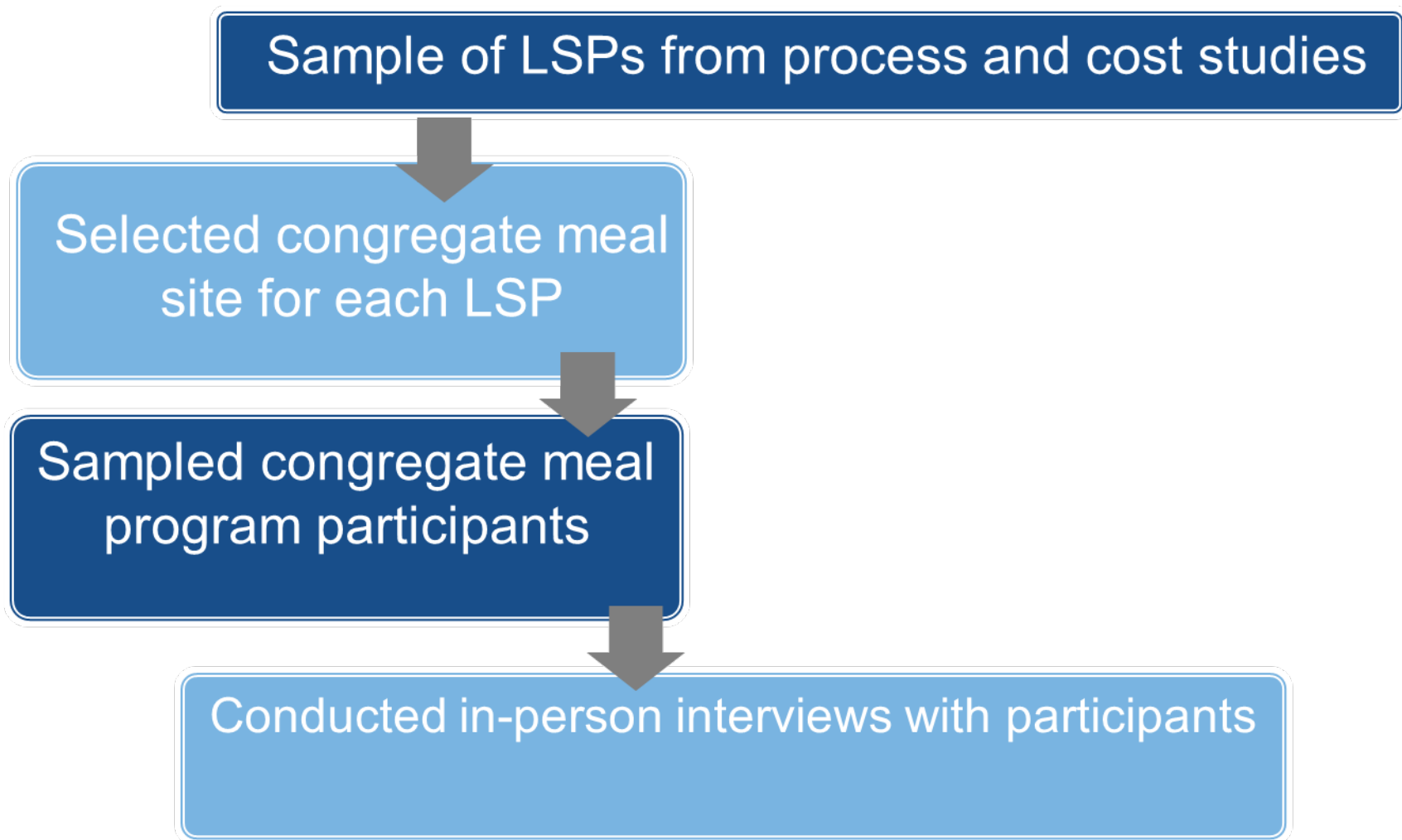
- 1. Describe participants' demographic and household characteristics, health status, mobility, eating behaviors, diet quality, food security, and socialization**
- 2. Describe participants' experiences with and impressions of the program and their valuation of meals and supportive services received through the program**
- 3. Determine the impact of meals and related services on participants' nutrition, food security, and diet quality**
- 4. Determine the impact of meals and nutrition services on overall wellness and well-being**

Objectives of the Outcomes Evaluation (Second Report, 2018)

1. Describe participants' health care utilization and behavior characteristics
2. Estimate effect of participation on health care utilization outcomes

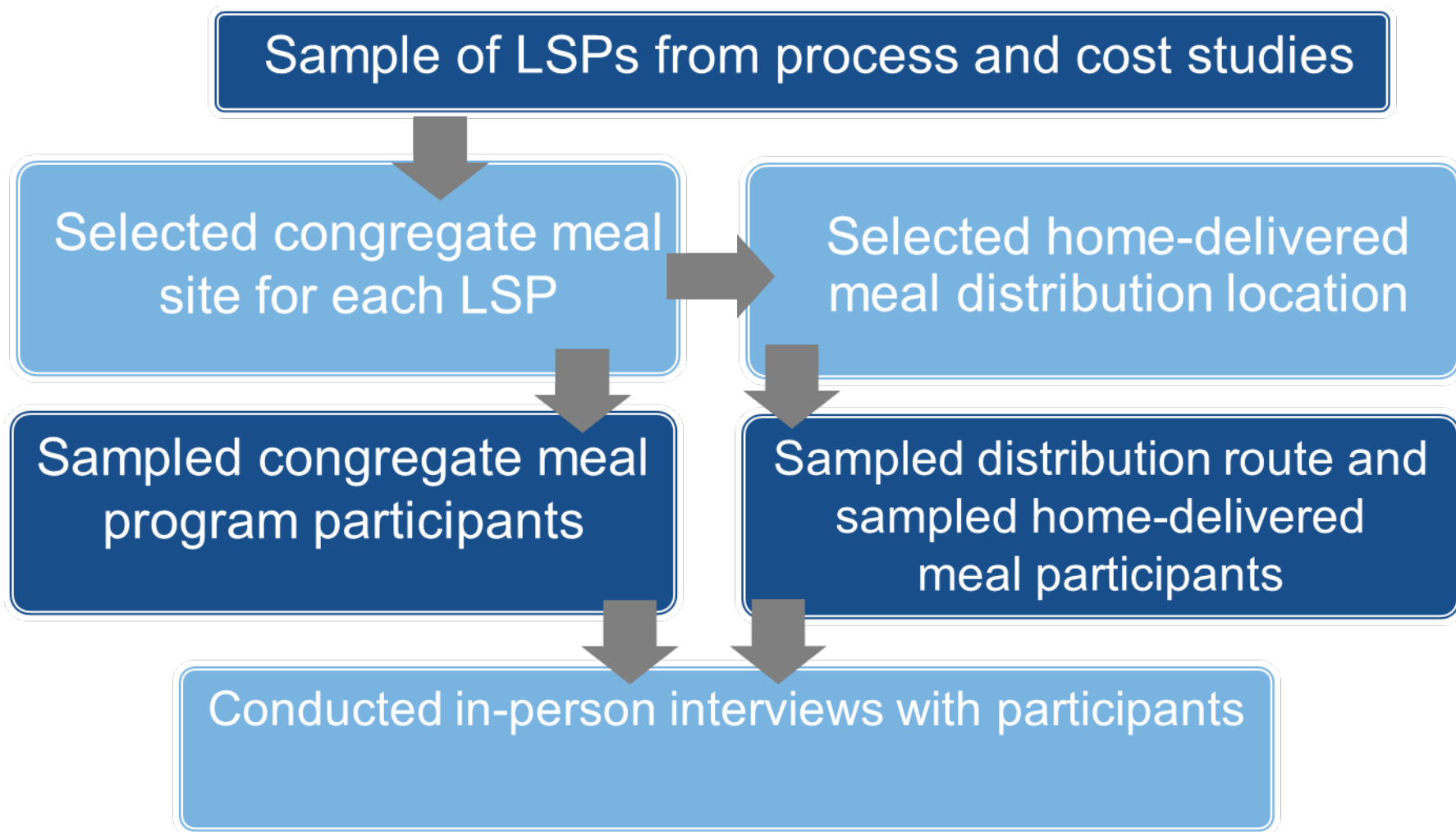


Study Design of Outcomes Evaluation



LSP = Local Service Provider

Study Design of Outcomes Evaluation

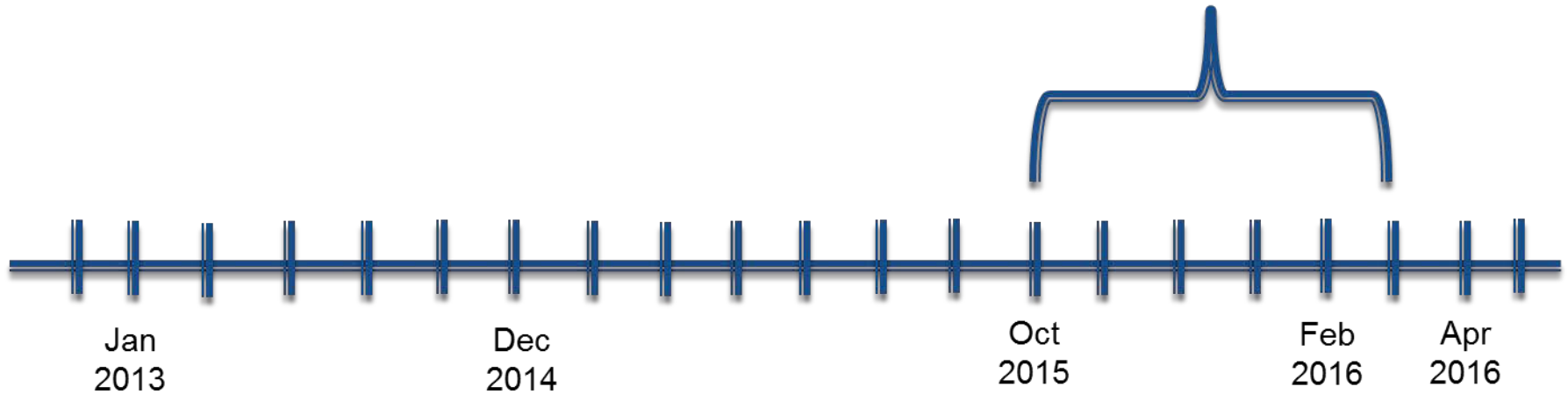


LSP = Local Service Provider

Selected Matched Comparison Group Using Medicare Records and Geography

Baseline survey with participants

- Administer survey
- Collect SSN



Selected Matched Comparison Group Using Medicare Records and Geography

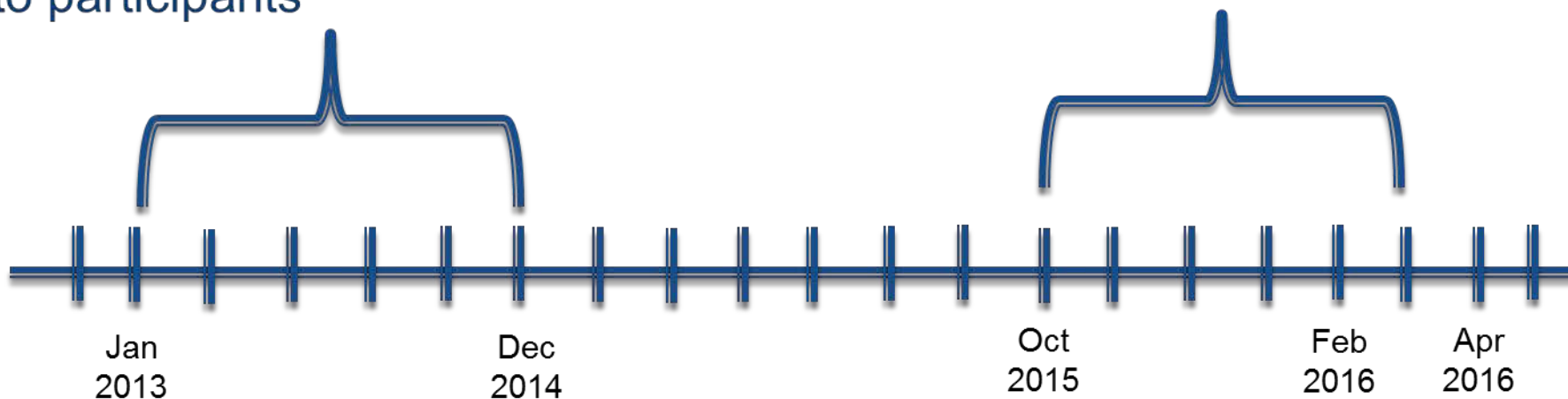
Medicare Beneficiary Summary File

Identified potential nonparticipants in same geographic service area with similar characteristics to participants



Baseline survey with participants

- Administer survey
- Collect SSN



Selected Matched Comparison Group Using Medicare Records and Geography

Medicare Beneficiary Summary File

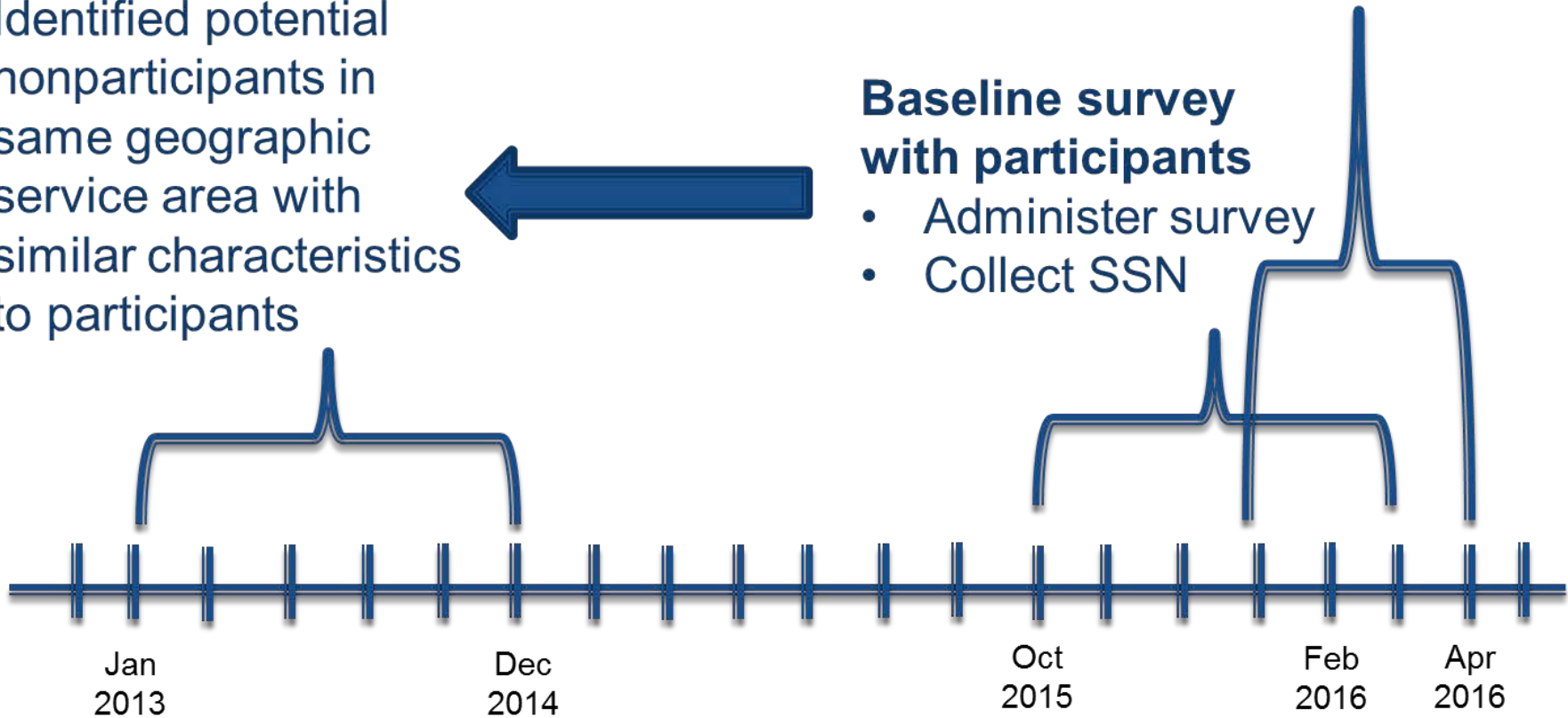
Identified potential nonparticipants in same geographic service area with similar characteristics to participants



Baseline survey with nonparticipants

Baseline survey with participants

- Administer survey
- Collect SSN



Evaluation Data

- **Outcomes survey**

- Administered in person by interviewers from October 2015 to April 2016
- Topics included program participation and usage; food security; health status, mobility, prescriptions; eating behavior, diet, food preparation; depression, loneliness, and social isolation; other topics

- **24-hour dietary recall**

- Automated Self-Administered 24-hour dietary recall (ASA-24) module
- Administered in person by interviewers from October 2015 to April 2016

- **Medicare administrative claims data**

- Used 2013–2014 data for matching participants and nonparticipants
- Used 2015–2017 data for outcomes analysis

Outcome Measures (Previous Report)

- Food security
- Socialization
 - Loneliness scale
 - Depression screener
 - Satisfaction with socialization opportunities



- Diet quality
 - Three measures based on nutrient intakes

Outcome Measures (Current Report)

- Hospital admissions and readmissions within 30 days of discharge
- Emergency department visits that resulted in an inpatient stay
- Outpatient emergency department visits
- Primary care physician visits in any setting
- Home health episode
- Admittance to a skilled nursing facility
- Admittance to a long-term care nursing home
- Expenditures on Medicare Part A and B services (total and by type)

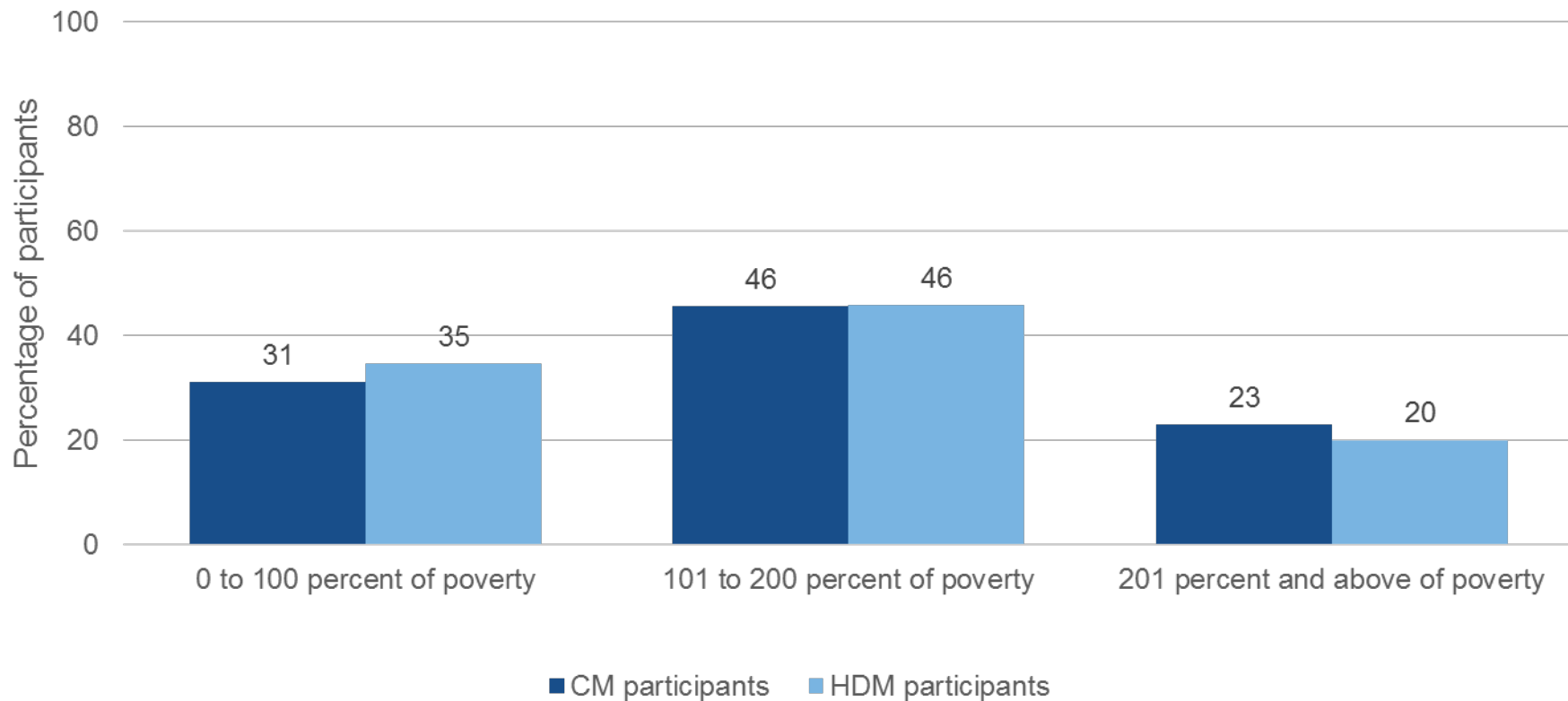


Characteristics of Program Participants

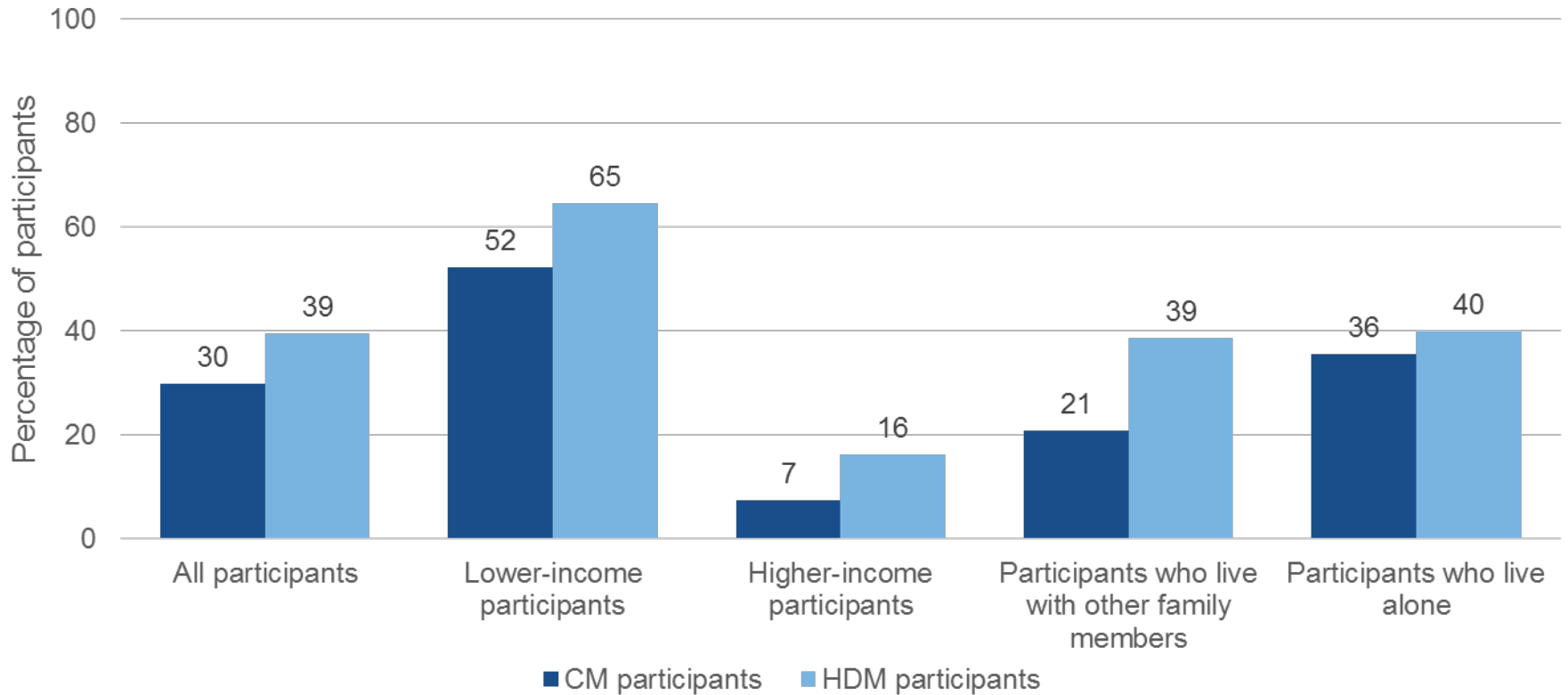
Demographic Characteristics

- **Congregate meal (CM) and home-delivered meal (HDM) participants similar in terms of gender, veteran status, whether they lived alone, race and ethnicity, and likelihood of having been widowed**
 - More than two-thirds were women
 - 16 percent were veterans
 - 60 to 63 percent lived alone
 - 14 to 18 percent were non-Hispanic black; 9 to 14 percent were Hispanic
 - 49 to 51 percent were widowed
- **Compared with CM participants, HDM participants were older and had less education**
 - Average age was 77 (CM) versus 82 (HDM)
 - 24 and 42 percent, respectively, had not completed high school

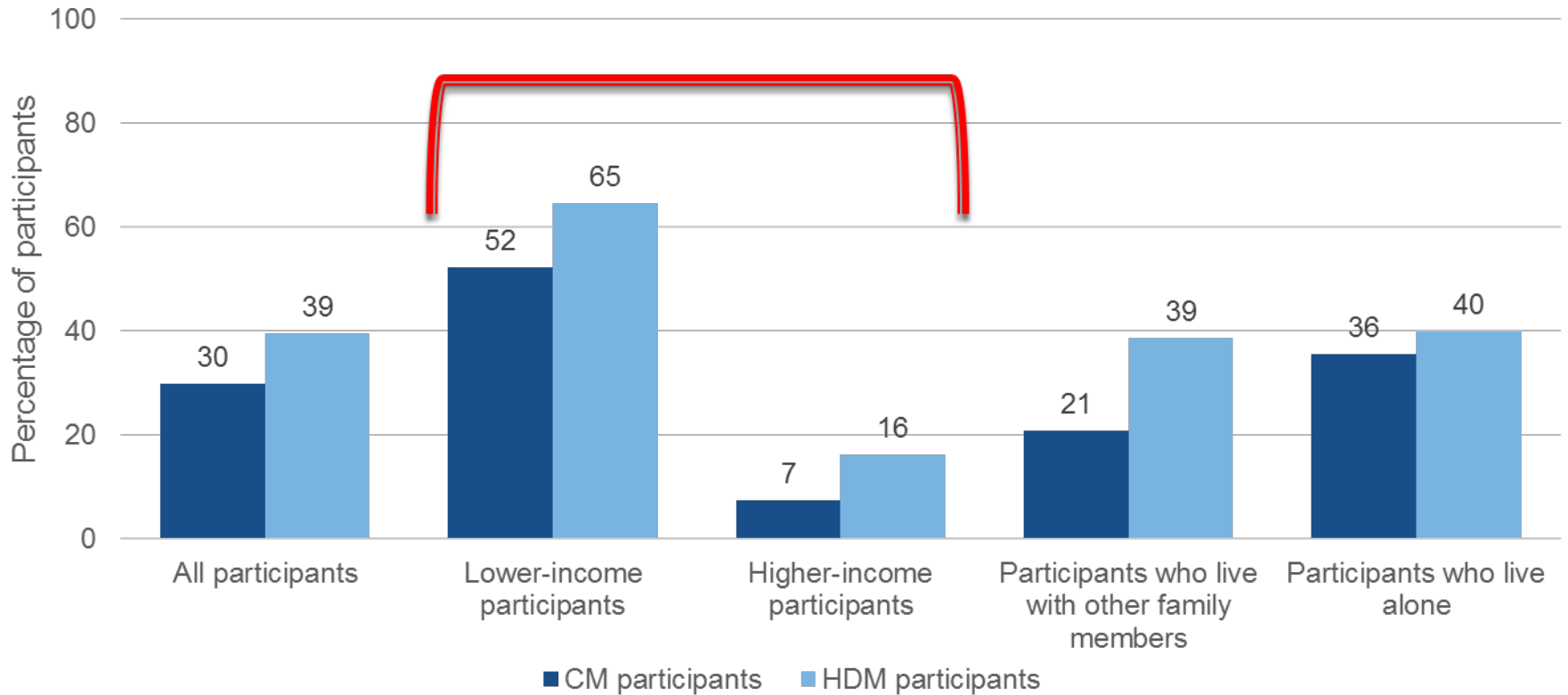
Monthly Income Relative to Poverty Guidelines



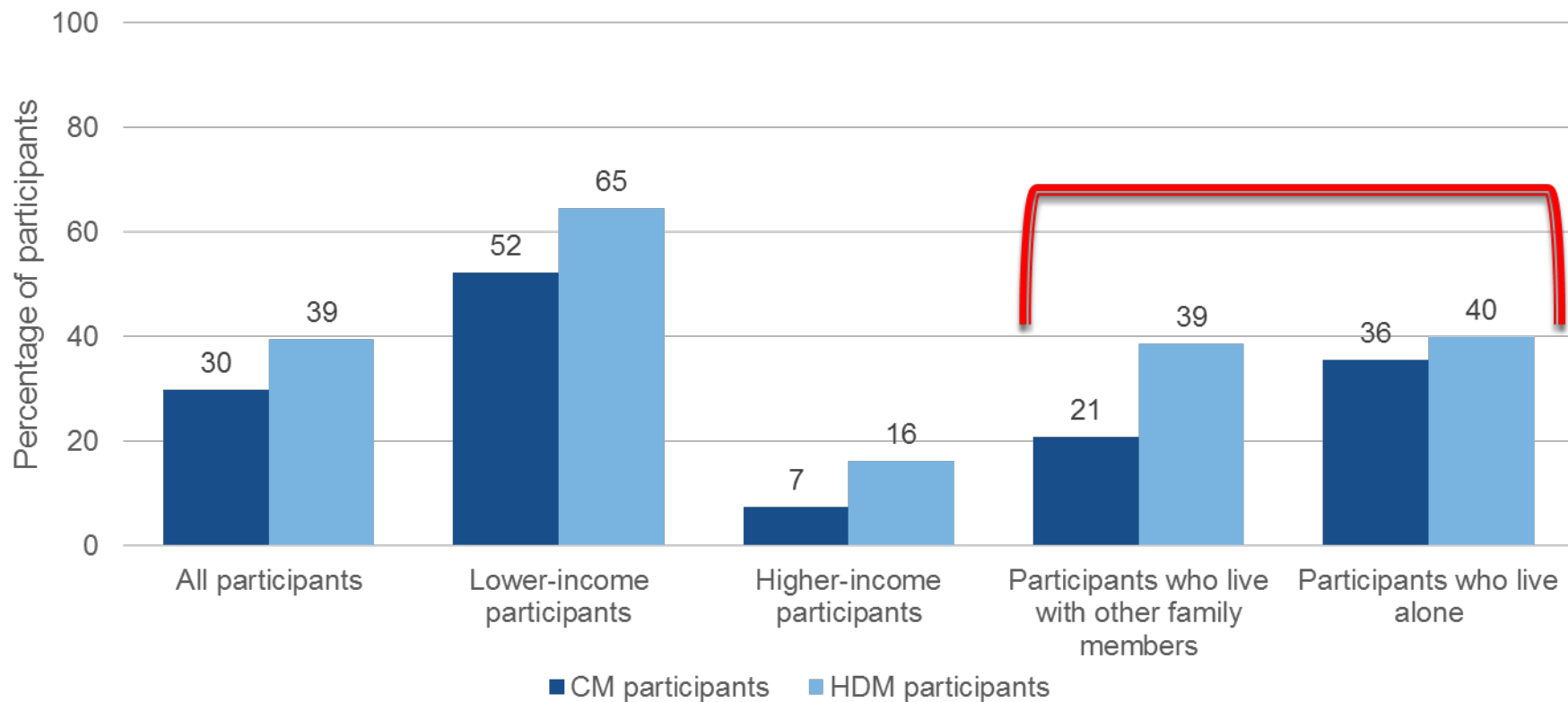
Dual Enrollment Status in Medicare and Medicaid



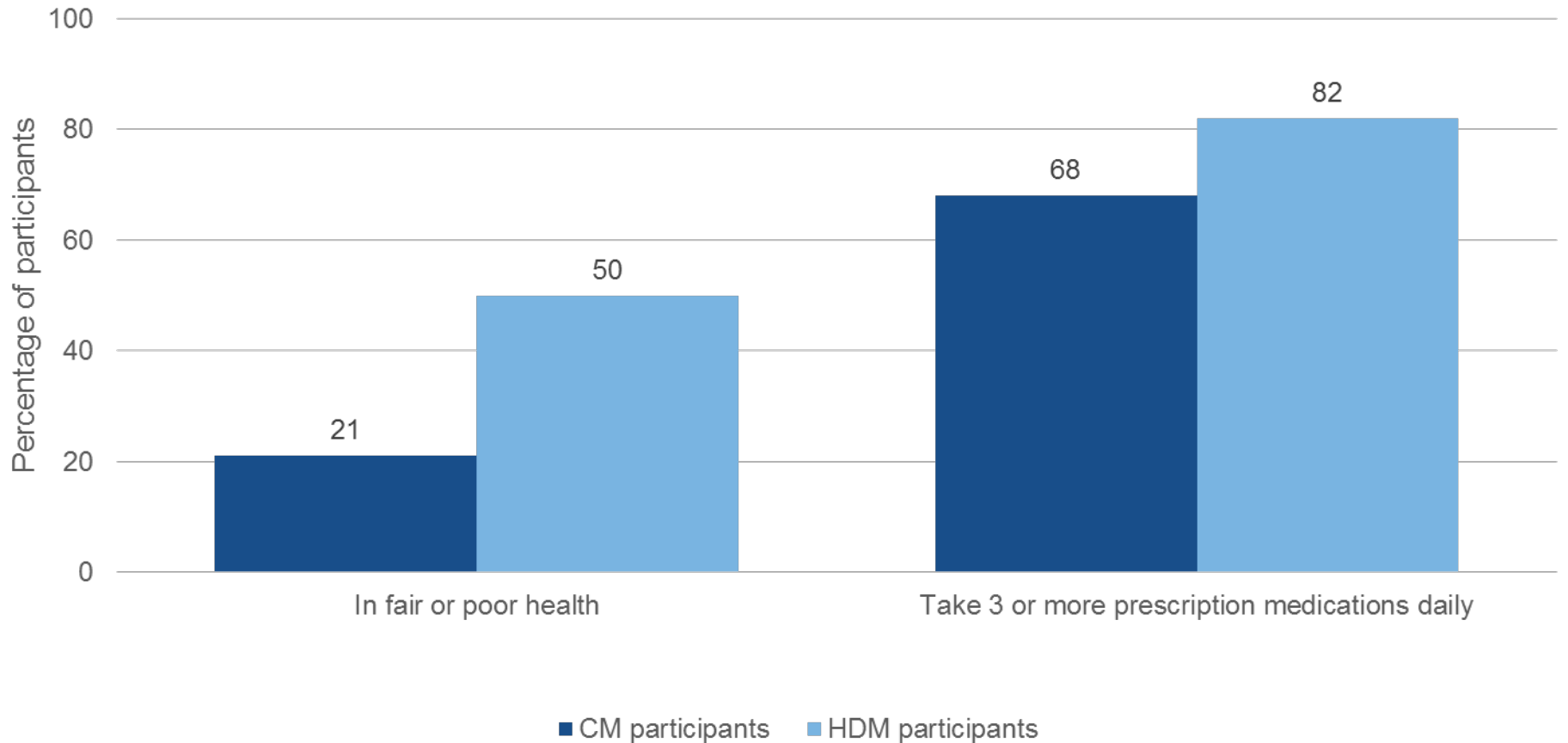
Dual Enrollment Status in Medicare and Medicaid



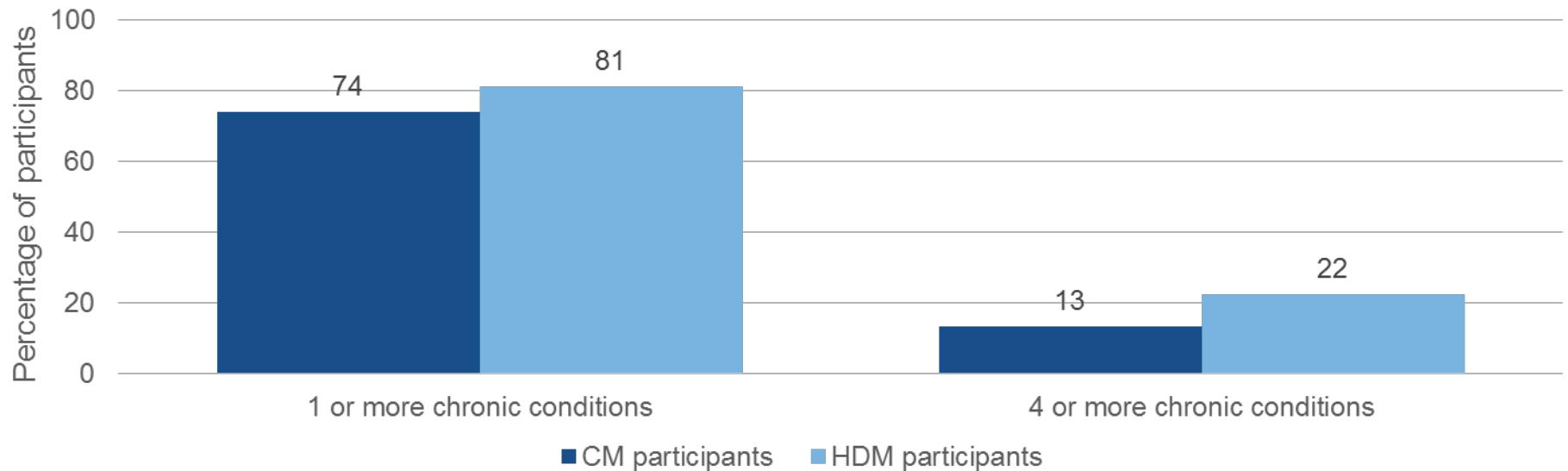
Dual Enrollment Status in Medicare and Medicaid



Health and Prescription Medications



Number and Types of Chronic Conditions



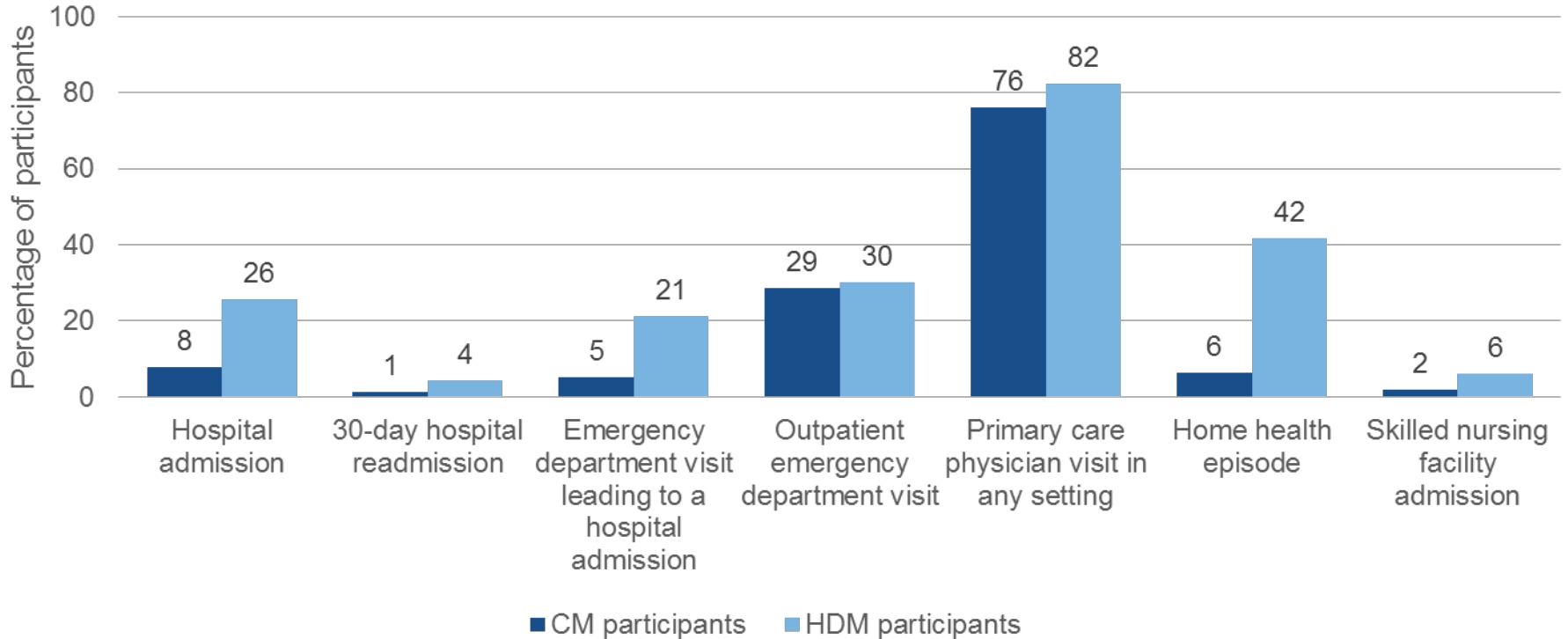
- **Congregate meal participants**

- Diabetes with complications (25 percent)
- Specified heart arrhythmias (19 percent)
- Diabetes without complications (16 percent)
- Vascular disease (15 percent)
- Congestive heart failure (15 percent)

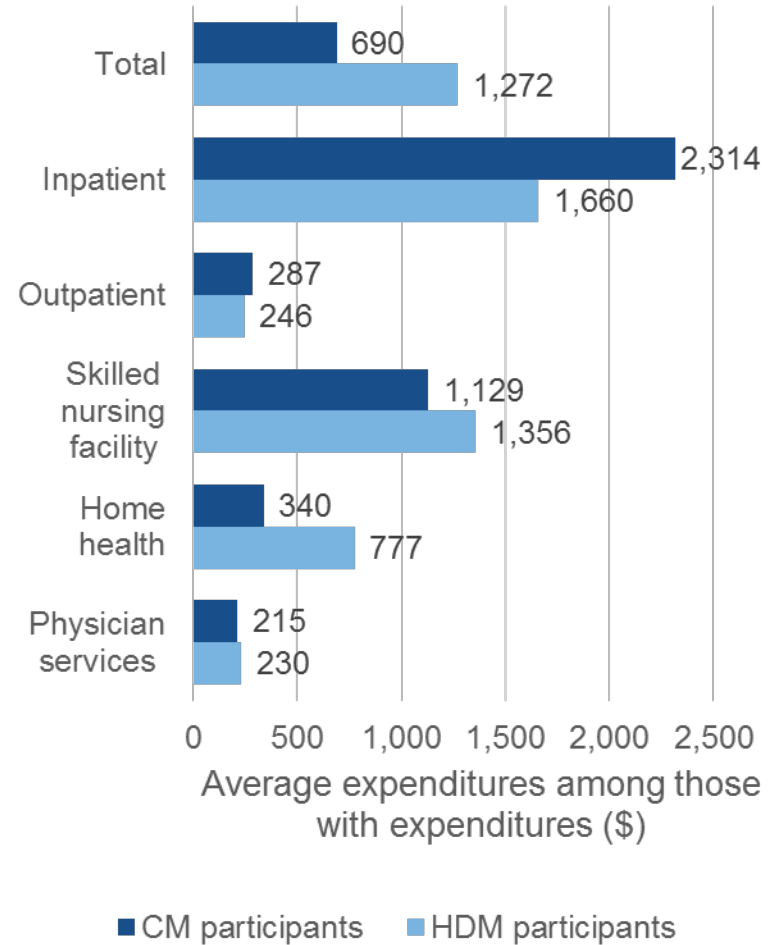
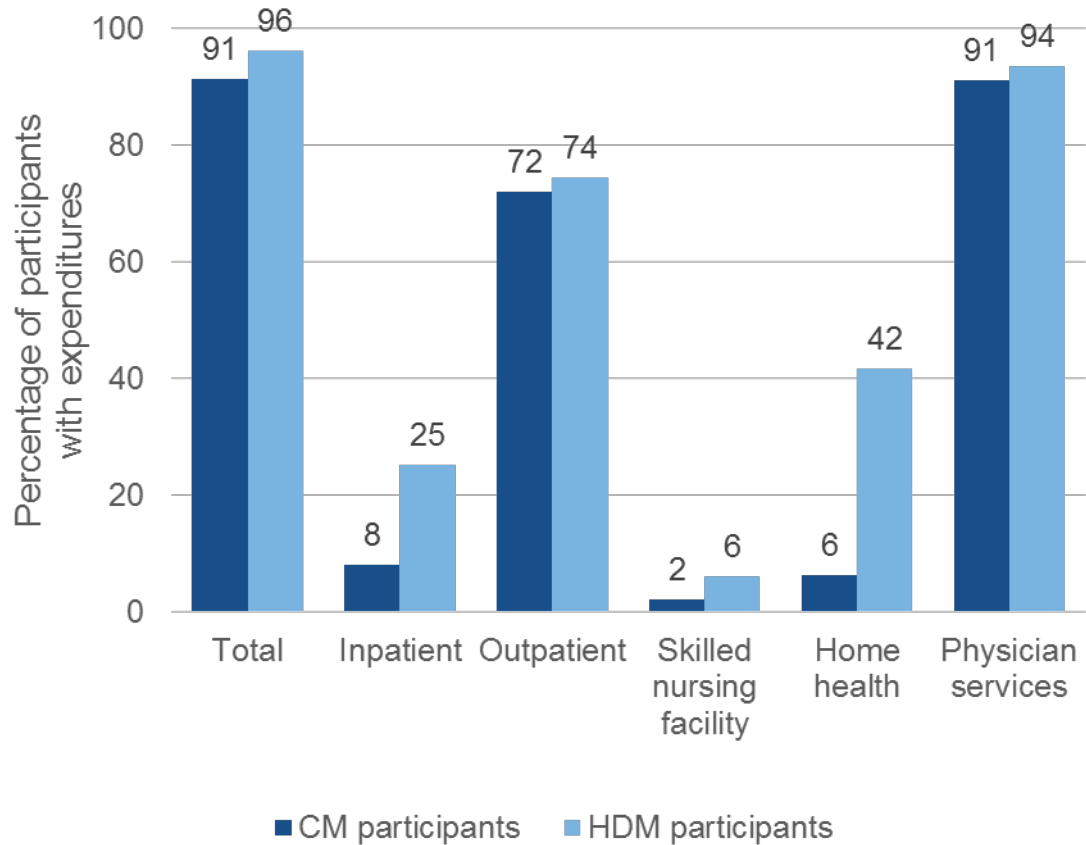
- **Home-delivered meal participants**

- Diabetes with complications (24 percent)
- Vascular disease (22 percent)
- Congestive heart failure (21 percent)
- Chronic obstructive pulmonary disease (20 percent)
- Diabetes without complications (15 percent)

Health Care Utilization

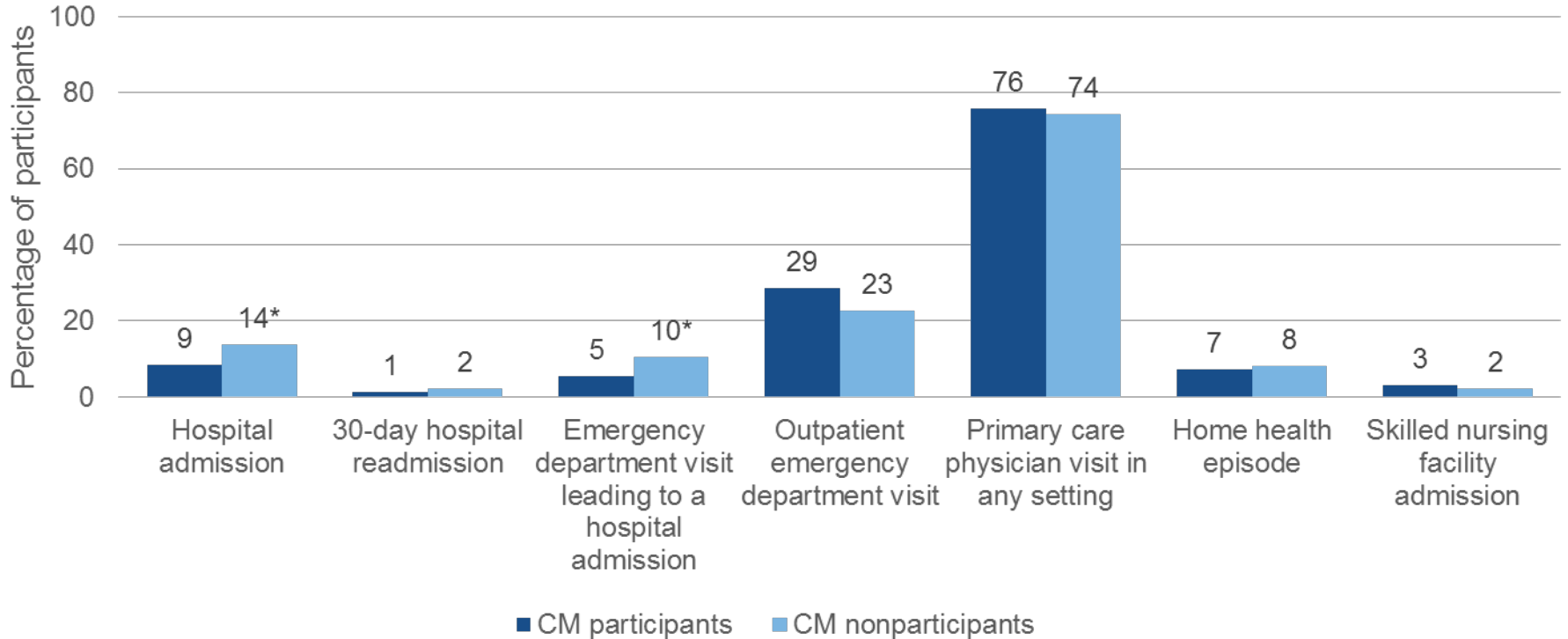


Monthly Medicare Expenditures



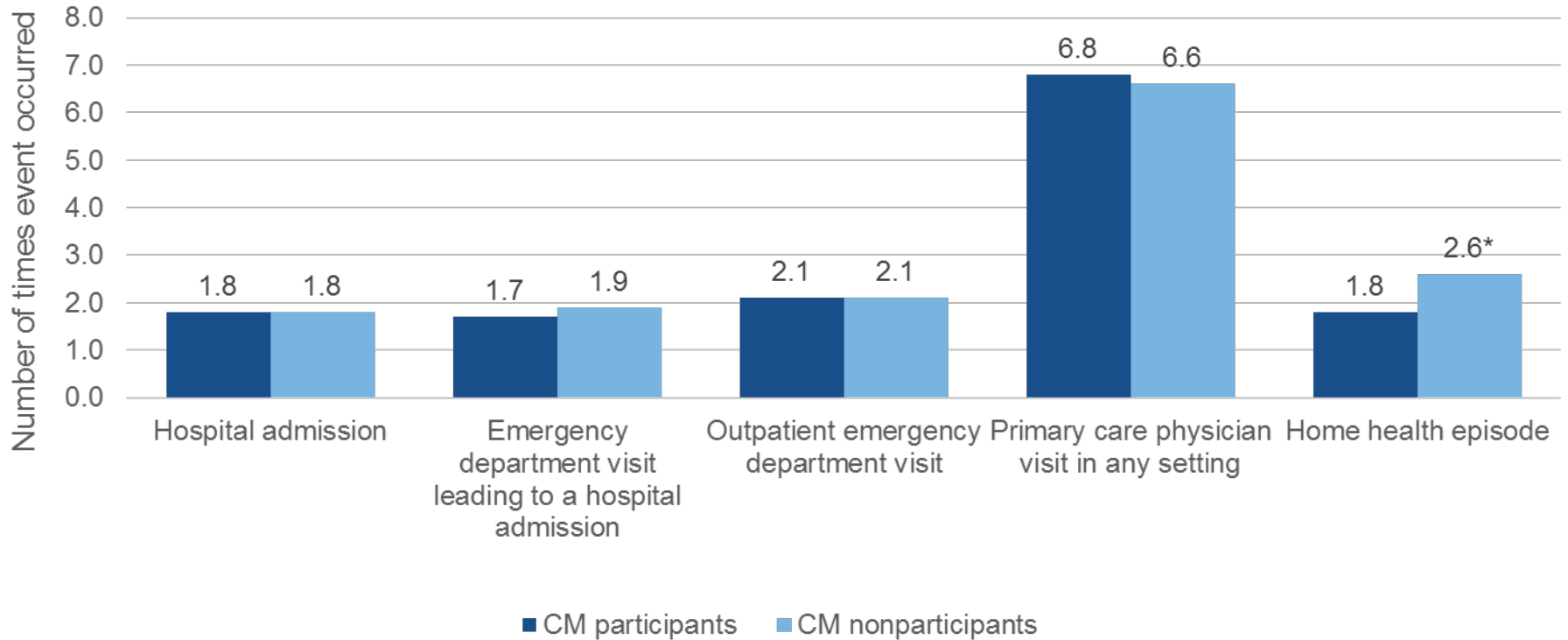
Effects of Program Participation on Health Care Utilization Outcomes

Effects of Congregate Meal Program Participation on Health Care Utilization



* Difference between participants and nonparticipants is significantly different from zero at the 0.10 level.

Effects of Congregate Meal Program Participation on Health Care Utilization (continued)

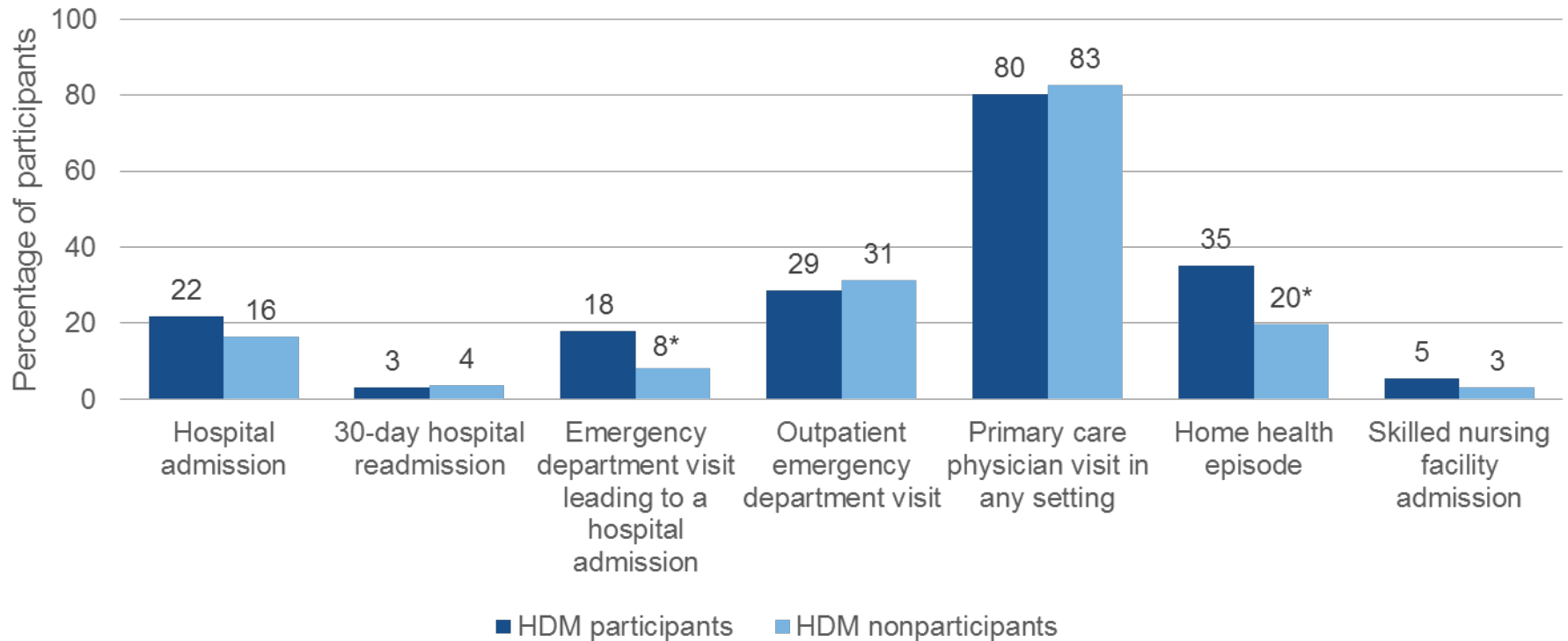


* Difference between participants and nonparticipants is significantly different from zero at the 0.10 level.

Effects of CM Program Participation on Health Care Utilization, by Income and Living Arrangement

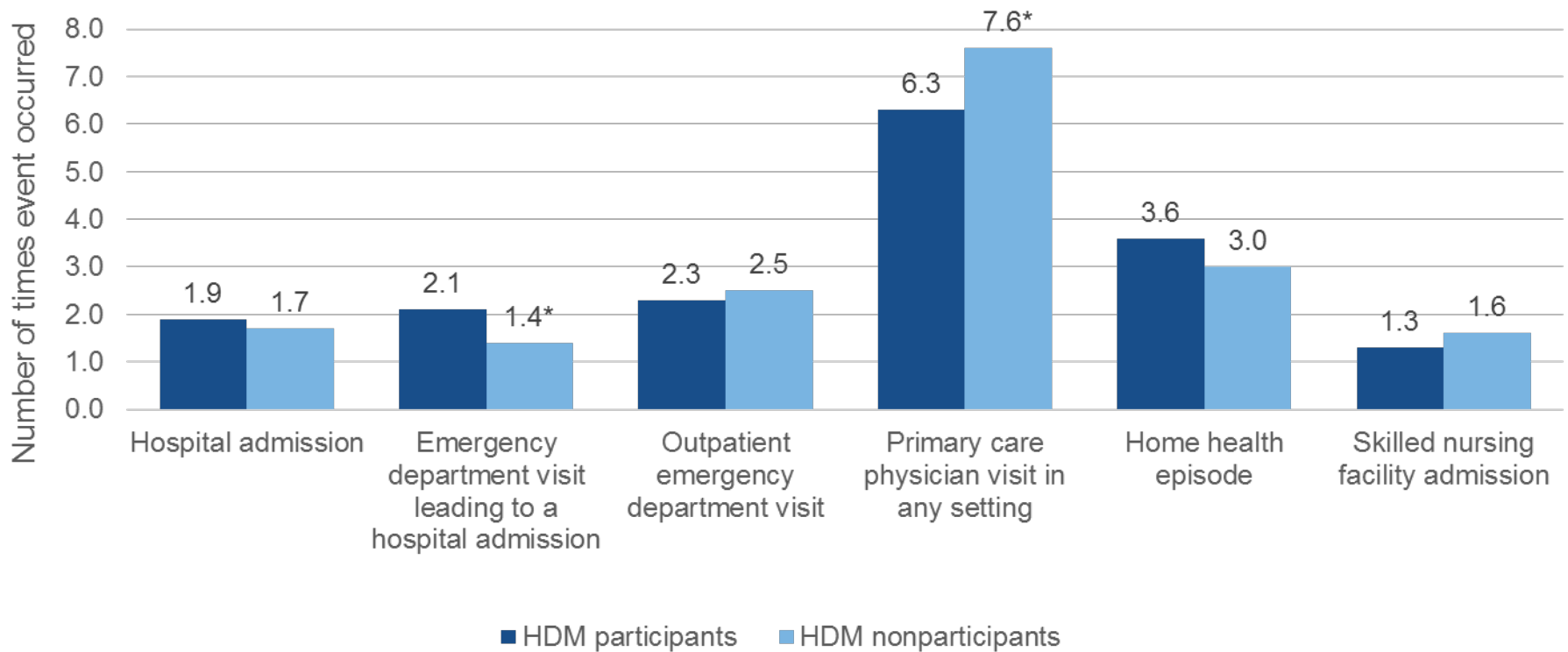
Outcome	Finding
Participants were less likely than nonparticipants to have a hospital admission	
All individuals	✓
Lower-income individuals	✓
Higher-income individuals	No effect
Individuals who live alone	✓
Individuals who live with others	No effect
Participants were less likely than nonparticipants to have an emergency department visit leading to a hospital admission	
All individuals	✓
Lower-income individuals	✓
Higher-income individuals	No effect
Individuals who live alone	✓
Individuals who live with others	No effect

Effects of Home-Delivered Meal Program Participation on Health Care Utilization



* Difference between participants and nonparticipants is significantly different from zero at the 0.10 level.

Effects of Home-Delivered Meal Program Participation on Health Care Utilization (continued)



* Difference between participants and nonparticipants is significantly different from zero at the 0.10 level.

Effects of HDM Program Participation on Health Care Utilization, by Income and Living Arrangement

Outcome	Finding
Participants were more likely than nonparticipants to have a home health episode	
All individuals	✓
Lower-income individuals	No effect
Higher-income individuals	✓
Individuals who live alone	✓
Individuals who live with others	No effect
Participants were more likely than nonparticipants to have an emergency department visit leading to a hospital admission	
All individuals	✓
Lower-income individuals	✓
Higher-income individuals	✓
Individuals who live alone	✓
Individuals who live with others	No effect

Effects of Congregate Meal Program Participation on Health Care Utilization in Next 12 Months

- Participants less likely than nonparticipants to be admitted to nursing home (4 versus 6 percent)
- Among lower-income individuals:
 - Participants less likely than nonparticipants to be admitted to nursing home (2 versus 10 percent)
 - Participants less likely than nonparticipants to have ED visit (14 versus 24 percent)
- No effects for higher-income individuals
- No differences in effects for individuals who live alone and for those who live with other family members

Effects of Home-Delivered Meal Program Participation on Health Care Utilization in Next 12 Months

- Participants more likely than nonparticipants to have
 - Hospital admission (32 versus 22 percent) and readmission (9 versus 3 percent)
 - Outpatient emergency department visit (48 versus 39 percent)
 - Nursing home admission (14 versus 5 percent)
- Higher-income participants more likely than nonparticipants to have hospital readmission (12 versus 5 percent) and nursing home admittance (16 versus 4 percent)
 - No effect for lower-income participants
- Individuals who live with other family members more likely to have hospital admission (32 versus 16 percent) and readmission (9 versus 0 percent) and outpatient ED visit (47 versus 35 percent)
 - No effect for individuals who live alone

Conclusion

Evaluation Strengths

- **Comprehensive data**
 - Medicare administrative data and in-person survey interview data
- **Nationally representative samples of NSP participants**
 - Research design fosters national-level assessment
- **Unique research design**
 - Matching participants to nonparticipants based on geography and health and health care utilization profiles

Assessing the Health Needs of NSP Participants

- **Many NSP participants are in fair or poor health and have functional impairments**
- **Chronic conditions highly prevalent among NSP participants**
 - Over 75 percent had at least one condition; 13 to 20 percent had at least four
- **NSP participants experience many health events**
 - **CM participants**
 - Outpatient ED visits and PCP visits most common
 - Hospital admissions and home health episodes less common but present
 - **HDM participants**
 - Chances of experiencing events much higher than CM participants
 - Hospital admissions, ED visits, and home health episodes common
- **Underscores vulnerability of participants the program serves, particularly for HDM participants**

Assessing Program Effectiveness

- CM participants in comparison to nonparticipants
 - Less likely to have **hospital admission**
 - Less likely to have **emergency department visit** leading to a hospital admission
 - Had fewer **home health episodes** among those who experienced one
 - Less likely in longer run to be **admitted to a nursing home**
 - Effects for lower-income people were large; no effects for higher-income people
 - Effects for people who live alone; no effects for people who live with others
- HDM participants in comparison to nonparticipants
 - More likely to have **emergency department visit** leading to a hospital admission
 - More likely to have a **home health episode**
 - More likely in longer run to be admitted to a **nursing home**, have a **hospital admission**, and have an **outpatient emergency department visit**
 - Effects present for higher-income people, but not for lower-income people

Summary of Evaluations' Findings for Key Outcomes

Outcome	Finding
Congregate meal program	
Participants had greater food security than nonparticipants.	✓
Participants had higher levels of socialization than nonparticipants.	✓
Participants had higher diet quality than nonparticipants. Program meals made substantial contribution to participants' diets.	✓
Participants had lower health care utilization than nonparticipants, particularly for lower-income people and those who live alone.	✓
Home-delivered meal program	
Participants' food security was similar to nonparticipants.	No effect
Participants' levels of socialization were similar to nonparticipants.	Mixed
Participants had higher diet quality than nonparticipants. Program meals made substantial contribution to participants' diets.	✓
Participants had higher health care utilization in short and long run for some outcomes, but only among higher-income participants and those who live with other family members.	Mixed

Potential Areas of Focus

- **Congregate meals**

- **Participants had lower rates of health care utilization than nonparticipants, but many participants still experience these events**
- **Potential areas of focus:**
 - Who is experiencing these types of health events?
 - What role do income and living arrangement play in health care utilization?

- **Home-delivered meals**

- **Findings were less intuitive, potentially reflecting quality of participant-nonparticipant matching in research design**
- **Potential areas of focus:**
 - What specific types of health events do participants experience?
 - Which types of participants experience these events?
 - What types of events do new home-delivered meal participants experience?

Thank You!

- **Mathematica extends our sincere thanks to all of the SUA, AAA, and LSP staff who completed study surveys, provided data for the meal cost analysis, and helped facilitate a successful outcomes survey**
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Evaluation Reports

- Process study report
 - www.acl.gov/sites/default/files/programs/2017-02/NSP-Process-Evaluation-Report.pdf
- Cost study report
 - www.acl.gov/sites/default/files/programs/2017-02/NSP-Meal-Cost-Analysis.pdf
- First outcomes evaluation report
 - www.acl.gov/sites/default/files/programs/2017-07/AoA_outcomesevaluation_final.pdf
- Nutritional quality of program meals issue brief
 - https://acl.gov/sites/default/files/programs/2017-11/IB_NutritionServicesProgramEvaluation.pdf
- Second outcomes evaluation report
 - <https://acl.gov/news-and-events/announcements>