

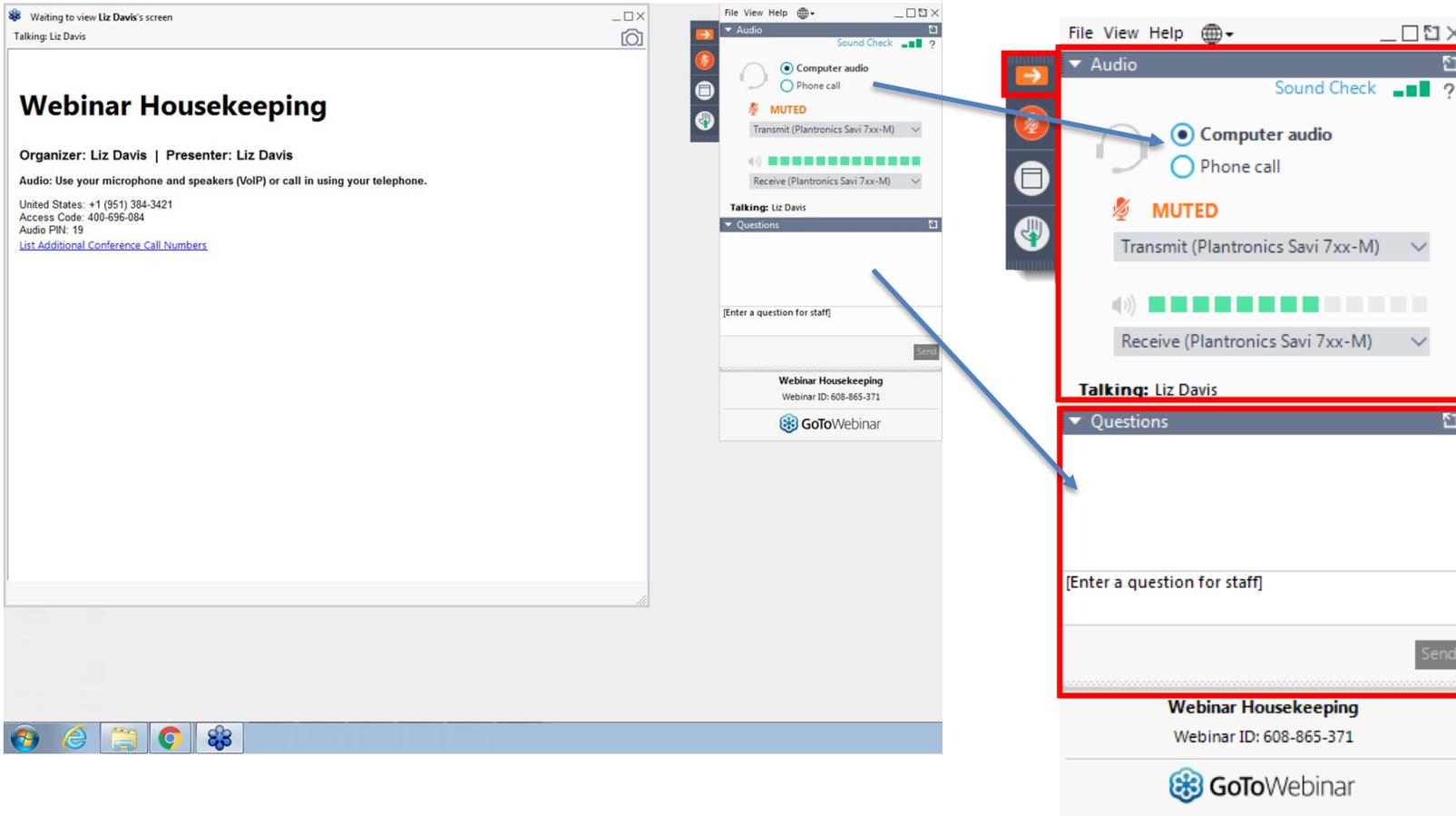
defeat **malnutrition** today



*Connecting the Dots Across  
Oral Health, Food Insecurity  
and Malnutrition*

Webinar  
June 18, 2019





## Your Participation

Open and close your control panel

Join audio:

- Choose **Mic & Speakers** to use your computer
- Choose **Telephone** and dial using the information provided

Submit questions and comments via the Questions panel

# Meet our Presenters



**Mario Orozco, MPH, MBA, CCRP**  
Principal Investigator,  
Oral Healthcare and Coordination  
West Health Institute



**Tim Platts-Mills, MD**  
Vice Chair of Research,  
Emergency Medicine  
University of North Carolina at Chapel Hill



**Kavita Ahluwalia, DDS, MPH**  
Associate Professor of  
Dental Medicine  
Columbia University  
College of Dental Medicine



**defeat **malnutrition** today**

**Bob Blancato**  
**National Coordinator**



**Brenda Schmitthener, MPA**  
**Senior Director, Successful Aging, West Health Institute**

# West Health: Partnering to Make Significant Impact

Dedicated to lowering healthcare costs to enable seniors to successfully age in place with access to high-quality, affordable health and support services that preserve and protect their dignity, quality of life and independence.



**Outcomes-based  
philanthropy**



**Applied medical  
research**



**Policy research  
and education**



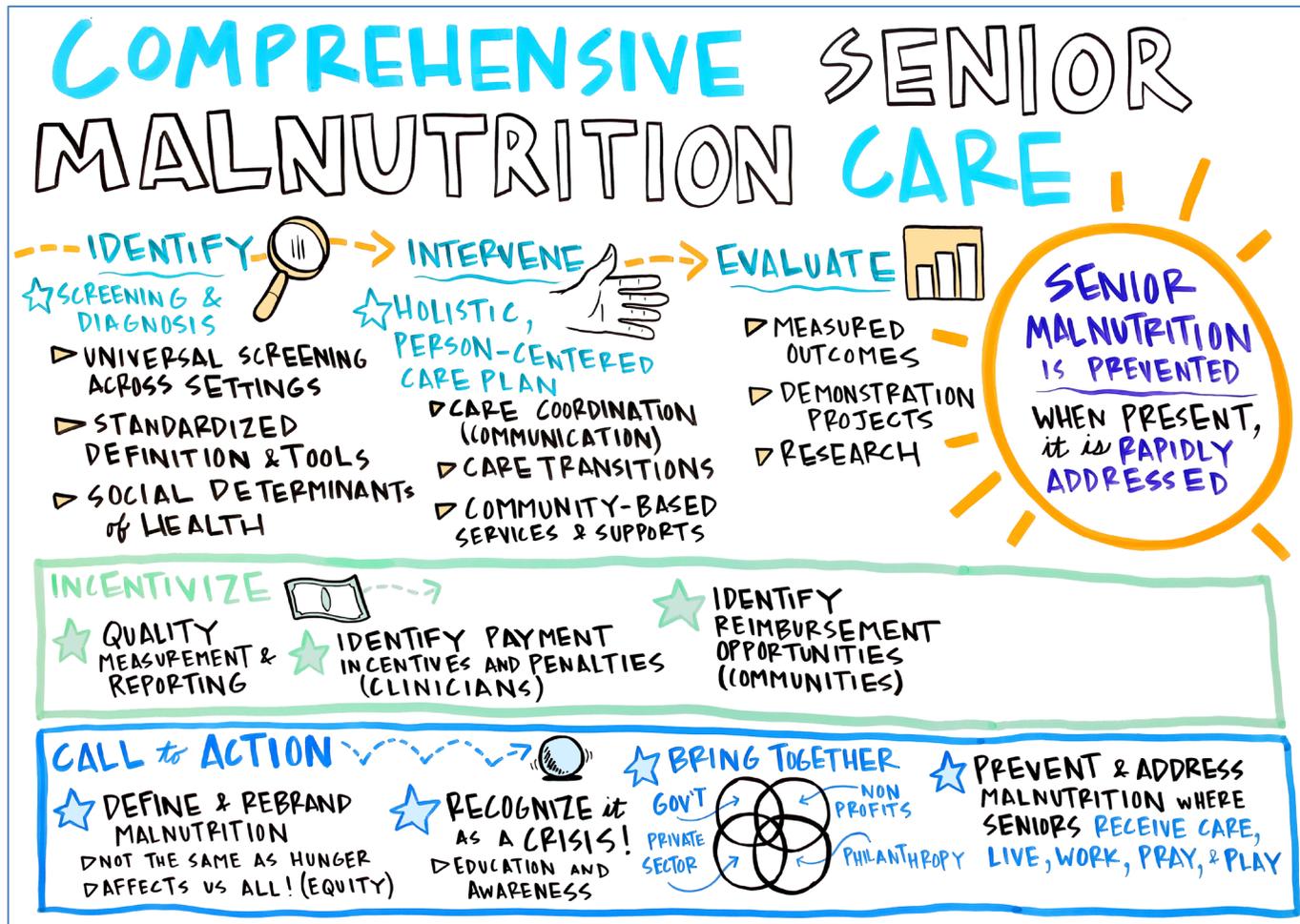
# The Human and Financial Impact of Malnutrition

- Up to 1 out of 2 older adults is either at risk of becoming or is malnourished
- Disease-associated malnutrition in older adults is estimated to cost \$51.3 billion annually
- In community care settings an estimated 6%-30% of seniors are malnourished



# Executing the Roadmap for Comprehensive Malnutrition Care

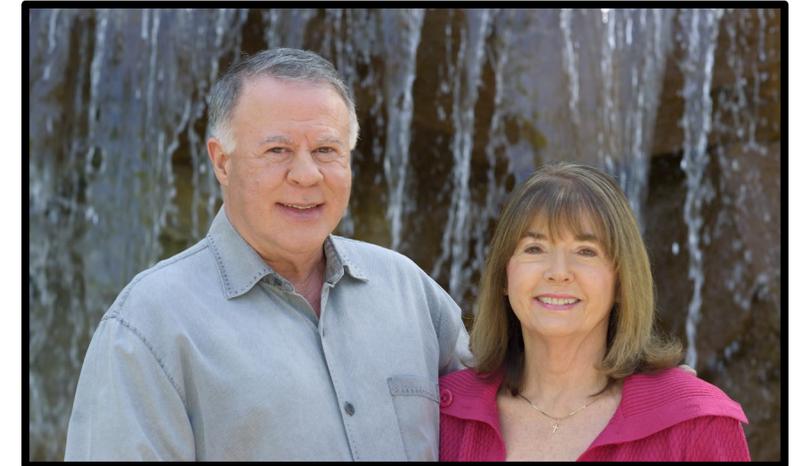
## Senior Malnutrition Visioning Session





**Mario Orozco, MPH, MBA, CCRP**  
Principal Investigator, Oral Healthcare

# Serving Seniors: Gary and Mary West Senior Wellness Center



SERVING  
SENIORS



# Gary & Mary West Dental Clinic – Serving Seniors Collaboration



- Administration of Comprehensive Geriatric Assessment
  - including screening for food insecurity and malnutrition
- Co-located Dental Center
- Care Coordination
  - including nutrition

*“Each dental visit is a chance to make sure prescribed medications are being taken, social problems are being addressed and nutritious food is being eaten” -Dr. Zia Agha, chief medical officer for West Health*

# Oral Health & Malnutrition

**Oral health** is “a state of being free from chronic mouth and facial pain, oral and throat cancer, oral infection and sores, periodontal (gum) disease, tooth decay, tooth loss, and other diseases and disorders that limit an individual’s capacity in biting, chewing, smiling, speaking, and psychosocial wellbeing.”

**Malnutrition** is a complex condition defined as a lack of proper nutrients that leads to a change in body composition and functional decline. Transportation barriers, food insecurity, poverty, social isolation, chronic conditions, medication, frailty, depression, impaired swallowing, and poor oral health are often the root causes of malnutrition.

[https://www.who.int/oral\\_health/en/](https://www.who.int/oral_health/en/)

Agarwal E, Miller M, Yaxley A, Isenring E, “Malnutrition in the Elderly: a Narrative Review,” *Maturitas*, 2013, vol.76, pgs.296-302.

Burks, C. E., Jones, C. W., Braz, V. A., Swor, R. A., Richmond, N. L., Hwang, K. S., ... & Platts-Mills, T. F. (2017). Risk Factors for Malnutrition among Older Adults in the Emergency Department: A Multicenter Study. *Journal of the American Geriatrics Society*.

National Academies of Sciences, Engineering, and Medicine (NASEM). 2016. Meeting the dietary needs of older adults: Exploring the impact of the physical, social, and cultural environment: Workshop summary. Washington, DC: The National Academies Press. doi: 10.17226/23496.

# Oral Health & Dental Care Challenges for Seniors

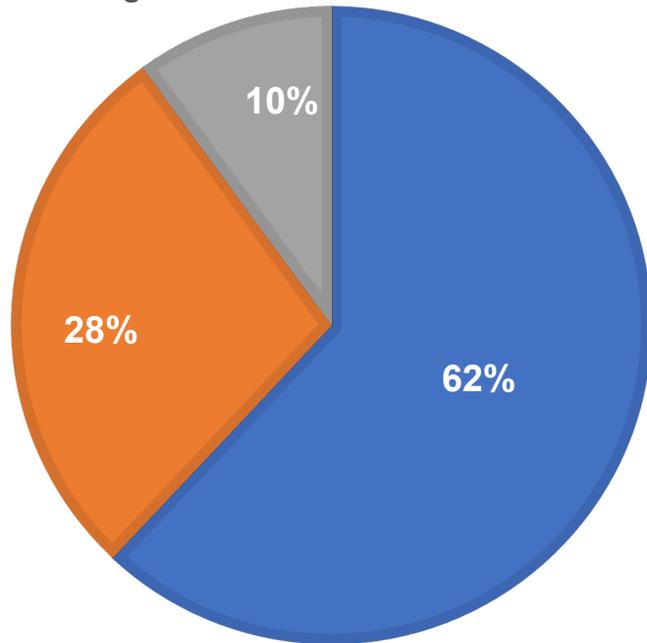
- Access to Dental Care
- Cost of Dental Care
- Lack of screening for and addressing health and social comorbidities related to poor oral health, like food insecurity and malnutrition



# Reality Bites: Dental Care Cost and Coverage

## Dental Coverage for Adults 65+, 2016 (non-institutionalized)

■ No coverage ■ Private insurance ■ Medicaid

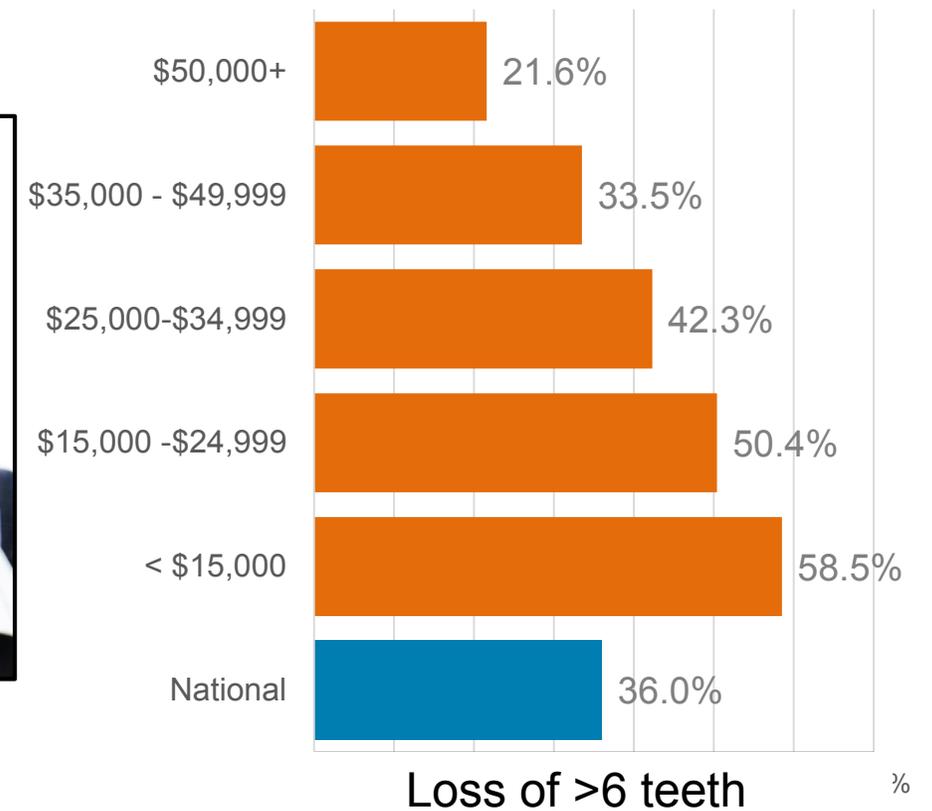
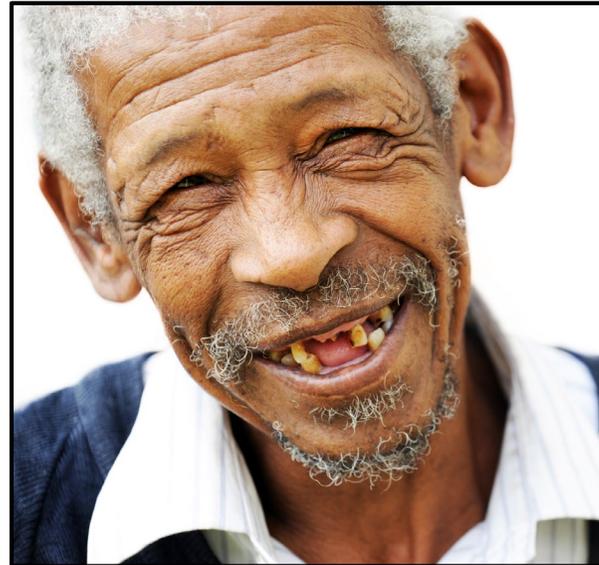
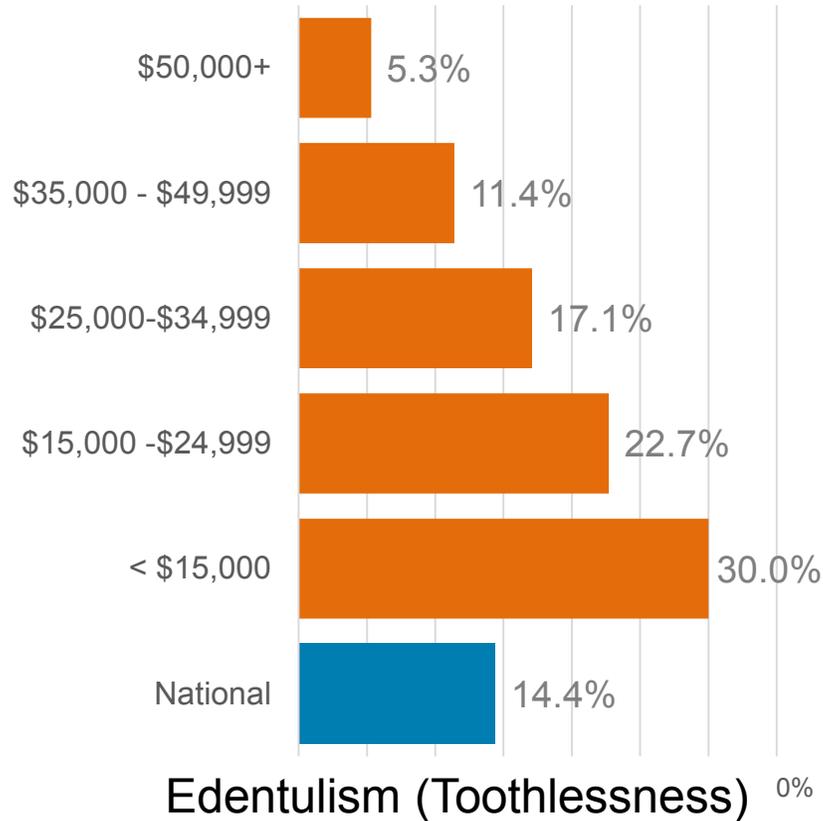


- 47% of adults 65+ had a dental visit
- \$913 average expense
- \$586 out-of-pocket expense

Manski RJ and Rohde F. *Dental Services: Use, Expenses, Source of Payment, Coverage and Procedure Type, 1996–2015*: Research Findings No. 38. November 2017. Agency for Healthcare Research and Quality, Rockville, MD.

[https://meps.ahrq.gov/mepsweb/data\\_files/publications/rf38/rf38.pdf](https://meps.ahrq.gov/mepsweb/data_files/publications/rf38/rf38.pdf).

# Correlation Between Tooth Loss, Poverty and Malnutrition Risk



2016 data (non-institutionalized)

# The State of Oral Health Among Older Adults

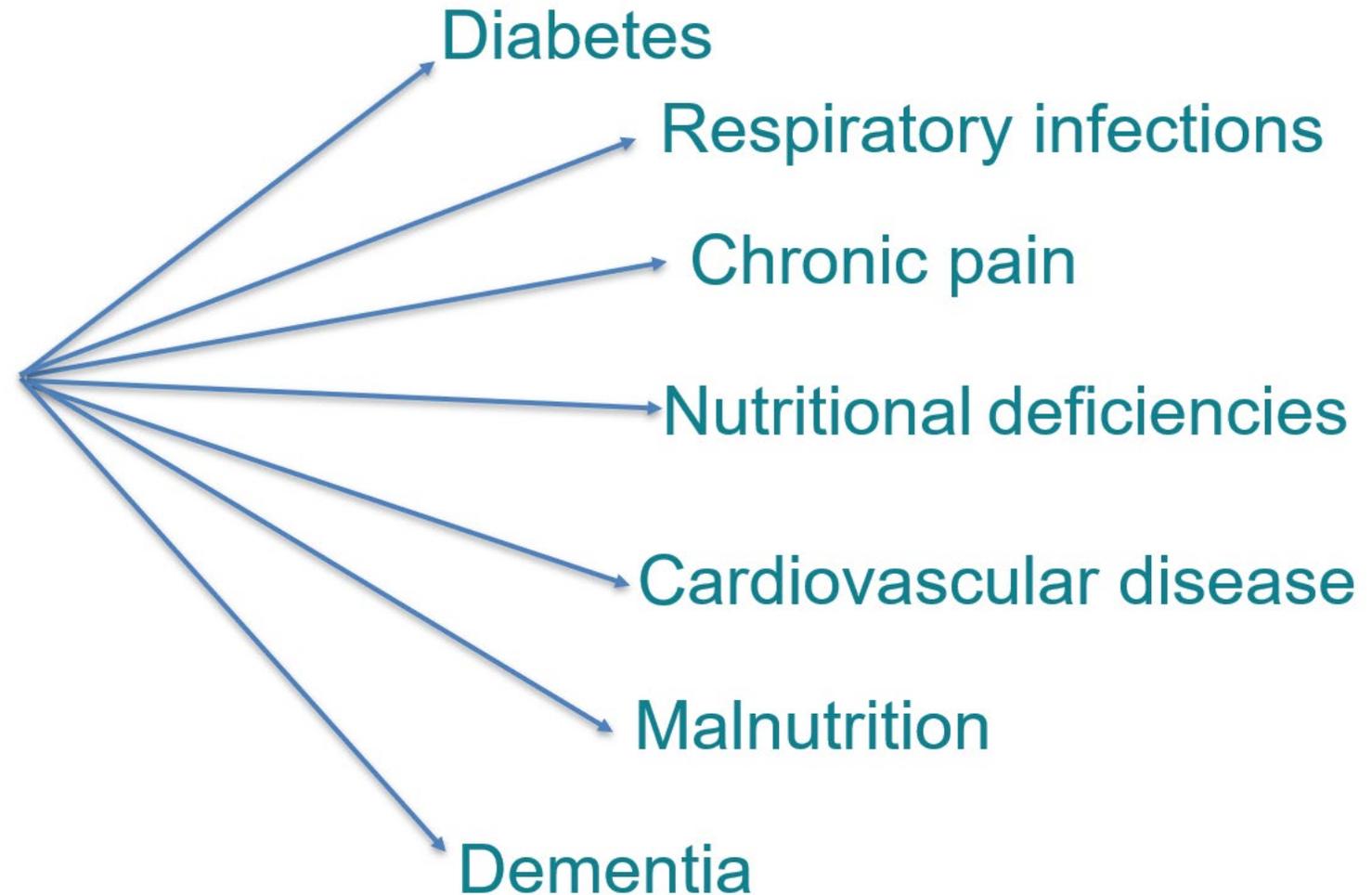
- **19%** of older adults have **untreated tooth decay**
- **96%** have experienced tooth decay in their lifetime
- **51%** of adults 65+ have mild or moderate periodontal disease
- **9%** have severe periodontitis



Dye BA, Thornton-Evans G, Li X, Iafolla TJ. Dental caries and tooth loss in adults in the United States, 2011–2012. NCHS data brief, no 197. Hyattsville, MD: National Center for Health Statistics. 2015  
CDC/NCHS, National Health and Nutrition Examination Survey, 2011–2012.

Eke, PI et al. Periodontitis in US Adults. National Health and Nutrition Examination Survey 2009-2014. JADA, Volume 149, Issue 7, 576 – 588.e6

# Association of Oral Health and Systemic Conditions



# Takeaways

The number and distribution of teeth in the mouth and the presence and condition of dentures influence the foods one consumes



Many of the food choices for persons with suboptimal oral health are “less healthy foods”



Oral health interventions *alone* do not influence the foods one chooses to eat; therefore the concurrent intervention of a dietitian must be part of the care to prevent malnutrition

# What Can You Do?

- Educate your colleagues and patients/clients about the connection between malnutrition and oral health
- Screen for malnutrition and oral health concerns in your program
- Connect your patients/clients to resources in your community (e.g., list of food assistance benefits, list of low-cost dental clinics)

# Oral Health/Malnutrition Blog



WHO WE ARE WHAT WE DO OUR FOCUS TAKING ACTION RESOURCES

BLOG

JUNE 4, 2019

## The Link between Malnutrition and Poor Oral Health in Older Adults

Take action to address these risks and positively impact seniors

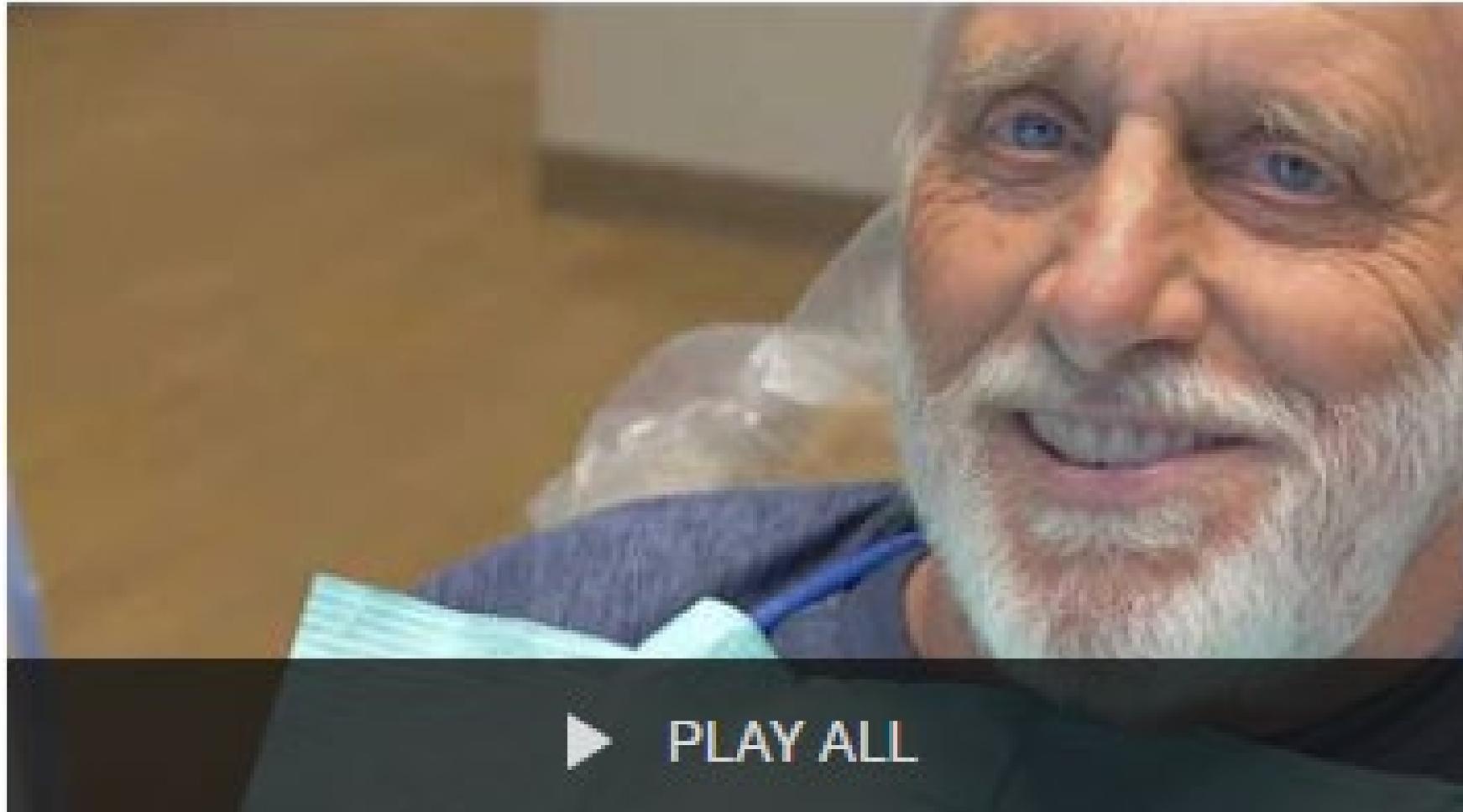
READ MORE



1 | 2 | 3 | 4

<https://www.westhealth.org/the-link-between-malnutrition-and-poor-oral-health-in-older-adults/>

# Mike's Story



<https://www.youtube.com/watch?v=Su8hsFDCZLc&t>



**Tim Platts-Mills, MD**

Vice Chair of Research – Emergency Medicine  
University of North Carolina at Chapel Hill



# Oral Health and Malnutrition: Findings from Studies of Emergency Department Patients

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DR. TIM PLATTS-MILLS

UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL

# Why is the Emergency Department an Important Clinical Setting?

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- Common site of care for patients with limited access to primary care
- Screening already standard practice for domestic violence, substance abuse, HIV
- Regulated care setting with fairly consistent culture and practice nationally
- Case managers



# Malnutrition in the Emergency Department: First Prospective Observational Study (2015)

**Study Aim:** Estimate burden of malnutrition among older adults in the ED

- One site – mixed rural/urban; broad mix of socioeconomic status
- Mini-Nutritional Assessment – Short Form

## Results:

- N=138: 16% malnourished; 60% malnourished or at risk for malnutrition
- Risk factors: Difficulty buying groceries and difficulty eating
- Difficulty eating due to problems with dentures, dental pain, and difficulty swallowing

The image shows a screenshot of the Mini Nutritional Assessment (MNA) Short Form questionnaire. The form is titled "Mini Nutritional Assessment MNA®" and includes fields for "Last name" and "First name". Below these are fields for "Sex", "Age", "Weight, kg", "Weight, lbs", and "State". The instructions state: "Complete the screen by filling in the boxes with the appropriate numbers. Total the numbers for the final screening score." The form is divided into several sections, each with a question and three possible answers (1, 2, or 3) and a checkbox for the score. Section A: "Have food intake declined over the past 3 months due to loss of appetite, digestive problems, chewing or swallowing difficulties?" (1 = severe decrease in food intake, 2 = moderate decrease in food intake, 3 = no decrease in food intake). Section B: "Weight loss during the last 3 months" (1 = weight loss greater than 3 kg (6.6 lbs), 2 = weight loss between 1 and 3 kg (2.2 and 6.6 lbs), 3 = no weight loss). Section C: "Mobility" (1 = able to get out of bed - chair but does not get out, 2 = gets out). Section D: "Has suffered psychological stress or acute illness in the past 3 months?" (1 = yes, 2 = no). Section E: "Neuropsychological problems" (1 = mild depression, 2 = no neuropsychological problems). Section F1: "Body Mass Index (BMI) (weight in kg / (height in m)<sup>2</sup>)" (1 = BMI less than 18, 2 = BMI 18 to less than 21, 3 = BMI 21 to less than 25, 4 = BMI 25 or greater). Section F2: "Ear circumference (EC) in cm" (1 = EC less than 31, 2 = EC 31 or greater). The "Screening score" section shows a total score of 14 out of 14 points, with checkboxes for "Normal nutritional status", "At risk of malnutrition", and "Malnourished". The legend indicates: 13-14 points: Normal nutritional status; 8-11 points: At risk of malnutrition; 0-7 points: Malnourished. At the bottom, there is a reference list and contact information for the MNA Short Form.

# Malnutrition in the Emergency Department: Second Prospective Observational Study (2017)

**Study Aim:** Examine contributing causes to malnutrition among older adults in the ED.

- 252 patients, age 65 and older
- Three sites – South, Northeast, Midwest U.S.
- Mini-Nutritional Assessment – Short Form

## Results:

- Overall 12% malnourished; 48% at risk for malnutrition (NC had 16% malnourished)
- Poor or moderate oral health was reported by more than 50% of patients, and >50% of risk.
- Food insecurity accounted for 14% of the population attributable risk proportion

Table 2

Malnutrition prevalence and population attributable risk proportion, by risk factor.

Risk Factor	Total n	Malnourished N (%)	Population attributable risk proportion % (95% CI)
Oral health <sup>a</sup>			
Poor or moderate	138	23 (17)	54.3 (15.5,78.1)
Good	114	6 (5)	
Food insecurity <sup>b</sup>			
Severe or moderate	20	6 (30)	13.9 (3.0,30.6)
Mild or none	232	23 (10)	

# Malnutrition in the Emergency Department: Second Prospective Observational Study (2017)

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## Other findings:

- trouble biting or chewing food (19%)
- limited kind or amount of food due to dental problems (8%)
- difficulty accessing dental care (11%)
- self-conscious about problems with teeth or gums (13%)
- uncomfortable eating in front of others due to dental problems (8%)
- teeth or gums sensitive (19%)
- last dental visit more than 2 years ago (34%)
- last dental visit more than 5 years ago (18%)

# B.R.I.D.G.E – Phase 1 (2018/19)

## Building Resilience and InDependence for Geriatric Patients in the Emergency Department

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**Study Aim:** Estimate prevalence of malnutrition and food insecurity and need for social services among these patients.

- 127 patients, age 60 and older
- UNC Chapel Hill Emergency Department
- Malnutrition Screening Tool and Hunger Vital Signs

### Results:

- 28% screened positive for malnutrition risk
- 16% screened positive for food insecurity
- 5% screened positive for both

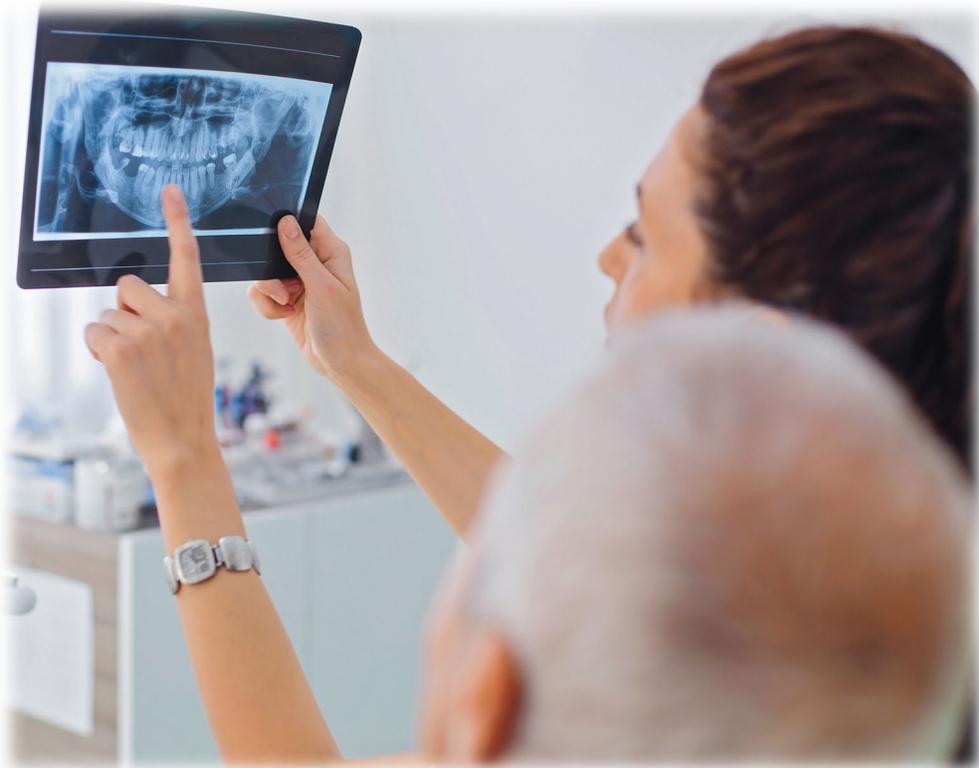


# Health-Related Social Needs among older ED Patients

	Food Insecure (HVS+) n=20 <sup>1</sup>		At-risk for malnutrition (MST+) n=36 <sup>1</sup>		Both (HVS+ and MST+) n=6		Neither n=77	
<b>Receptive to services</b>								
Yes	13	65%	14	38%	5	83%	23	30%
<b>Services desired</b>								
Any	13	65%	8	22%	5	83%	15	19%
Meals on Wheels	7	35%	4	11%	3	50%	2	2%
Congregate Meals	0	0%	0	0%	0	0%	0	0%
SNAP	5	25%	5	14%	4	66%	1	1%
Transportation	4	20%	1	3%	1	16%	4	5%
Home care	2	10%	3	8%	1	16%	3	4%

# What Can We Do About This Problem?

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- Food is relatively inexpensive
- Dental care is more expensive
  - Need more emphasis and investment on basic preventive care to affect nutritional health as well as other health issues
- Shift to value-based care
  - Opening funding mechanisms for screening and referral to services



# Engineering a Rapid Shift to Value-Based Payment in North Carolina: Goals and Challenges for a Commercial ACO Program

Article • January 23, 2019

JP Sharp, JD, MPH, Patrick H. Conway, MD, MSc & Rahul Rajkumar, MD, JD

Blue Cross and Blue Shield of North Carolina

# Summary

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- Emergency Department is unique and important setting to identify malnourished older adults
- Poor oral health and food insecurity are important contributors to malnutrition in these patients
- ED screening and links to services inexpensive method to have population-level impact
- Partnerships with health systems and insurers through value-based care initiatives





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COLLEGE OF DENTAL MEDICINE

**Kavita Ahluwalia, DDS, MPH**

Associate Professor of Dental Medicine,  
Columbia University, College of Dental Medicine



**COLUMBIA**

COLLEGE OF DENTAL MEDICINE

# Using a CBPR Approach to Addressing Oral Health and Healthcare in Home Delivered Meal (HDML) Recipients in New York City

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KAVITA P. AHLUWALIA, DDS, MPH  
COLUMBIA UNIVERSITY COLLEGE OF DENTAL MEDICINE

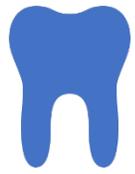
**Supported by the Bronfenbrenner Center for  
Translational Research, Cornell University**

# Nutrition and Successful Aging

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Nutrition is central to health and essential to maintaining good health and wellness

Nutrition, delivered through the HDML system, congregate meals and institutional care system is central to successful aging



# Addressing Oral Health in NYC HDML Recipients

- We chose to focus on oral health in the HDML system because:
  - Mouth is central to ability to eat, and in most cases, nutrition
  - Oral diseases are intimately associated with diet and may be associated with nutrition, which is central to the mission of HDMLs
  - Morbidity associated with oral diseases can be prevented/mitigated through daily self care
- Since this is a hard to reach population, integration with an existing system of service delivery may result in improved oral health related outcomes

# Home-Delivered Meals in New York City

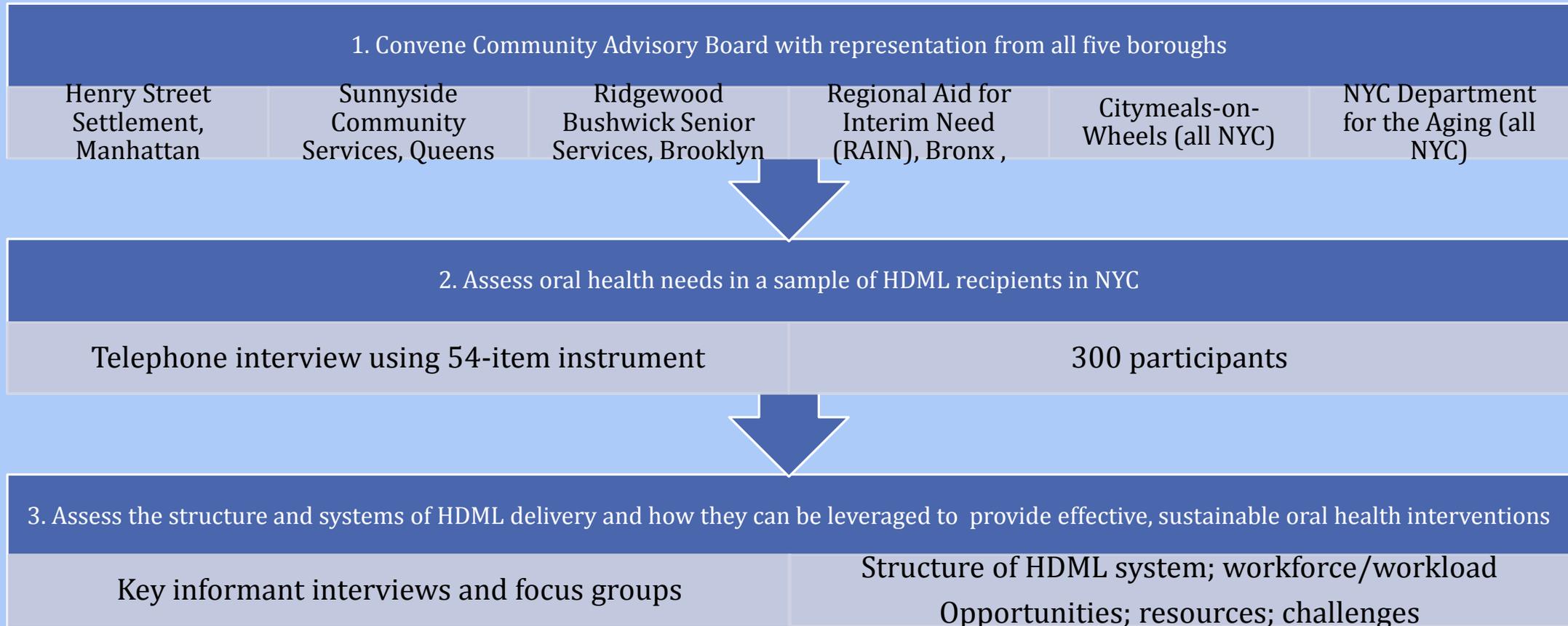
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- Administered by the Department for the Aging (DFTA)
- Meals delivered by 33 agencies across five boroughs
  - 16,500 recipients
  - Five meals per week funded by DFTA
- HDM recipients are vulnerable and hard-to-reach
  - Mean age is 80, 73% live alone, 40 % minority, 40% never leave the home, 20% have Medicaid



Although this federally funded program has been in existence for over 40 years, there has been **no systematic evaluation of feasibility to provide oral health promotion/disease prevention**

# Aims and Methods



# HDML Recipients (N=300)

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Characteristic	Frequency
<b>Demographics</b>	
Mean age in years (SD)	78.0 (9.3)
% Female	67.7
% < High School Degree	23.7
% Medicaid	15.0
<b>Access to and utilization of dental services</b>	
% Dental insurance	40.0
Mean # months since last dental visit (SD)	37.7 (69.5)
% Dental visit in past year	55.0
<b>Reasons for not visiting dentist in past year (n = 135)</b>	
% Cost	13.7
% No teeth	12.3

# HDML Recipients (N=300)

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Characteristic	Frequency (%)
<b>Oral Health Status</b>	
Missing at least one tooth	91.9
Edentulous (Replacement dentures)	26.0 (49.0)
Painful aching in mouth	14.1
Toothache	11.4
Dentures do not fit well/uncomfortable dentures	34.5/36.3
<b>Difficulty Eating and Chewing</b>	
Difficulty chewing some foods	38.0
Uncomfortable eating some foods	34.2
Avoid eating some foods	37.5

# Focus Groups and Key-informant Interviews

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- All stakeholders agree oral health is important
- Oral health is not addressed systematically, but on an “as needed” basis
- Workforce has numerous competing demands and priorities
- Case managers are:
  - aware of dental needs but do not have the tools to connect meal recipients to dental services

# Potential Interventions

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- Delivery of daily oral care aides
- Documentation of oral health status/needs
  - Improvements in case manager training
- Linking meal recipients to dental providers
  - Improvements in case manager training
  - Development of resource directory
- Delivery of outreach/oral health promotion materials
  - Development of toolkit
- Delivery of special texture meals

# Outcomes

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## Expanded Partnership

- NYC Dept for the Aging (DFTA)

## Policy

- Six oral health items included in Senior Tracking Analysis and Reporting System (STARS)
  - Used to assess medical, social, environmental needs bi-annually
  - 19,500 clients

## Training

NYC Supervisors (N=66) and case managers (N=223) trained to:

- Correctly use STARS items
- Link clients to services and education (toolkit)
- Funded by DFTA

## Toolkit

- Resource directory (500 NYC dentists surveyed)
- Toothbrushes/paste donated
- Outreach materials developed with community partners and DOHMH
  - Delivered once per quarter/as needed

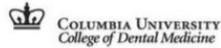
# STARS Client Assessment Database

## Oral Health-related Items

1. In the last 3 months, did the client have problems eating due to oral or other health problems?
2. If “yes” please indicate why the client had problems eating (Select all that apply)
  - Allergies to certain foods
  - Dietary restrictions
  - General mouth pain/painful sores in the mouth
  - Illness causing pain when eating/digesting
  - Loose/ill-fitting dentures
  - Missing teeth and no partial denture
  - No appetite due to medication or medical problem
  - No teeth at all and no dentures
  - Problems swallowing
3. This client has (select all that apply)
  - Natural teeth
  - Dentures
4. In the past 3 months, has the client been able to brush their teeth and/or clean their dentures regularly (at least once a day)?
5. If “no” why not? (Select all that apply)
  - Cannot hold toothbrush/denture brush
  - No toothbrush/denture brush
  - No toothpaste/denture cleaner
  - Has trouble remembering/forgets
6. When was the last time the client visited a dentist or hygienist?  
\_\_\_\_\_Months

# Oral Care Provider Directory

A resource directory for use by New York City Department for the Aging partner agencies to help older adults access dental care providers



A project of the New York City Department for the Aging and Columbia University College of Dental Medicine

## Brushing and Flossing



SENIOR DENTAL CARE

Older adults are at risk for plaque (white film of the teeth). Flossing with a toothbrush cannot remove plaque. Brushing and flossing help keep teeth healthy and prevent decay.

### How to brush your teeth

1. Squeeze fluoride toothpaste on a soft-bristled toothbrush.
2. Place your toothbrush at a 45-degree angle to your gum line.
3. Move the brush back and forth in gentle, short strokes.
4. Brush the outside, inside, and chewing surfaces of all teeth.
5. Clean the inside of the front teeth vertically.
6. Brush your tongue.
7. Rinse both your mouth and brush with water.

## Denture Care



SENIOR DENTAL CARE

If you wear dentures, it is important to take care of them, including your gums, to prevent sores and infections.

### Keep Your Mouth Clean

**Clean your mouth at least once a day.** Use a soft washcloth and warm water to clean your mouth before putting your dentures in. Rinse your mouth with water after you eat. **Brush your natural teeth twice a day.** For any remaining natural teeth, use a soft toothbrush and fluoride toothpaste.

**Schedule check-ups with your dentist.** Even if you do not have any natural teeth, you should have your dentures and mouth checked regularly.

### Keep Your Dentures Clean

Clean your dentures at least once a day. **Items you need for cleaning:**

- Denture Brush: A soft-bristled brush.
- Denture Cleanser: A gel or liquid cleanser or a fizzy tablet that dissolves in water.

## Gum Disease



SENIOR DENTAL CARE

Gum disease, or swollen gums, is a common condition that can cause pain, bleeding, and tooth loss. It is caused by bacteria that build up on your teeth and gums.

**What causes gum disease?** Bacteria found in plaque – a film of sticky, colorless bacteria that builds up on your teeth – causes gum disease.

### What are the signs and symptoms of gum disease?

- Swollen gums
- Bleeding gums after brushing or flossing
- A change in how your teeth feel when you bite down

### How to prevent gum disease

1. Brush your teeth at least twice a day.
2. Floss your teeth at least once a day.
3. Visit your dentist regularly.
4. Speak to your doctor or dentist if you have any other health conditions that may increase your risk of gum disease.

Contact your dentist promptly if you notice any of these signs and symptoms.



Christina Gianfrancesco, BA DDS Candidate and Karla F. Alvarez, DDS, MPH Associate Professor of Clinical Dentistry, Columbia University, College of Dental Medicine

## Oral Cancer



SENIOR DENTAL CARE

Oral cancer affects the mouth (including the lips, tongue, throat, and larynx) and cheeks. Cancer begins when normal cells in the mouth become damaged and grow abnormally. Oral cancer is most commonly diagnosed with oral or throat cancer, but it can also affect the throat, larynx, and thyroid gland.

### Who is at risk?

Anyone can develop oral cancer, but some people are at a higher risk.

**Seniors (age 60 and over)**

- The risk of developing oral cancer increases as a person ages.

**Men**

- Oral cancer occurs twice as often in men as in women.

### Tobacco and Alcohol Use

**Most oral cancers are caused by tobacco and alcohol use.** People with a history of smoking cigarettes, cigars and pipes, or using smokeless tobacco, such as chewing tobacco, are at a higher risk. People who drink or have a history of heavy alcohol use are also at a higher risk.

**Sunlight**

- Spending a lot of time outdoors without protection from the sun increases the risk of oral cancer.

## Tooth Care and Cavities



SENIOR DENTAL CARE

Seniors may be at greater risk for developing cavities due to dry mouth and shrinking gums. Dry mouth can be caused by diabetes and medications commonly taken by seniors.

### What causes cavities?

Eating sugary or starchy foods can lead to cavities. These foods, when combined with bacteria found in the mouth, can cause tooth decay.

### Why are cavities bad?

Cavities can cause pain. Untreated cavities may cause infection, tooth damage and tooth loss.

Remember – Do not use your toothbrush to clean dentures. Use a denture brush instead.

### How to prevent cavities:

- See your dentist regularly
- Limit sugary drinks
- Limit starchy and sweet foods
- Brush your teeth after each meal with a soft toothbrush and fluoride toothpaste

This dark spot is a cavity. This type of cavity is common when gums shrink.



Contact your dentist or medical provider promptly if you are in pain or need care.



Christina Gianfrancesco, BA DDS Candidate and Karla F. Alvarez, DDS, MPH Associate Professor of Clinical Dentistry, Columbia University, College of Dental Medicine

# Lessons Learned

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- ✓ Find a “hook” that is important to the partner. In this case, nutrition and ability to eat
- ✓ Community partners have valuable knowledge and can facilitate access to funding
- ✓ Partnership must be “equal” in access to data, decision-making and dissemination if potential interventions are to be relevant and sustainable
- ✓ Can take longer than traditional approaches but outcomes are robust and have a high potential for sustainability

# Addressing Oral Health: Multidisciplinary Approach

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We need a multidisciplinary comprehensive approach that involves community, dental and non-dental providers and policymakers

- Financing for access to and utilization of professional dental services
  - Coverage for dental services under Medicare
  - Coverage for daily oral care aides (toothbrush, toothpaste, denture care)
- Integrate oral health services among existing service delivery systems that target older adults
  - Home care, LTC, Home-Delivered Meals, Senior Centers, NORCs, Congregate meals, etc
    - Daily oral care, linkages to dental services, QA
- Improve training of dental and non-dental providers to address oral health in older adults
  - Physicians, nurses, home care workers, LTC workers, peer educators



**Please submit your questions**



Thank you!

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**defeatmalnutrition.today**

 **westhealth**  
**westhealth.org**