



Rural vs Urban DPP Participation and Outcomes in Montana: *Does participant location matter?*

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Objectives:

- ✓ Describe factors contributing to increased rates of chronic conditions and diseases in rural areas
- ✓ Describe differences in rural vs urban outcomes, based on participant location
- ✓ Describe considerations in designing and implementing DPP programs in rural communities that promote success

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National Statistics:
Diabetes
Prediabetes

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Montana Diabetes Statistics

- About 65,000 Montana adults currently have diagnosed diabetes.¹
- The percentage of Montana adults with diagnosed diabetes increased from 2.8% in 1990 to 7.9% in 2017.¹
- Diabetes is more common among American Indians/Alaska Natives than White non-Hispanics in Montana.
 - In 2017, 18.9% of American Indian/Alaska Natives in Montana reporting having diagnosed diabetes compared to 7.4% of White non-Hispanics.¹

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Montana Prediabetes Statistics

- In 2017, 7.4% of Montana adults reported having prediabetes.¹
- In the US, it is estimated that 84.1 million adults (33.9% of the adult US population) aged 18 years or older have prediabetes.²

Data sources:
 – Montana Behavioral Risk Factor Surveillance System 1990-2017.
 – Centers for Disease Control and Prevention National Diabetes Statistics Report 2017.

What does the future hold???

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CDC: Diabetes is more prevalent in disadvantaged groups, including rural zip code

- Remote counties
 - Populations that have less education
 - Populations with higher rates of unemployment
- *****
- **Diabetes prevalence** is 15-17% higher in rural areas than in urban areas (CDC MMWR data)
 - Rural America has a disproportionately high number of diabetes-related hospital deaths compared to urban America (most pronounced in the South and Midwest)

Can we make the same assumptions about **prediabetes**???

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Factors contributing to higher rates of chronic disease in rural areas

- Aging population
- Social determinants of health – poverty, lack of food security, housing/homelessness
- Health behaviors related to chronic disease
- Environmental and occupational factors
- Healthcare access barriers

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Rural barriers to accessing healthcare and health education:

- Shortage of physicians and providers in rural areas
- Low health literacy of residents
- Inadequate access to health insurance to cover medical appointments, medications and diabetes supplies
- Low incomes that result in deferring care for financial reasons
- Limited access to transportation to travel to appointments with primary or specialty care providers

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Factors influencing foregoing medical care amongst those with diabetes & (maybe) prediabetes

- Place-based disparities
 - Those that live in the South
 - Those that live in rural areas (vs urban areas)
- Those with lower incomes
- Those from several racial/ethnic groups
 - American Indian or Alaska Native
 - Black or African American

*** Int J Environ Res Public Health 2017, 14, 464

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Possible barriers to DPP in rural areas:

- Fewer DPP programs due to shortage of CDC recognized service providers
- Laborious process to maintain recognition – outcomes based (participation, weight loss)
- Newly reimbursable service by Medicare (2018) – “learning”
- A DPP lifestyle coach that leaves that position can result in the closure of the program
- Times of classes may not be convenient for the participants’ schedule (ex: agriculture families)
- Year-long program for participants may not be conducive for participation in many rural families’ schedules
- Transportation issues/distance to service

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Barriers to DPP in rural areas:

- Healthcare facilities and environment is intimidating to people
- “Independent nature” of people in rural areas – hardy, resilient, independent, wary of outsiders, private, loyal to neighbors ... ??? (note: this may or may not describe your local community)
- Culturally diverse populations
- Close-knit communities and privacy issues

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Montana Diabetes Prevention Program (DPP)



Lifestyle Skills



Physical Activity



Food Choices

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NDPP - Eligibility

- Be at least 18 years old AND
- Be overweight (body mass index ≥ 25 ; ≥ 23 if Asian) AND
- Have no previous diagnosis of type 1 or type 2 diabetes AND at least one of the risk factors below:
- Have a blood test result in the prediabetes range within the past year:
 - Hemoglobin A1C: 5.7%–6.4% or
 - Fasting plasma glucose: 100–125 mg/dL or
 - Two-hour plasma glucose (after a 75 gm glucose load): 140–199 mg/dL or
- Be previously diagnosed with gestational diabetes
- Score 5 or more on prediabetes screening test at doihaveprediabetes.org

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Montana DPP – Lifestyle Coaches

- Lifestyle Coaches
 - RN
 - Dietitian
 - CDE
 - exercise specialist, or other health professional with training and experience in nutrition and/or physical activity.
- Lifestyle coaches must attend at least one, 2-day lifestyle coach training, provided by a CDC approved training entity such as DTTAC or AADE.

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Montana DPP Outcomes

Total pounds lost (since 10/2015) = 39,182

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Participant Stories

Taking the class made me realize what I ate was making me what I was.

I learned that exercise is not a punishment. Now it feels like punishment when I have to miss my favorite exercise class.

I lost almost 50 pounds and I'm down from a size 20 to a size 12.

The best part? Knowing I did all of this for me!

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Participant Stories

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Provider Perspective

"What I like best is that it is a structured program. It is a defined program. People know what it is they will be doing. They know what it will cost them in time, effort, perhaps money. I think most people will find those are things they can do. They can get their hands around it and say ok if I follow this, I am going to be in better shape."

- Dr. Corsi, Physician Champion
(Missoula, Montana)



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Rural DPP site characteristics and strategies (Montana)

- Rural programs are typically housed in clinic/hospital setting
 - Provider connections and referrals
- Word of mouth is a valued marketing strategy
- Challenges include:
 - Limited exercise opportunities, but getting creative can solve this issue!
- Telehealth as a means to reach rural communities



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Montana Telehealth Studies

- Participants receiving the DPP remotely (n=256) are as successful in maintaining attendance, participating in physical activity, and achieving weight loss as those participating at an on-site (n=638) location.
 - No statistically significant differences among TH and OS participants in achievement of $\geq 5\%$ weight loss goal, 150 minute physical activity goal, and mean attendance.¹
- Between 2010 – 2015, 667 participants were enrolled in a study comparing outcomes between one Montana face-to-face urban site and 15 rural communities which received the DPP simultaneously via telehealth delivery.
 - The urban and rural interventions were comparable with 33.5% and 34.6% of participants achieving 7% weight loss, respectively.²

Vadheim et. al (2017). Telehealth delivery of the diabetes prevention program to rural communities. *Transl Behav Med*, 7(2):286-291 ¹

Clemens EL, Coon PJ, Coombs NC, et al. Intent-to-treat analysis of a simultaneous multisite telehealth diabetes prevention program. *BMI Open Diab Res Care* 2018;6:e000515. doi:10.1136/bmjdr-2018-000515 ²



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Telehealth Logistics

- Technology – telemed equipment (Polycom) or web based
- Web-based telehealth
 - WebEx
 - DPP is considered education – HIPAA is not relevant
- Telehealth (TH) can be delivered simultaneously with the on-site (OS) group or as stand-alone delivery
- Selecting the telehealth site
 - Access to appropriate technology, meeting space, establish service agreement with facility and TH site coordinator.

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Telehealth Site Coordinator

- Room reservations and set-up
- Minimal technology management
- Weigh participants at start of class
- Collect previous week's food and PA trackers and distribute class session materials
- Mail food/PA trackers to coach
- Assist with TH participant engagement and group discussions

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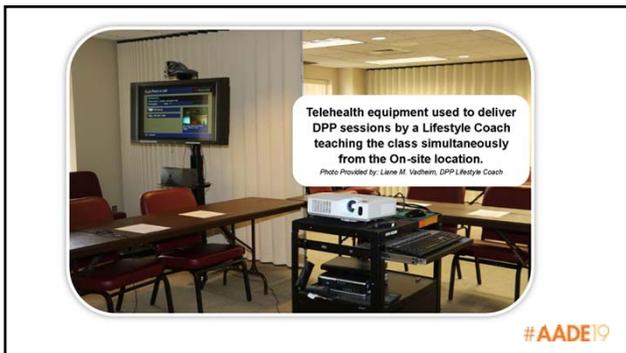
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Telehealth Delivery

- Helpful if coach can make an in-person visit to TH location
- TH site - Place camera so the coach can see the entire TH group on the monitor
- OS - Place camera so TH site can see the slide presentation as well as the coach
- Be careful with visuals (i.e. food examples)
- Schedule time for TH site to have its own group discussion and then share with the OS group
- Technology problems happen, have a backup plan – hardcopies of PPT, ability to FT, cell numbers

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Telehealth Challenges

- Lack of personal contact between telehealth participants and coach
- Community buy-in
- Technology

Source: Vadheim, L. (2016, Dec 13). Using Telehealth to Deliver Diabetes Prevention Programs. A webinar for Clinicians & Administrators Interested in Reaching People with Prediabetes in Rural and Frontier Areas. <https://hrsaseminar.adobeconnect.com/p5q04041j7/7launcher=false&fcsContent=true&gbMode=normal>

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Implications of Telehealth Delivery

- May ↑ geographic access to DPP ¹
- May allow large number of participants at the same time ¹
- May improve cost effectiveness of delivering DPP ¹
- Could reduce participant travel cost ¹
- Reduce barriers to accessing the DPP in remote/rural areas where there can be a shortage of team-based obesity, diabetes and self-management support services²

Vadheim et al. (2017). Telehealth delivery of the diabetes prevention program to rural communities. *Transl Behav Med*, 7(3), 286-291. ¹
 Cammins EL, Coon PJ, Coombs NC, et al. Intent-to-treat analysis of a simultaneous multisite telehealth diabetes prevention program. *BMJ Open Diab Res Care* 2018;6:e000515. doi:10.1136/bmjrc-2018-000515 ²

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The 'rural patient experience' – providing a DPP program in rural areas of need and what works:

- Find resources that target the needs of low-income populations – poverty in rural areas is a huge challenge
- For culturally diverse populations, employ bilingual and/or culturally competent staff
- Provide education appropriate to age, culture, and literacy level
- Possibly create an advisory or stakeholder group that represents the diversity of the community

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Engaging Rural Providers

- Establish personal rapport with providers
- Meet with them in a convenient manner
 - 1:1 meeting
 - Board meetings
 - Morning team meetings
- Invite them to speak to the class
- Close the referral loop – provide patient updates

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Recruiting Rural Participants

- Word of mouth is the big one!
- Provider referrals
- Utilize EMRs when possible
- “DPP prescription pad” in exam rooms
- Community newspaper ads
- Flyers – post office, senior centers, provider’s office, grocery store, library
- Radio

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Retaining Rural Participants

- Invite a spouse/partner
- Culturally relevant
- Friendly competitions
- Raffle drawings each session
- Host guided exercise sessions or create access to an exercise space all year
- Assess a potential participant's readiness to change
 - Confidence and motivation around the areas of physical activity and nutrition

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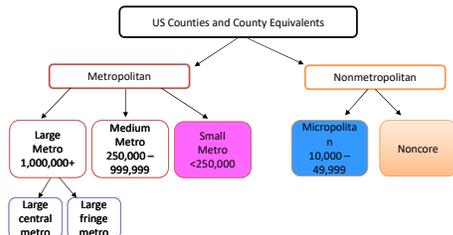
Rural vs Urban DPP Outcomes – MT

Study objective: To identify differences in outcomes and participation by location - in urban versus rural settings in the MT DPP

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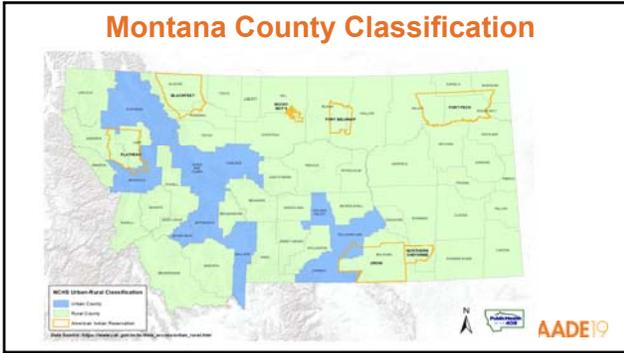
NCHS Urban-Rural Classification Scheme*



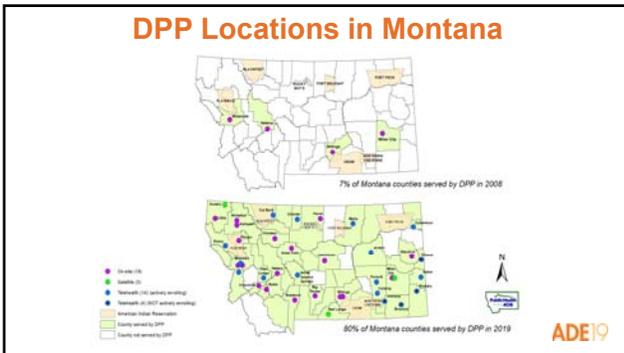
* http://www.cdc.gov/nchs/data/series/sr_02/sr02_166.pdf

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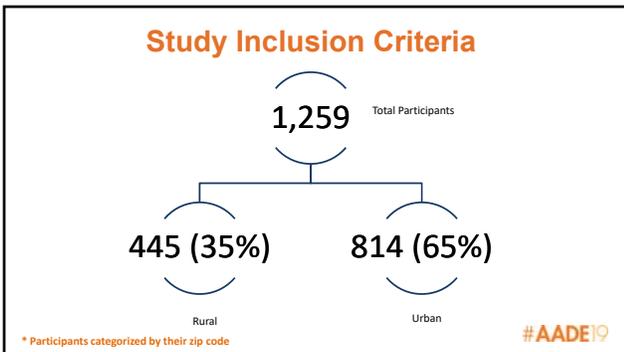
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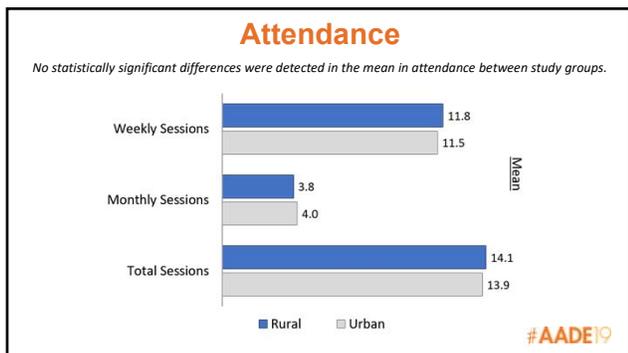
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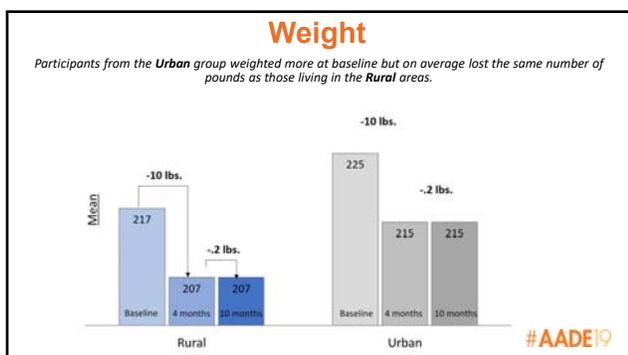
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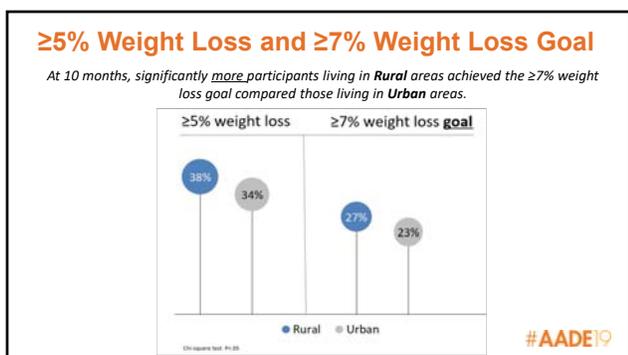
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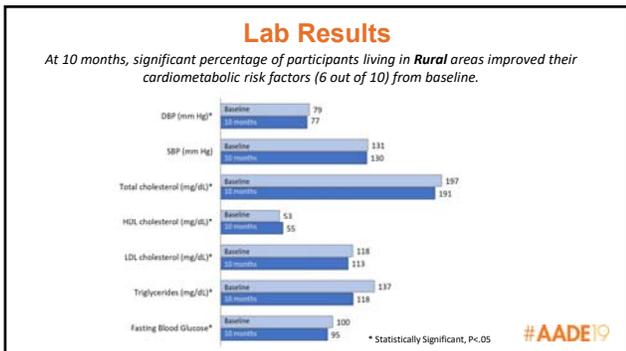
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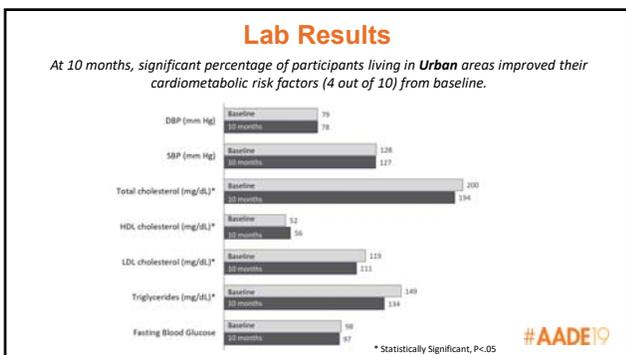
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Factors Associated with Achieving ≥7% Weight Loss Goal

The Logistic Regression Model showed that participants who **Self-Monitored Fat** for at least 14 weeks and met the **Physical Activity Goal** were *more likely to achieve the 7% weight loss goal.*



- Self-monitored fat for 14+ weeks
- At least 150 minutes of physical activity per week

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DPP in rural settings- implications for implementation:

- It's happening/can be done!
- Participants are successful
- Opportunity for innovation in program delivery
 - Maximize marketing via word of mouth
 - Partner with your providers and gain champions
 - Look for opportunities to find alternative physical activity
 - Utilize the 'strengths' of rural individuals and communities

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Thank you! [Marci Butcher, RD, CDE - Montana DPHHS](mailto:marci.butcher@mt.gov)
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