

Title A 5 Year Update from the Heart of New Ulm Project: Changes in Cardiovascular Risk and Program Evaluation Outcomes after 5 Years of Implementation of a Population-Based Program to Reduce Cardiovascular Disease

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Abstract

Objective or Hypothesis: The Heart of New Ulm (HONU) Project is a population-based project with healthcare, community, and workplace interventions addressing multiple levels of the social-ecological model, designed to reduce modifiable CVD risk factors in rural New Ulm, Minnesota. The presentation purpose is to provide a comprehensive 5-year update on project outcomes. This presentation will answer the following questions:

- How have CVD risk factors changed in the community?
- How do these changes compare to national trends?
- Is participation in HONU programs associated with CVD risk factor improvement?
- How has the environment changed in New Ulm?

Population: HONU interventions are open to the community; however, the priority population includes those age 40-79 residing in the 56073 ZIP code with a total population of 16,759, and 7,855 adult residents age 40-79 years (2010 Census). One health system serves the community, enabling the use of electronic health record (EHR) data for surveillance.

Methods:

- To examine changes in CVD risk factors over 5 years, EHR data was extracted at baseline (2008-2009) and two follow-up periods (2010-2011, 2012-2013) for residents age 40-79. Generalized estimating equations were used to fit longitudinal models of the risk factors. Data trends were compared to a demographically similar sub-sample of NHANES data.
- To examine how changes in blood pressure (BP) are associated with self-reported participation in a variety of HONU programs we used Heart Health Screening data collected in 2009 and 2011 for 1,446 residents age 40-79. Primary outcome was BP control (<140/90) in 2011. Predictor was HONU program participation examined by category and number. Regression models adjusting for several covariates were run.
- To examine environmental changes we used descriptive data from restaurant assessments, farmer's markets, and changes in the community related to physical activity opportunities and engagement.

Main Results:

- The prevalence of at-goal BP (<140/90mmHg) and LDL-C (<130mg/dl) increased from 79.3% to 86.4% and 68.9% to 71.1%, respectively with the largest reductions in BP and LDL-C seen in individuals not at goal at baseline. BP and lipid-lowering medication use increased from 41.8% to 44.0% and 25.3% to 29.1%, respectively. The proportion at-goal for glucose increased from 46.9% to 48.2%. The prevalence BMI <30 (55%) did not change, while the proportion at-goal for HDL decreased from 63.8% to 58%, and smoking showed an increase from 11.3% to 13.6%.
- In a separate study, residents with uncontrolled baseline BP who participated in HONU programs were at least 2 times more likely to achieve controlled blood pressure at 2 years, than those who didn't participate in HONU programs.
- Environmental improvements are identified in physical activity opportunities, engagement, healthy offerings at restaurants, and policies promoting physical activity.

Conclusions: In a community participating in a multifaceted, population-based project aimed at reducing modifiable CVD risk factors, significant improvements in BP, LDL-C, and glucose were observed over 5 years, and BMI remained stable in a state where obesity increased. These changes compare favorably to national trends. Additionally, participation in HONU programs was associated with improved CVD risk factors and environmental improvements were documented in the community.

IRB Approval **OR IRB Exemption** Note that I will be presenting data that falls under several IRB applications some are approved and some were exemptions.

HIPAA Compliance **Funding Sources** The Heart of New Ulm Project was primarily funded by Allina Health with some additional funding from grants from United Health Foundation, a CDC Community Transformational grant, and the USDA Farmers Market Program.