

# The Heart of New Ulm Project: Community Systems Model of Prevention Shows Early Indications of Reducing Event and Mortality Rates of Acute Myocardial Infarction



Center for Healthcare  
Innovation

New Ulm Medical Center



Creating a world without heart disease™

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## Background

- Community interventions have shown limited success in reducing population level CHD
- The Hearts Beat Back: The Heart of New Ulm Project recently implemented a systems model of prevention that integrates environmental, peer leadership, and individual interventions across multiple segments of a rural Minnesota community including the healthcare system, worksites, and the general community
- See more at: [www.heartsbeatback.org](http://www.heartsbeatback.org)

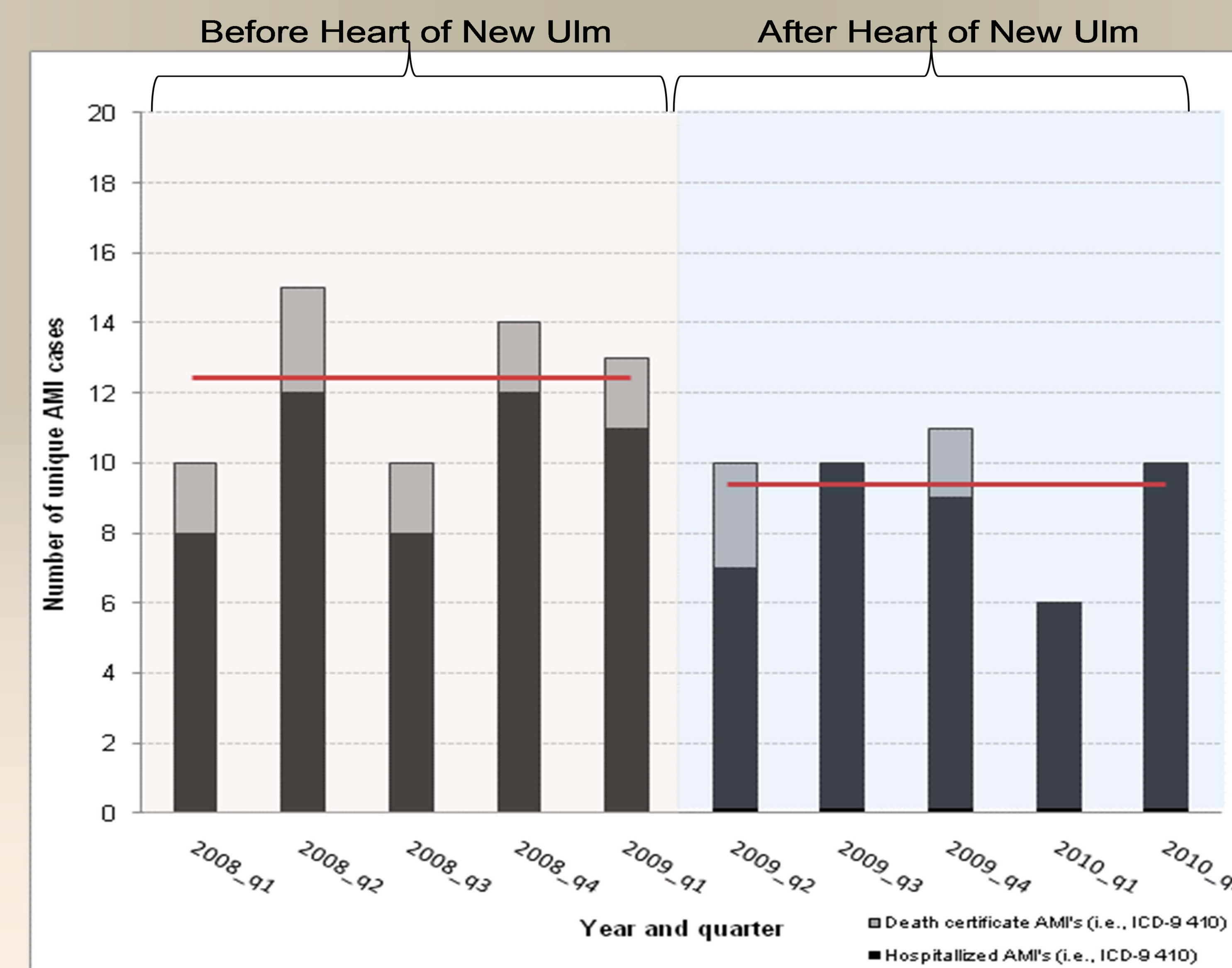
## Methods

- Pre-post quality improvement analysis
- Outcome was the absolute number of unique AMI's (incident and recurrent) over 10 quarterly periods between Jan 2008 – Jun 2010
- First 5 quarters represented baseline (ie, before active project interventions began) and the last 5 quarters represented follow-up (ie, after project interventions began)
- Sampling frame included all residents of the 56073 zip code age ≥18 years (N≈10,000)
- Both fatal and non-fatal AMIs recorded via an electronic surveillance system that screened for ICD-9 code 410 in death certificate and hospital discharge data

## Results

- Graphical descriptive analysis indicated a 24% reduction in mean number of AMIs in the last 5 quarters compared to the first 5 quarters of surveillance
- A crude chi-square analysis found a modest trend toward a statistically significant difference in the proportion of AMI cases between baseline and follow-up time periods (62/10,000 vs. 47/10,000; p=0.15)
- No fatal AMIs in 3 of the last 5 quarters, but several fatal AMIs in each of the first 5 quarters

Figure. Fatal and non-fatal acute myocardial infarctions (AMI) among 56073 residents, by quarter, from January 2008 through July 2010.



Source: Allina hospital/clinic administrative data.

## Conclusions

- A preliminary quality improvement analysis suggested a reduction in the frequency of AMIs that occur among 56073 zip code residents
- Limitations included a simplified statistical analysis, lack of a control community, and an imprecise at-risk population denominator
- More robust, updated statistical analyses are currently planned to confirm the observed trends in New Ulm and how they compare to other communities in the region
- It is not clear yet how this reduction may correlate with systems-based interventions used in the Heart of New Ulm Project
- If corroborated, the Heart of New Ulm Project may serve as a model of how healthcare systems can implement population-based CHD prevention programs to improve associated healthcare costs, quality, and patient experiences in the communities they serve

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