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CENTER FOR IMPROVING
VALUE IN HEALTH CARE

Small Intervention, Big Impact:

Health Care Cost Reductions Related to Medically Tailored Nutrition





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Preparing and delivering medically tailored meals since 1991



Nutrition impacts health...but what about costs?

- 68% report improved adherence to their health plan
- 70% report better able to afford their basic needs
- 67% report able to remain independent in their home
- 73% report improved quality of life

From there to here...

- How can we quantify the impact of medically tailored meals?
- How to fund a large-scale study?

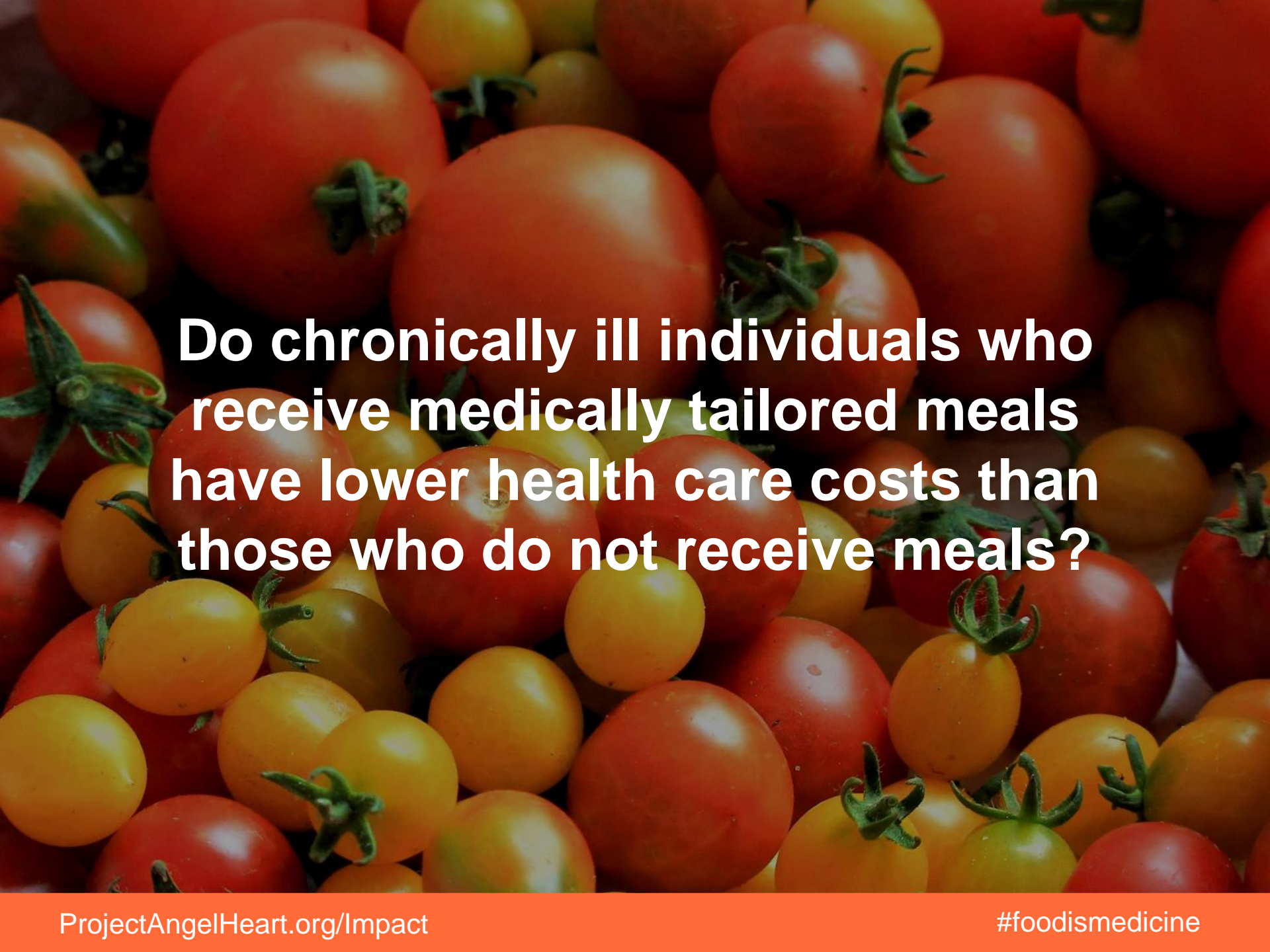
... with the right partners

- CIVHC
- Scholarship funding to access APCD
- & many others!





Does providing medically tailored meals impact health care costs for chronically ill individuals?



Do chronically ill individuals who receive medically tailored meals have lower health care costs than those who do not receive meals?

Methodology: Definitions

- **Pre-intervention period** - 6 months prior to start date of intervention
- **Intervention period** - defined by service dates provided by PAH.
 - Service breaks < 30 days breaks were considered continuous service, breaks >2 months and < 5 months were removed from the analysis. Breaks of >6 months were considered a new service period.
- **Post-intervention period** - 6 months after the service end date, no later than 12/31/2013.

Methodology: Cohort Parameters

To be included in the analysis, clients had to:

- Be matched to claims in the CO All Payer Claims Database.
- Have non-zero dollar claims for >50% of each period (pre-, post-, or intervention).
- Be eligible for coverage for > 1 month of each period (pre-, post-, or intervention).
- Have both a start and end date for services.
- Have >3 weeks and < 2 years of service.
- If deceased, have a single resolvable death date.

Resulting in 708 total included clients



Methodology: Assumptions

- Line of Business or type of insurance was determined by the type of coverage on the first day of service.
- Age was determined at the start of the intervention period.
- Primary disease was determined by the client at enrollment, not the claims.
- Cost inflation was not taken into account.

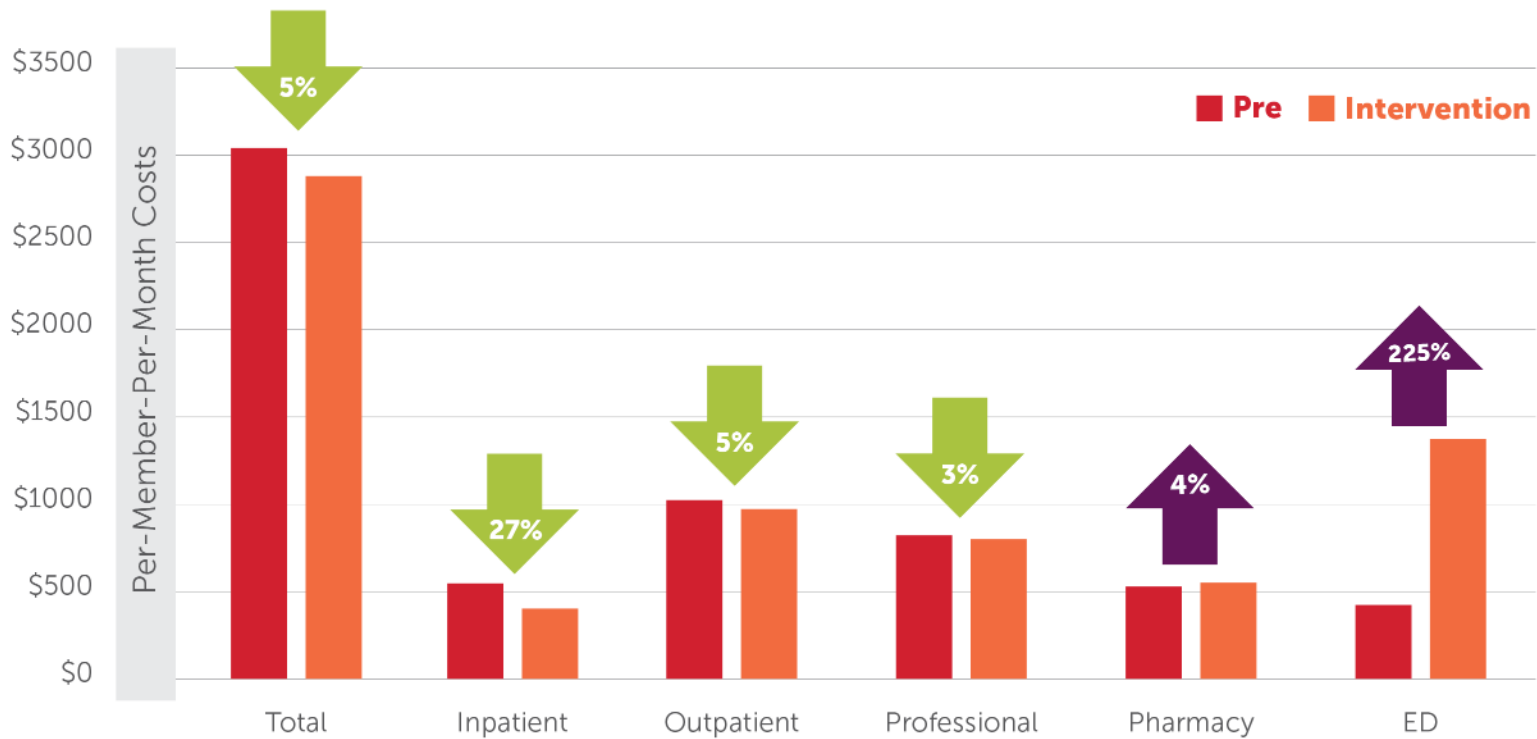
Note: PAH services are frequently initiated at or an acute exacerbation for many clients. This may have increased the pre-intervention costs for the intervention group over what clients' "typical" costs would have been.

Methodology: Analysis

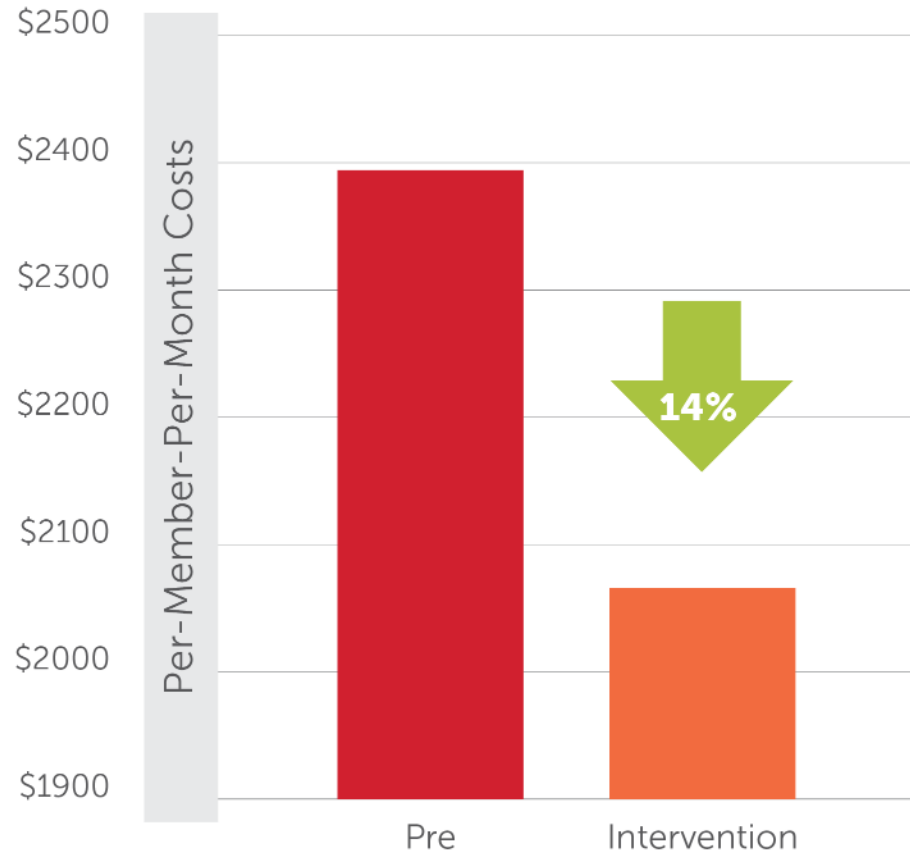
- Client information was stripped from the data.
- Claims for each client were analyzed by interval for utilization and cost.
- Findings were summed by Line of Business and by primary disease.
- Findings were reported by disease, line of business, and service line (inpatient, outpatient, professional, emergency department, and pharmacy).
- Findings were compared pre-period to intervention period, and pre-period to post-period to determine significance.



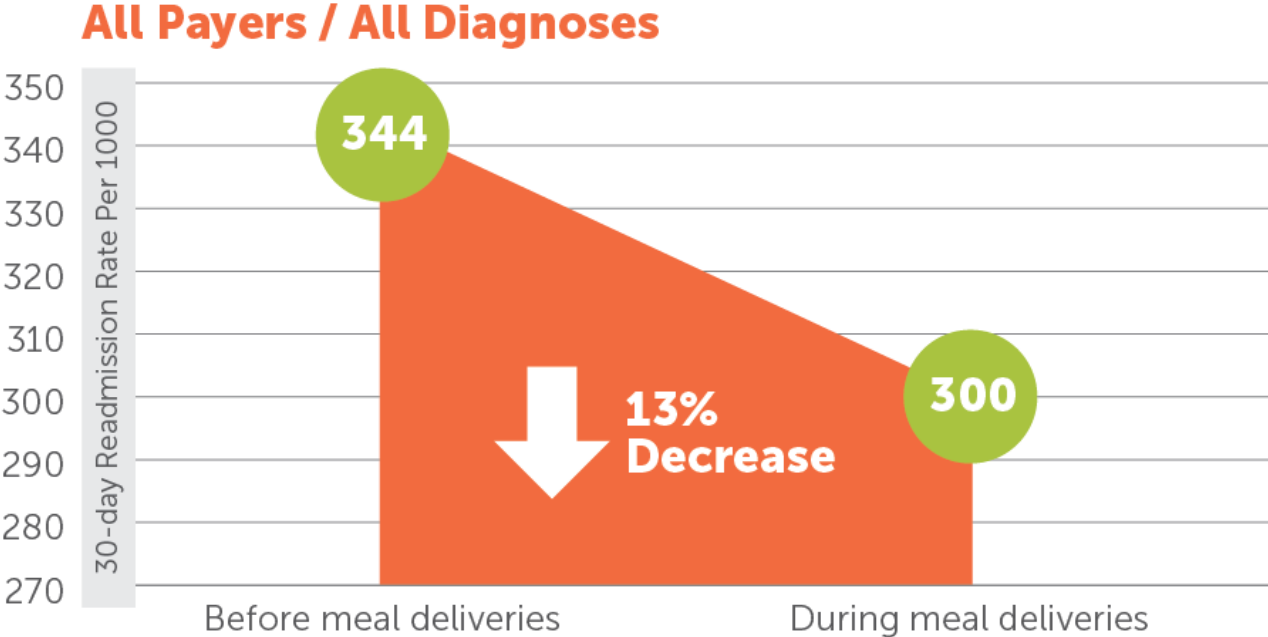
Overall trend toward decreased health care costs



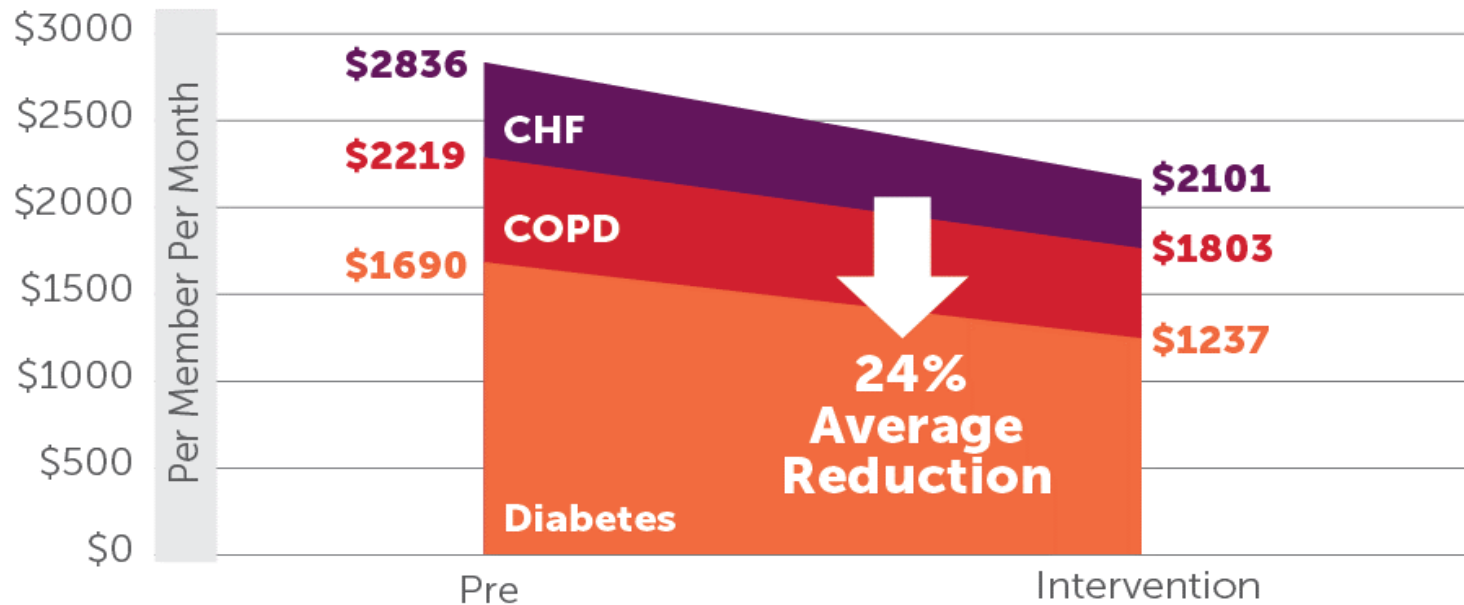
Decreased total medical costs for meal recipients on Medicare



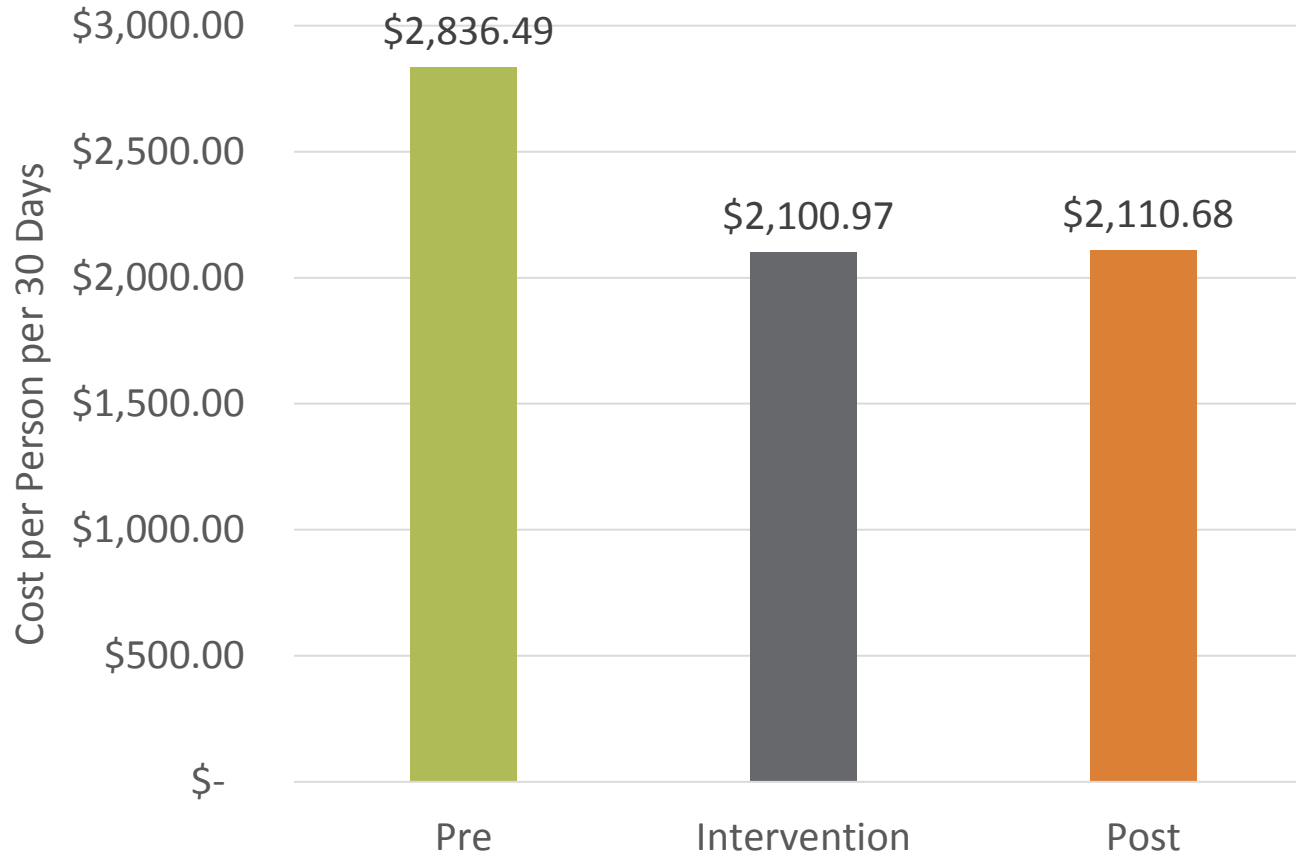
13% decrease in rate of 30-day, all-cause readmissions



Significant cost reductions for CHF, COPD, diabetes



CHF – All payers

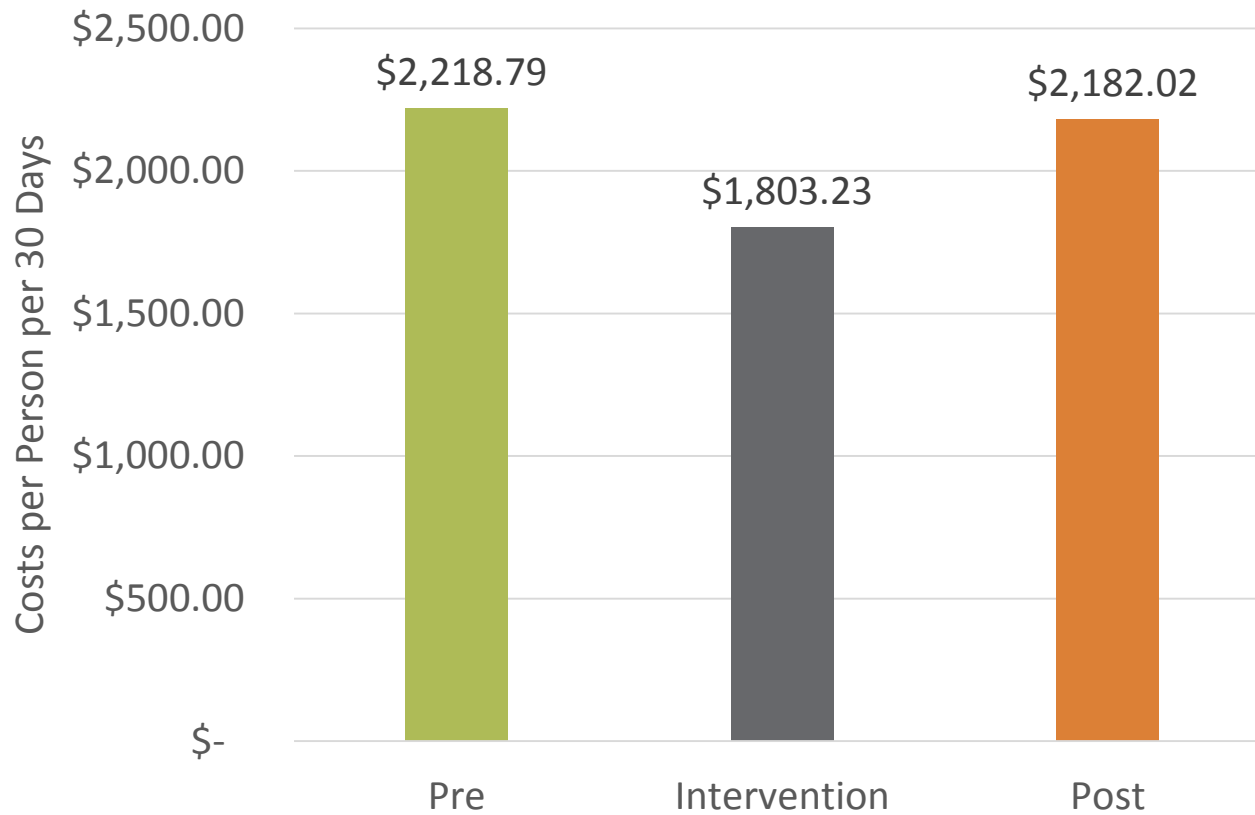


p-value

Pre to Intervention	0.0000
Pre to Post	0.0002



COPD – All payers

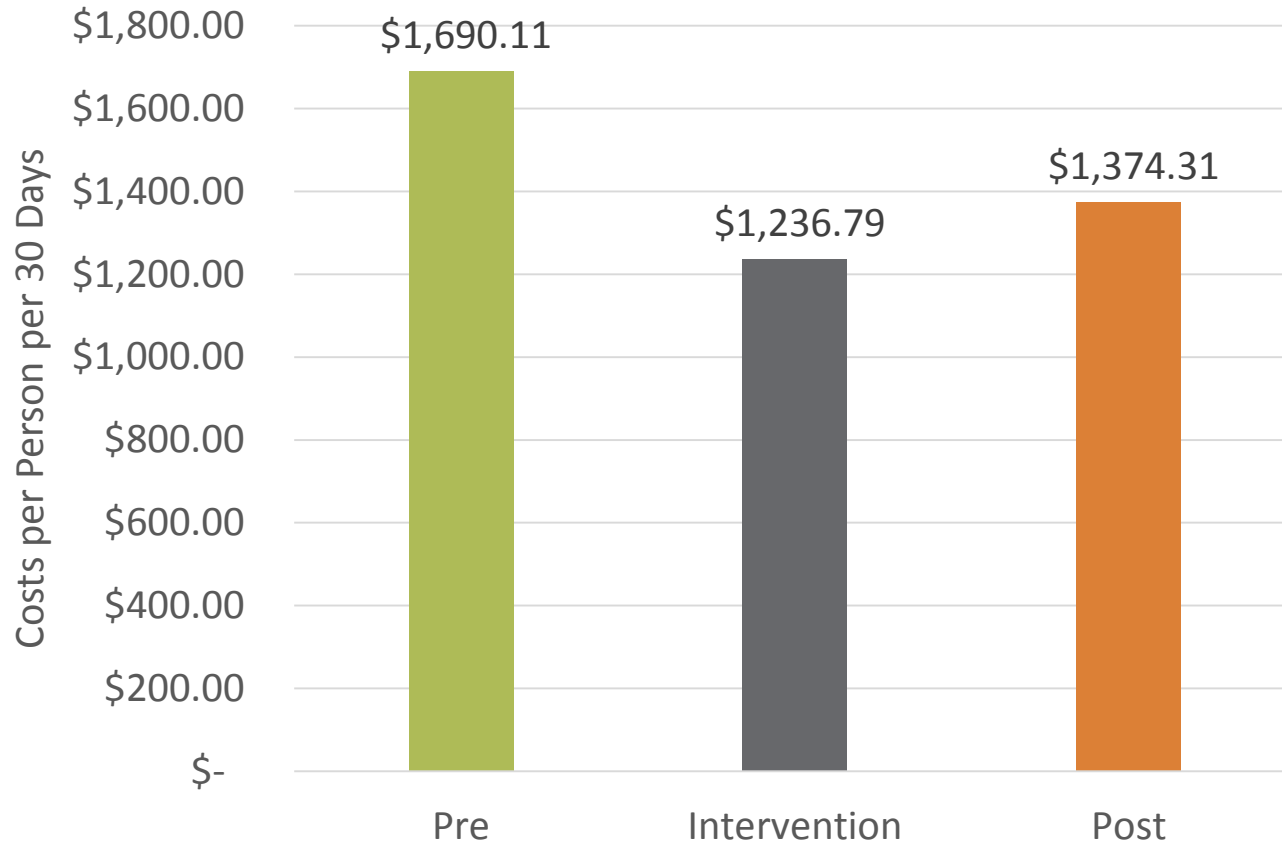


p-value

Pre to Intervention	0.0037
Pre to Post	0.4282



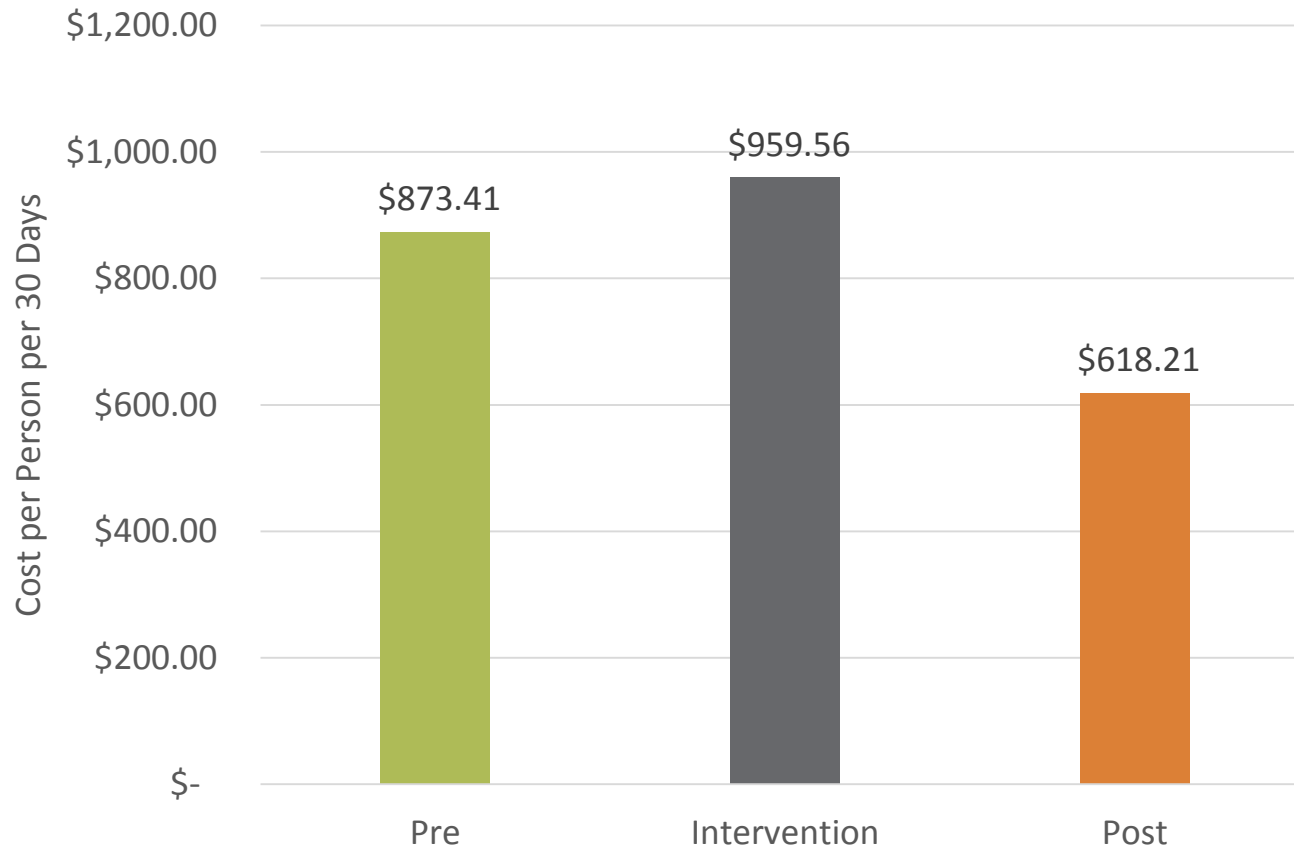
Diabetes – All payers



p-value	
Pre to Intervention	0.0021
Pre to Post	0.0279



HIV - Medicaid



p-value	
Pre to Intervention	0.2971
Pre to Post	0.0380



Next Steps

- ✓ Integrate HDM into health care delivery & payment models
- ✓ Capitalize on CMS supplemental benefits ruling for Medicare Advantage plans
- ✓ Broaden HDM benefits in CO Medicaid HCBS waivers



Study limitations

- Primary disease was identified by client, not by claims.
- No controlling for severity of primary disease or comorbidities.
 - This poses a significant issue for cancer analyses.
- Most clients had at least some \$0 claims, which change the cost and utilization interpretation.
 - All majority \$0 cost claims were eliminated.
- No mechanism for verifying meal consumption.
- No tracking of over the counter or cash pay expenses.
- We did not adjust for cost inflation over the course of the study.



Next Steps

This study represents a critical first step in defining the financial return on investment from providing medically tailored meals to the chronically ill.

- Next steps could include:
 - Detailed analysis of impact on cancers.
 - Detailed analysis of ESRD patients across payers.
 - Confirmation of client identified primary disease, and identification of comorbidity severity.
 - In depth analysis of the types of diets provided.
 - Prospective analysis to allow for increased information around adherence and to incorporate patient outcomes.

