

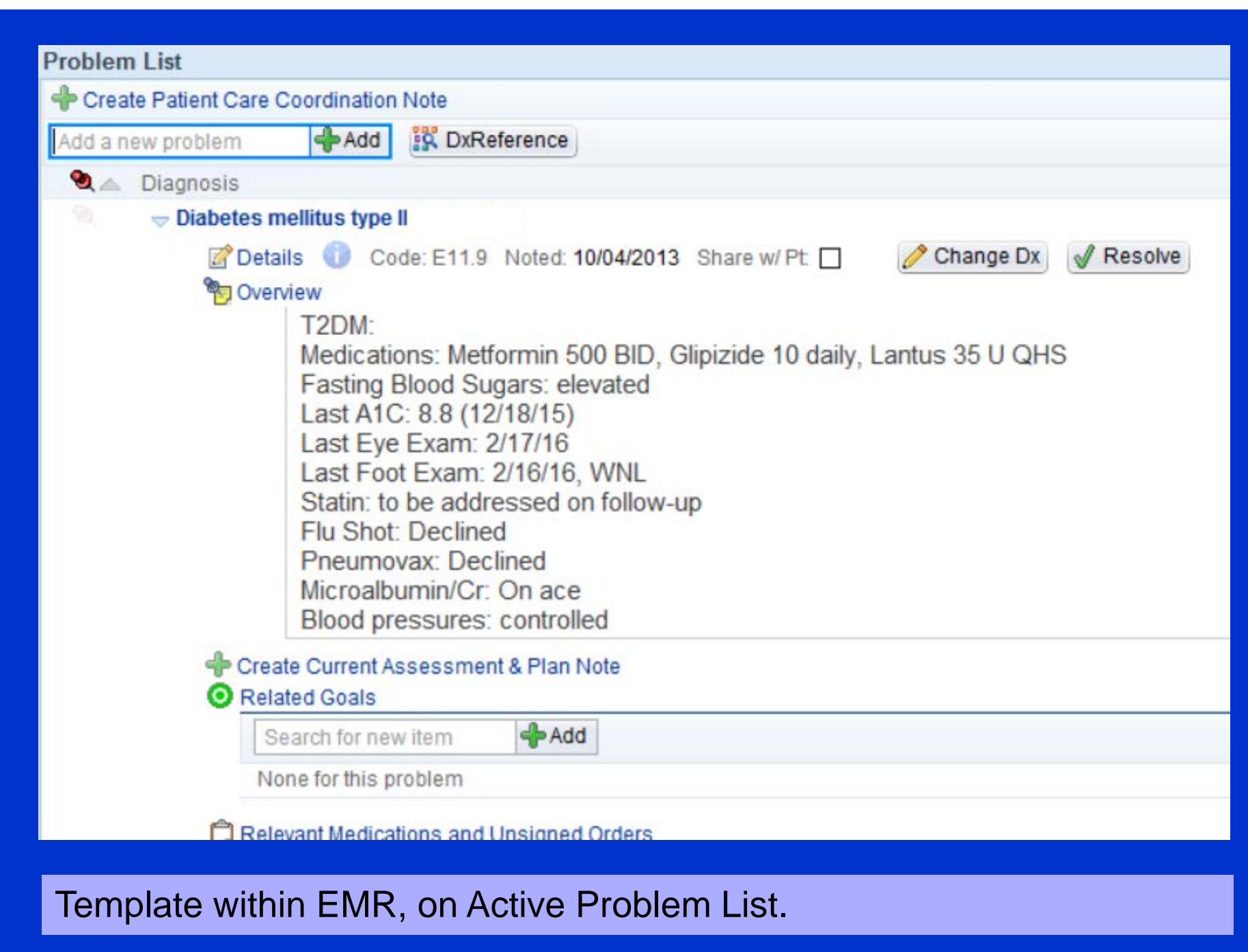


## BACKGROUND

- In 2012, 29.1 million Americans, or 9.3% of the population, had diabetes mellitus.
- The complications of diabetes are numerous and include: myocardial infarction, stroke, nephropathy, retinopathy, neuropathy, wound infections/amputation, and increased susceptibility to and complications from infections.
- Physicians managing Type 2 Diabetes (T2DM) and its numerous complications in the clinic setting have to organize and act on disparate information over the longitudinal course of multiple clinic visits.
- The advent of electronic medical records (EMR) provides the opportunity to improve quality of care to patients, by specifically organizing disparate information.
- Purpose:** This quality improvement project assesses implementation of an EMR template to improve adherence to American Diabetic Association (ADA) Guidelines in management of Type 2 Diabetes.

## METHODS

- At the onset of the project, the provider patient panel was reviewed over the preceding year for compliance with treatment guidelines. Areas of deficiency were designated as targets of improvement.
  - diabetic foot exam
  - vaccine counseling and administration
  - diabetic eye exam referral
- Subsequently, a clinic visit template was developed that addressed these designated targets as well as general treatment guidelines for T2DM.
- During the following year, the template was used during each patient clinic visit addressing T2DM. The template was saved under the patient's active problem list to facilitate longitudinal care.
- At the end of the year, data on compliance with treatment guidelines was collected and analyzed. Percent compliance was compared between the year preceding and the year following template implementation. Two proportion test was used to calculate statistical significance.
- N=36 pre-implementation & N=56 post-implementation

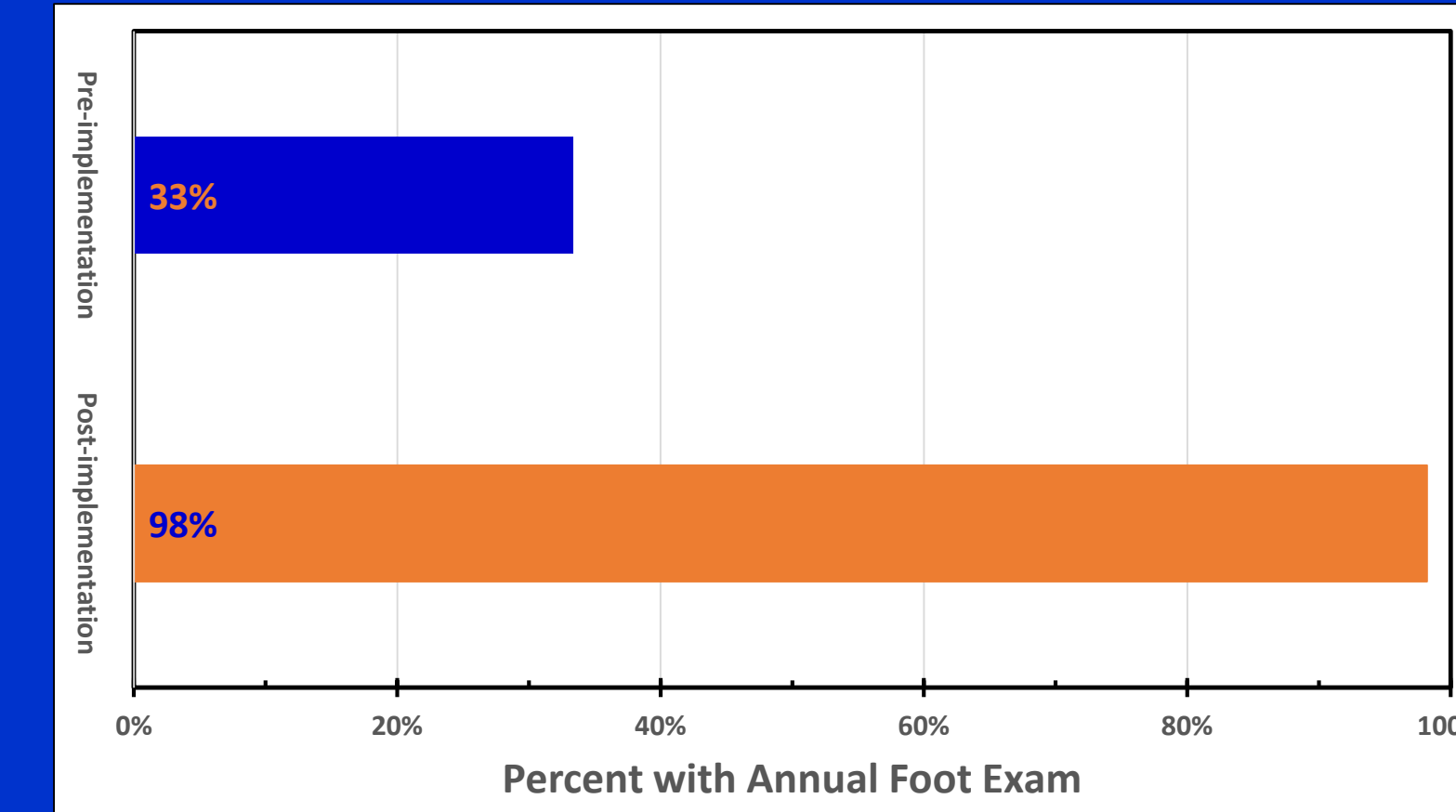


## RESULTS

- The areas targeted for improvement; diabetic foot exam, ophthalmologic exam referral, and vaccination counselling; showed the greatest improvement.

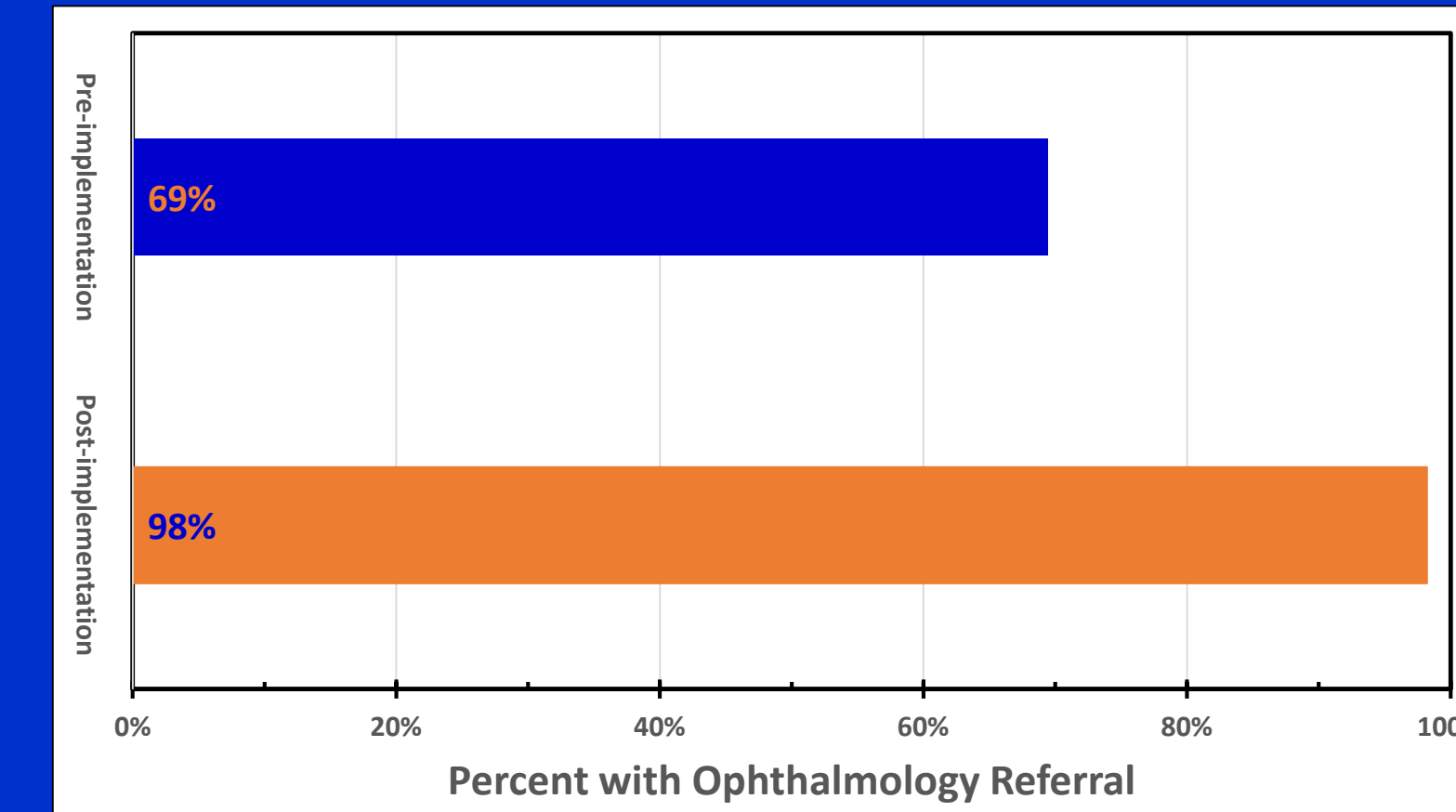
**Diabetic Foot Exam:**

- Largest improvement
- Increase from 33% to 98% (p-value 0.00)



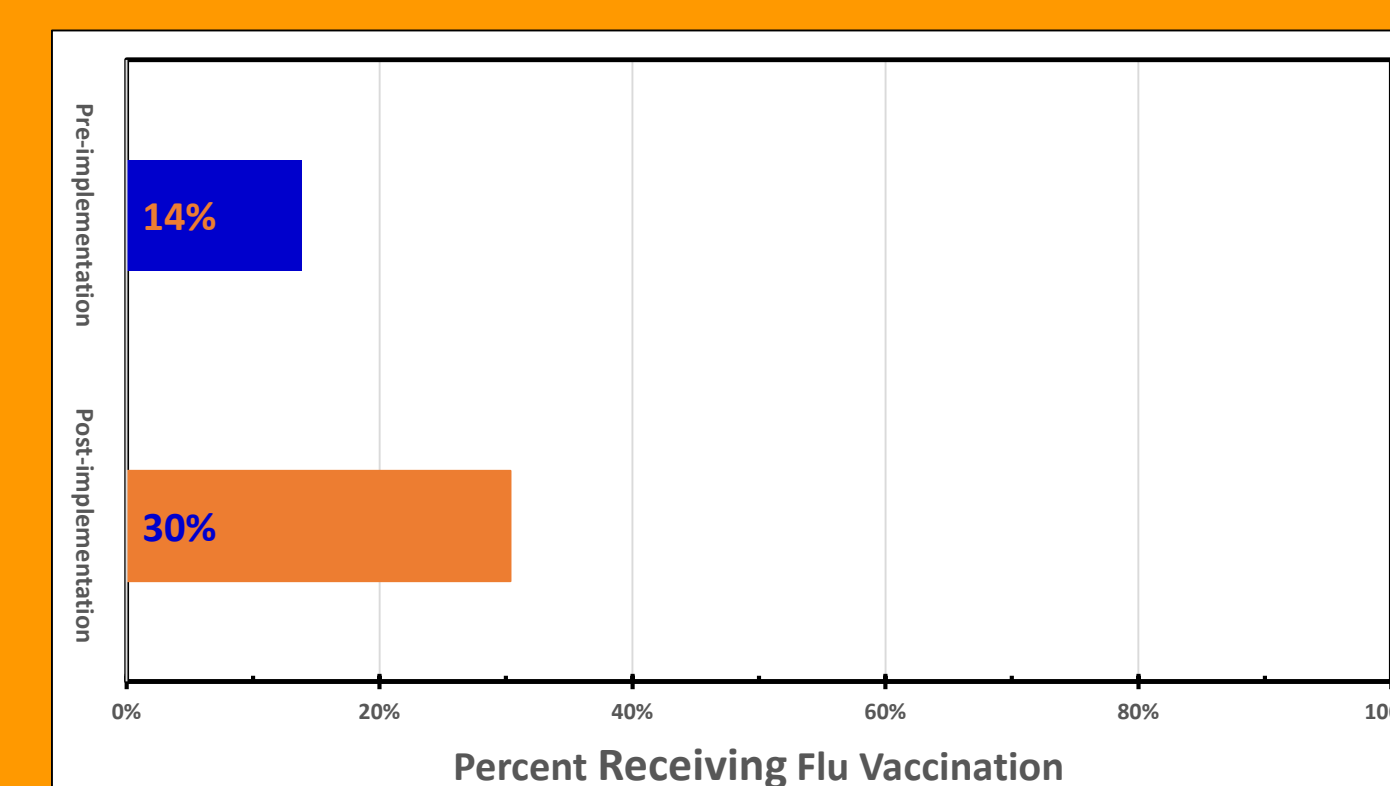
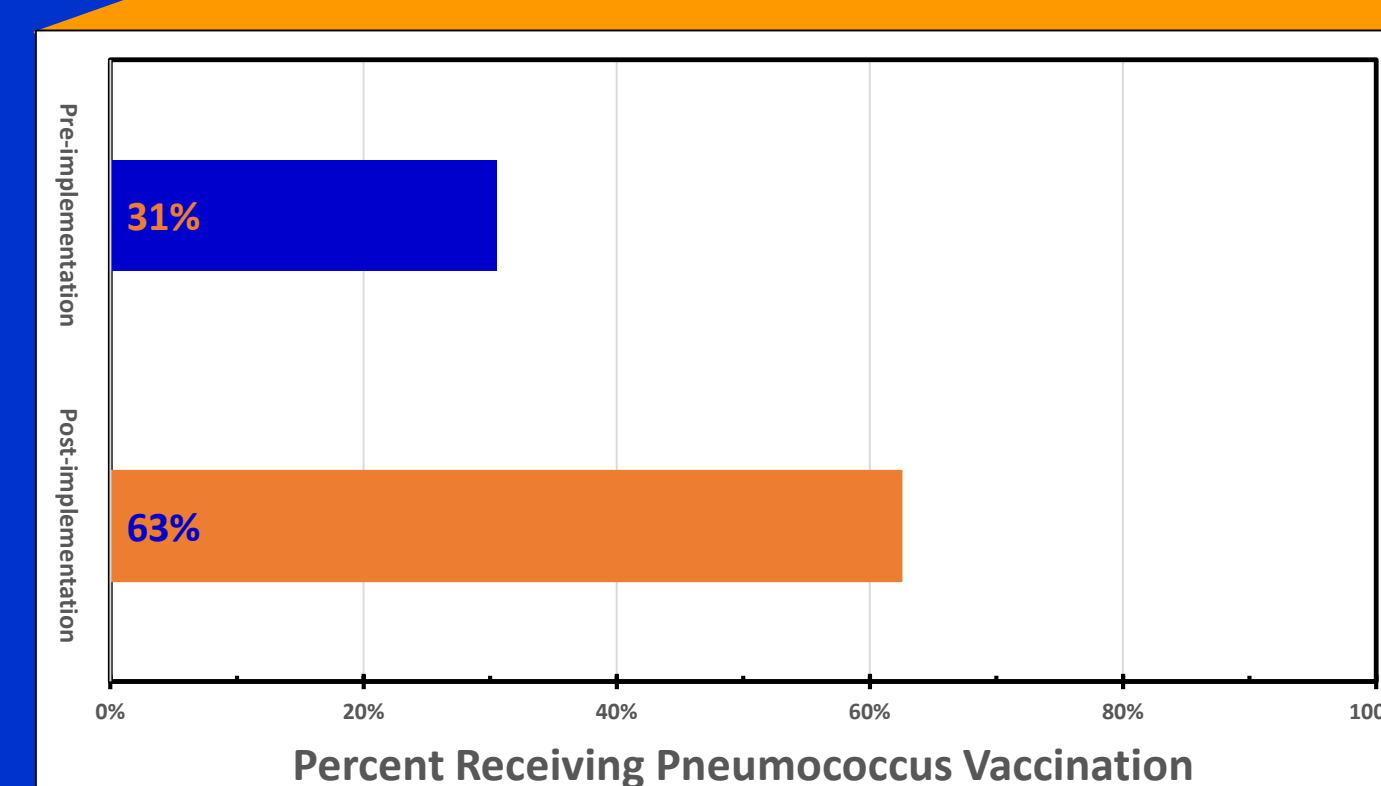
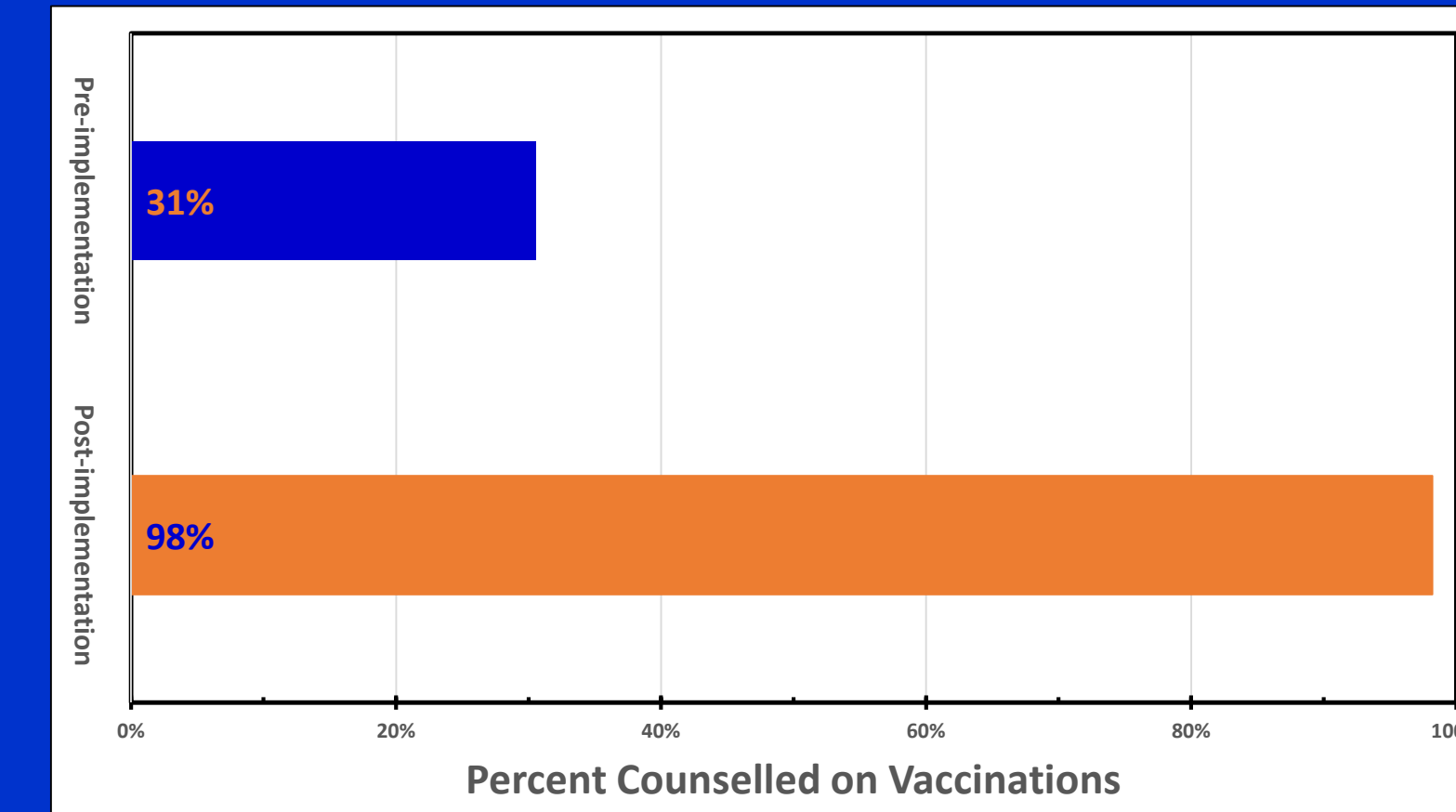
**Ophthalmologic Exam Referral:**

- Increase from 69% to 98% (p-value 0.00)



**Vaccination Counselling & Administration:**

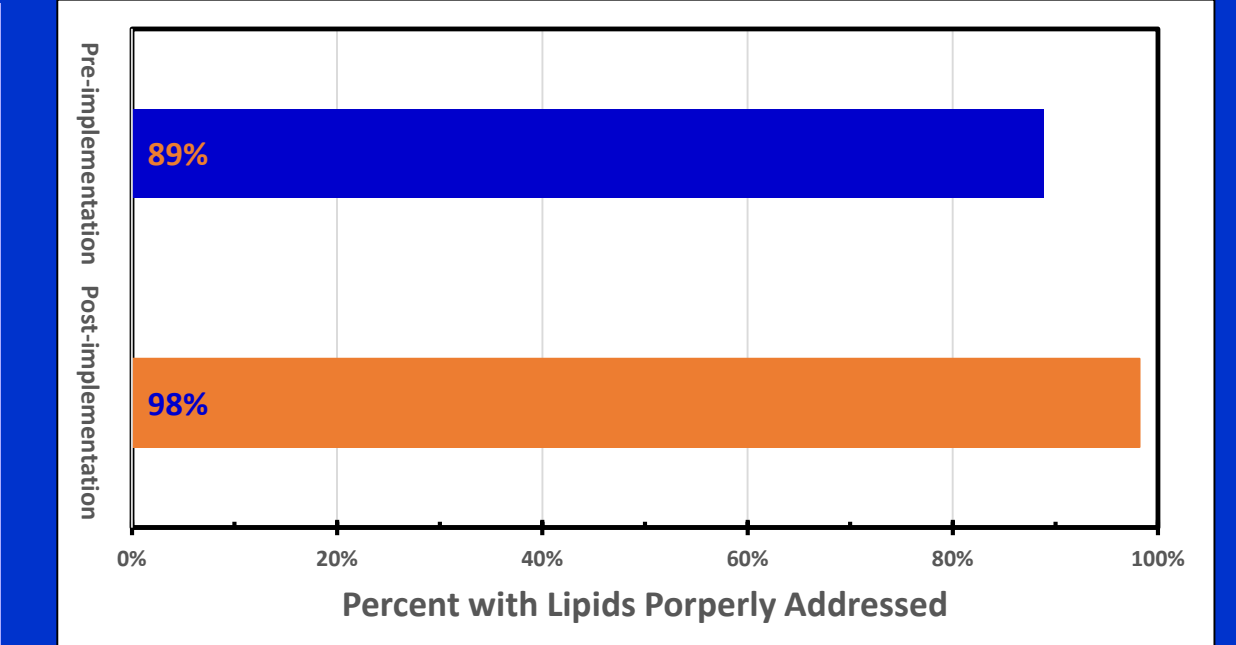
- Increase in vaccination counselling from 31% to 98% (p-value 0.00)
- Doubling of Pneumococcal vaccination from 31% to 63% (p-value 0.00)
- Doubling of Influenza vaccination from 14% to 30% (p-value 0.07) - + trend



- Other areas assessed had fairly good pre-implementation compliance but did show improvement:

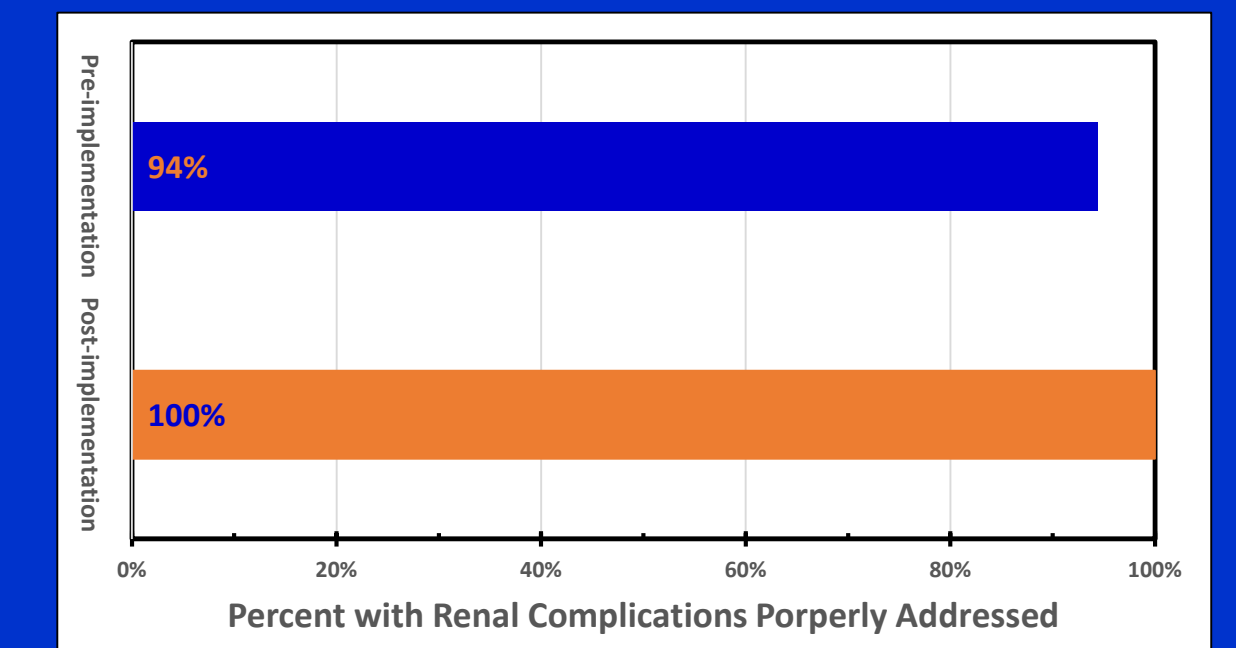
### Lipid Management:

- There was a change in guidelines from 2014-2015
- Outcome was measured by compliance with the "then current" guideline.
- Improvement trend from 88% to 98% (p-value 0.054)



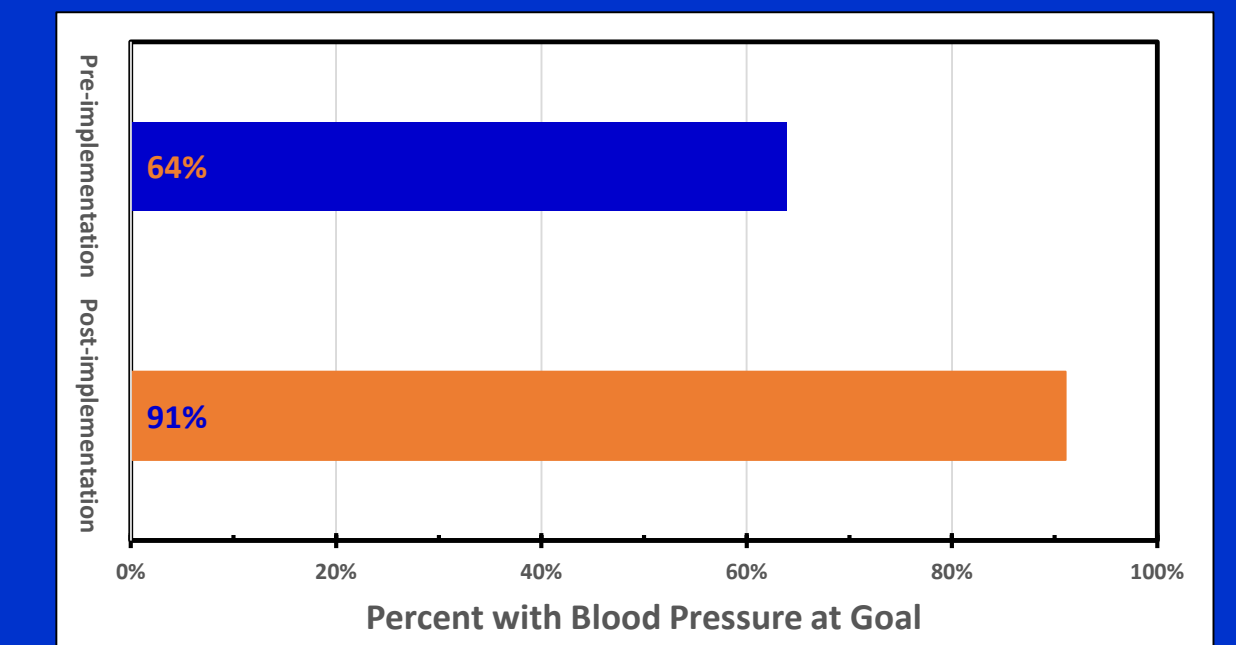
### Renal Disease Prevention/Management:

- Screening for albuminuria or treatment with ACE/ARB
- Improvement trend from 94% to 100% (p-value 0.07)



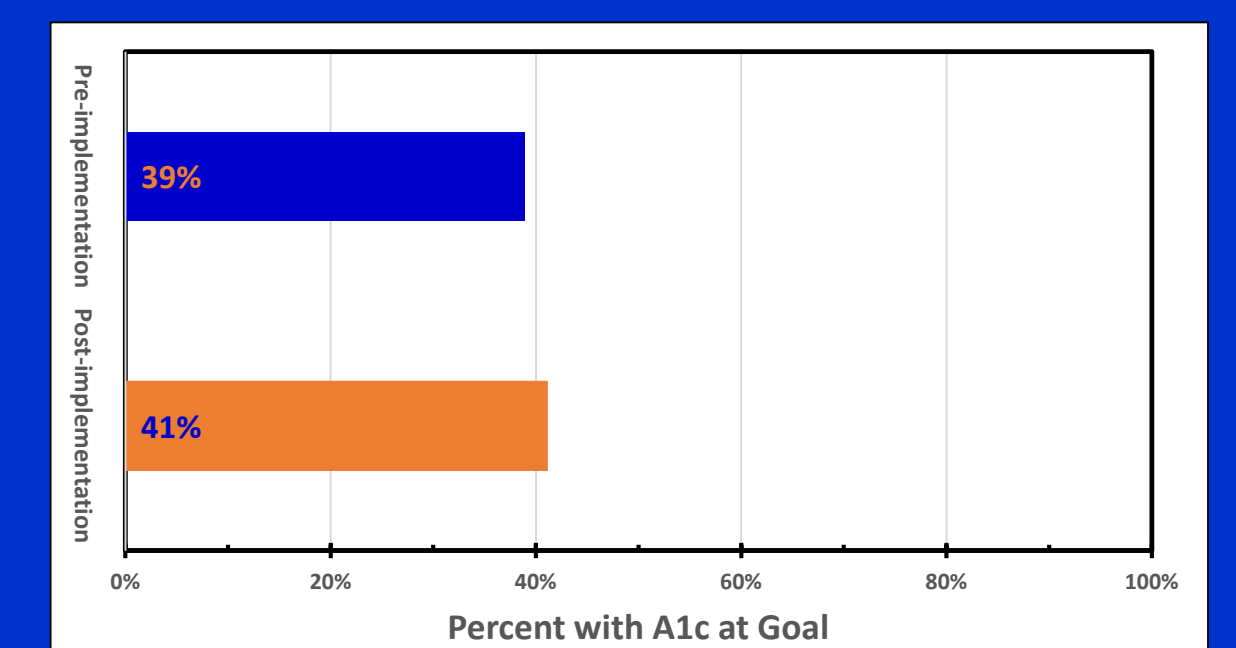
### Blood Pressure Monitoring:

- 100% compliance with blood pressure screening at every visit pre and post-implementation (no change)
- Improvement in blood pressure control (<140/90) from 63% to 91% (p-value 0.00)



### Hemoglobin A1c Measurement:

- 100% compliance with HbA1C measurement pre and post implementation (no change)
- No improvement in HbA1c control (<7) from 39% to 41% (p-value = 0.83)



## CONCLUSIONS

- This project demonstrates that the use of EMR-based templates can help improve the delivery of care, by organizing disparate information in the management of chronic conditions.
- There were notable improvements in diabetic foot exams, diabetic eye exam referrals, and vaccination counselling and administration.
- Additionally, areas not targeted for improvement showed some improvement, most notably blood pressure control.
- There were areas of deficiency that can be targeted for further improvement including vaccination compliance and meeting target Hemoglobin A1c.
- This quality improvement project provides a framework for improving quality of care in a patient population that can be applied to other chronic medical conditions.