Effective Lipid Management According to American College of Cardiology/American Heart Association (ACC/AHA) Guidelines in a Primary Care Clinic

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Background

National Problem:

- Atherosclerotic Cardiovascular Disease (ASCVD) is leading cause of death for men and women in the U.S.[3]
- 1 in 4 deaths are due to heart disease[3]
- Elevations in lipids double risk for heart disease[3]
- 71 million Americans have elevated low-density lipoproteins (LDLc) [3]

Local Problem:

- 75.2% of adults in Tompkins County have been screened for lipid disorders in last 5 years[6]
- No formal policy/procedure in place in the primary care clinic
- 60% of high risk charts audited had appropriate screening
- 0% documented ASCVD Risk nor statin benefit group documented
- Overall 64.5% correct treatment of lipid disorders, including specialist-initiated treatment
- 30.8% in office appropriate treatment initiated

Best Practice:

- Individualized lifestyle modification for risk stratification
- Appropriate lipid screening[2]
- Appropriate treatment - 2013 AHA/ACC Statin Benefit Groups:
  - Primary LDL-c levels ≥190mg/dL
  - Diabetics age 40-75 years old with LDL-c 70-189mg/dL
  - Non-diabetics age 40-75 with estimated 10-year ASCVD risk ≥7.5%
  - Clinical ASCVD[1]
- Screening, Brief Intervention and Referral to Treatment (SBIRT)[5]

Aim

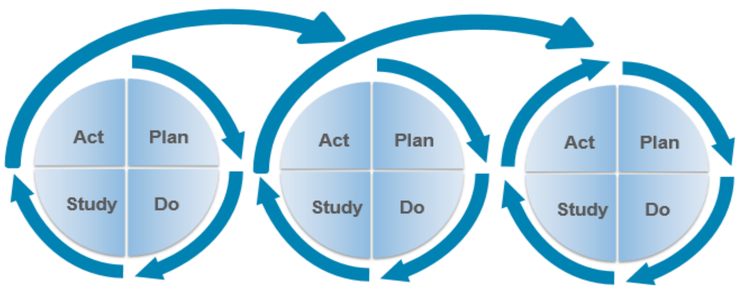
- The aim of this project was to improve effective lipid screening and appropriate management according to the 2013 ACC/AHA Guidelines to 100% in adults over 90 days.

Planned Improvement

Context:

- Short-staffed, fast-paced, rural primary care clinic
- Nursing was excluded due to staffing shortages
- No formal policies/procedures in practice

Institute for Healthcare Improvement (IHI) toolkit was used to implement four Plan-Do-Study-Act (PDSA) Cycles



Initial Tests of Change:

- Lipid Screening Tool
- Lipid Treatment Flow Sheet
- Patient Engagement Shared Decision Making Tool
- Weekly Staff Engagement Emails

Predictions:

The implementation of a patient-centered lifestyle questionnaire and educational materials would improve individualization of lifestyle modification to prevent cardiovascular disease, engage patients from the time they enter the office, and in turn spur conversation between patient and provider regarding appropriate screening and treatment options. Increasing exposure to the guidelines would encourage providers to implement appropriate screening and treatment in their practice and ultimately prime the staff for future change within the practice by implementing teamwork strategies. All of these methods may increase the workload on staff, ultimately decreasing staff satisfaction.

Results

Figure 1:

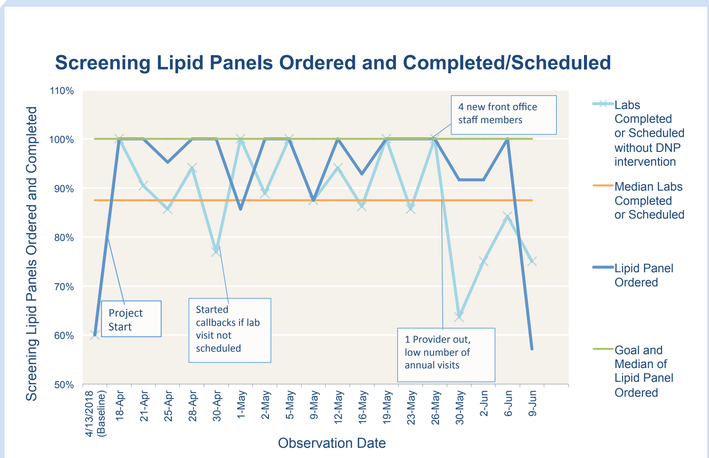


Figure 1. Comparison of lipid panels ordered to those completed before visit, at visit, or scheduled to be completed after visit without DNP student intervention at chart audit. Initial near 8% gap between ordered and completion turned into all but two patients with labs completed or scheduled to complete with DNP intervention.

Figure 2. A positive shift in the appropriate documentation of statin benefit group after initiating individualized provider feedback reports, ultimately leading to better compliance with guideline-recommended treatments despite the low preventative patient numbers in cycle four. Overall there was more than a 33% improvement in appropriate documentation of statin benefit group.

Figure 2:

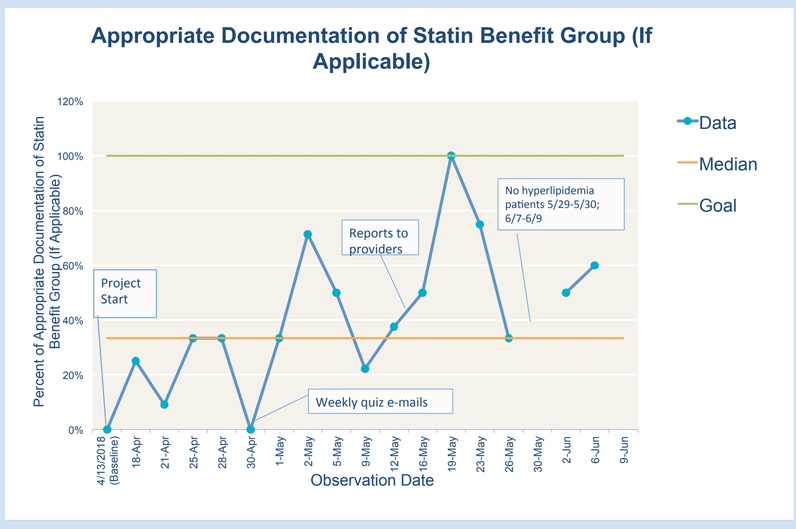


Figure 3:

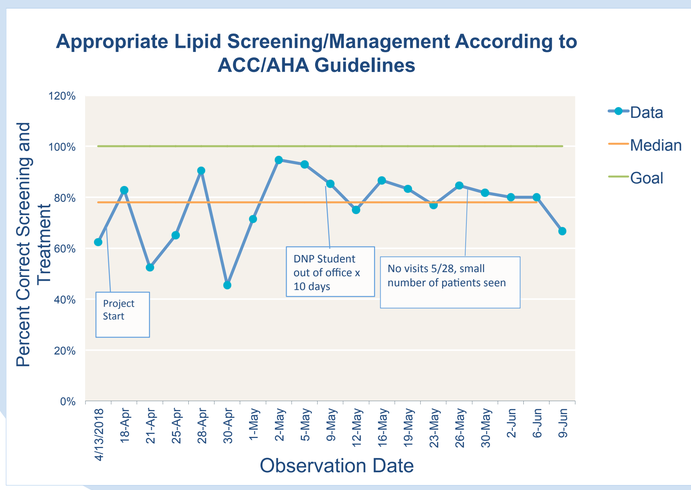


Figure 3. Overall appropriate lipid screening, appropriate documentation of statin benefit group, and treatment of lipid disorders experienced a positive shift in the third and fourth cycle showing consistent improvement with less variation despite the low preventative patient numbers in cycle four. Overall there was > 15% improvement from baseline, >10% improvement from week one to eight, in screening and treatment of hyperlipidemia in the practice.

Measures

	Measure	Operational Definition
Aim		Total number of charts with appropriate screening and treatment/total preventative visit charts
Screening	Process	Number of lipid panels ordered/number of preventative visits meeting screening criteria
	Outcome	Total number of lipid panels completed/lipid panels ordered
Treatment	Process	Number of charts with appropriate statin benefit group documented/number of charts with positive lipid screens
	Outcome	Number of correct treatments according to guidelines/ number of charts with positive lipid screens
Teamwork	Process	Number of team members receiving education/total number of team members
	Outcome	Mean score on on staff survey for inclusion and teamwork
Patient Engagement	Process	Number of tools completed/total number of preventative visits
	Outcome	Number of charts with documented patient goals/total number of adult preventative visits
Balancing		Mean score on staff satisfaction and workload survey

- Chart audits were completed every 3 days by the DNP student
- The team was surveyed every 2 weeks
- The data was placed into run charts and analyzed for shifts and trends that lead to iterative changes

References

1. American College of Cardiology/American Heart Disease. (2014). 2013 ACC/AHA Guideline on the Treatment of Blood Cholesterol to Reduce Atherosclerotic Cardiovascular Disease in Adults. Journal of the American College of Cardiology, 63(25), 2889-2934.
2. American Heart Association. (2018). Cholesterol Management Guide for Healthcare Practitioners. Retrieved from http://ahacholesterol-hcp.ksw-gtg.com/publication/?i=451475#{"issue_id":451475,"page":0}
3. Centers for Disease Control and Prevention. (2015). Cholesterol Fact Sheet. Retrieved fromhttps://www.cdc.gov/dhdsp/data_statistics/fact_sheets/fs_cholesterol.htm.
4. New York State Department of Health [NYSDOH]. (2017). Cardiovascular Disease Indicators: Tompkins County. Retrieved fromhttps://www.health.ny.gov/statistics/chac/chai/docs/chr_50.htm
5. Substance Abuse and Mental Health Services Administration. (2017). About Screening, Brief Intervention, and Referral to Treatment (SBIRT). Retrieved from https://www.samhsa.gov/sbirt/about
6. United States Census Bureau. (2017). Quick Facts: Tompkins County, New York. Retrieved from https://www.census.gov/quickfacts/fact/table/tompkinscountynewyork/PST045217

Conclusions

- Overall there was a 15.38% improvement in appropriate screening and treatment of hyperlipidemia. Increased patient engagement lead to more individualized risk stratification. The team began to standardize processes and improved inclusion of team members and staff satisfaction.
- The methods are sustainable, especially in practices that engage in chart audits. Provider buy-in is important, as is standardization and team education.
- Limitations of this current project: no IT department involved, office director selected staff to be surveyed, study not applicable to all providers
- Project recovered costs, closed the gap between ordered and completed labs, identified statin benefit group for 28.83% more patients, and treated an additional 20.83% than baseline reducing potential costs on the community by reducing heart disease in the community
- Next steps: expanding standardization to all providers using SBIRT and PDSA cycles to improve other chronic disease management

Lessons Learned

- The front office team engagement, standardization, creation of patient engagement materials, and individualized feedback promoted the success of the project. Barriers included a large practice expanding between two offices, staffing shortages, and
- Engaging the providers on an individualized basis lead to a steady increase in statin benefit group documentation which lead to improved outcomes
- Identified that lack of preventative visits was cause for lack of lipid screening, therefore measures were implemented in the practice to bring all patients in for preventative exam
- Front office staff engaged at a high level but staff restructuring lead to unreliable results
- Staff appreciated a transparent, easy-to-follow program to improve compliance with guidelines and patient outcomes

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