



QUALITY IMPROVEMENT OF PEDIATRIC LEAD SCREENING EXAMS AT 1 AND 2 YEARS OF AGE AT COMMUNITY HEALTH AND SOCIAL SERVICES (CHASS) CENTER

Danny Garcia, MD, MPH, Haria Henry, MD, Matthew Ellison, DO,
Mariam Japaridze, MD, Tahlianna Almonte, MD, Elizabeth K. Towner, PhD

Wayne State University School of Medicine, Department of Family Medicine & Public Health Sciences,
Ascension Providence Rochester Hospital Department of Family Medicine

2021



Background

- Elevated blood lead levels in children <5 years old lead to headache, insomnia, developmental delay, peripheral nervous system damage, and learning difficulties.
- Children from underserved areas and populations are disproportionately affected by elevated blood lead levels.
- Medicaid in Michigan recommends that all children enrolled should undergo blood level testing at 12 and 24 months age or from 36-72 months if not previously tested.



Background

- CHASS Center
 - Community-Based
 - Located in Southwest Detroit
 - Mission: develop, promote, and provide comprehensive, accessible and affordable quality primary health care and support services to all residents of the community, with special emphasis on the underserved African-American and Latino population.
- From 2018-2020, only 34% of Medicaid enrolled children at CHASS underwent blood lead level testing.



QI Objectives

- **Long-term:** 100% of children receiving services at CHASS and enrolled in Medicaid will complete blood lead level screening
- **Shorter-term:** To increase lead level screening compliance by 25%.



Fishbone Diagram: Cause and Effect

Category: Equipment

Cause: easy to forget to order lead levels for children who have not had levels checked in the past

Effect: Easy to forget to order lead levels

Category: Environment

Cause: Child becomes irritable, unable to find lab

Effect: Obstacles in completing lab draw

Category: People

Cause: lack of lead level screening by providers

Effect: human error/poor prioritization, parents refuse or delay the actual blood draw

Category: Methods/Procedures

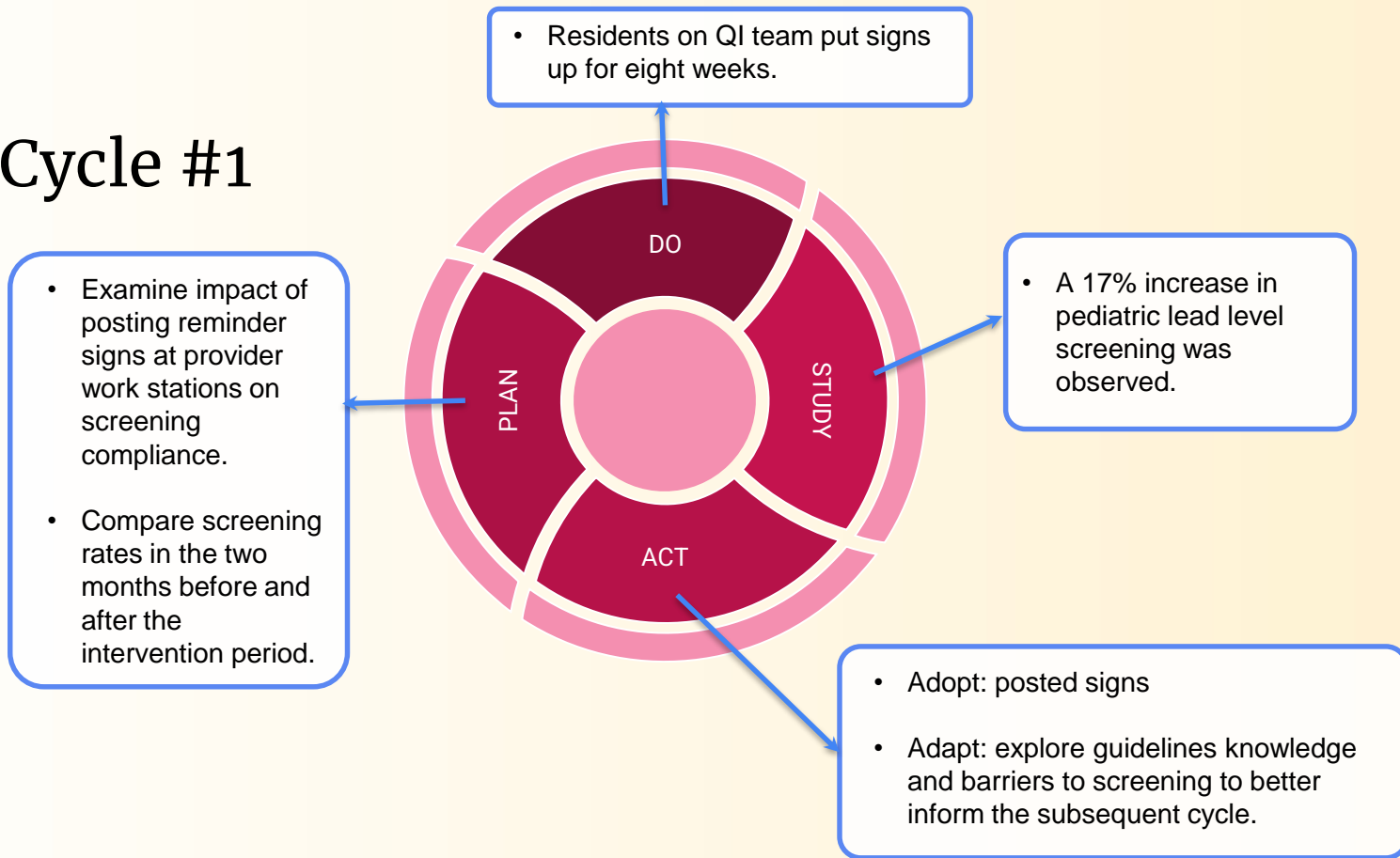
Cause: POC lead is easier to complete as a lab while in the patient room vs laboratory blood draw.

Effect: Lead level being ordered as a lab draw

POOR COMPLIANCE



PDSA Cycle #1





Follow-Up Survey

- 5-item survey completed by 80% (16 of 20) providers who see children.
- The 70% of providers who completed the survey understand when lead screening should occur.
- Barriers to screening include
 - When screening is done (30%)
 - Memory (45%)
 - Poor patient compliance (30%)
 - Blood draw for young child (30%)
- Suggested strategies to improve provider compliance with ordering blood lead screen
 - Hints on a template (30%)
 - EPIC pop-ups (54%)



Conclusions

- Regular education and guideline reminders for pediatric lead screening needed
 - May eventually become habit
- Follow-up with providers to see if template reminders were useful
- Identify caregiver barriers to completing pediatric lead screenings
- Addressing the aforementioned barriers will help us meet our short- and long- term goals of increasing compliance with lead screenings.



Public Health Implications

- Children from families who immigrated to the US and/or are from lower-socioeconomic backgrounds are at higher risk of lead exposure.
- Timely completion of blood lead level screening can minimize this risk and the harmful effects of lead exposure.
- Provider reminder signs are a low cost/low resource intervention that led to increases in pediatric blood lead screening at CHASS.
- Increased screening compliance could have a substantial impact on decreasing the number of children in SW who experience negative health consequences from lead exposure.



References

- <https://www.aafp.org/afp/2019/1015/od1.html>
- Michigan Department of Health & Human Services, www.michigan.gov, “ Medicaid Blood Lead Testing Reports”