

# Increasing the percentage of patients receiving appropriate developmental screenings within the context of a preventative service bundle



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## Background

- Pediatricians play an important role in preparing children for kindergarten by helping ensure proper physical, social-emotional, and cognitive development, and by providing services whenever problems or delays arise<sup>1</sup>
- Nationwide, pediatric patients receive only 41% of indicated preventative services<sup>2</sup>
- The American Academy of Pediatrics (AAP) recommends using a standardized developmental screener such as the Ages and Stages Questionnaire (ASQ)<sup>4</sup> at ages 9, 18, and 24 months
- Standardized developmental screening leads to a significant increase in the identification of developmental delays and referrals to early intervention services<sup>3</sup>
- Prior studies have show that while 47% of physicians use a validated developmental screening instrument<sup>4</sup>, they mostly use these measures selectively rather than systematically, with only 23% of pediatricians utilizing systematic standardized developmental screening<sup>5</sup>
- Challenges to developmental screening include lack of time, lack of available office staff and inadequate reimbursement<sup>6</sup>
- Our team previously used Quality Improvement (QI) methods to improve delivery of a bundle of preventive services in 0-14 month old patients from 58 to 92% This bundle included immunizations, developmental screening, lead screening, high risk screening for premature infants, maternal depression and food insecurity screening<sup>6</sup>
- Despite this success, overall ASQ screening rates in the first two years of life remained suboptimal in our clinic. We hypothesized this was due to failure to identify patients who were due for developmental screening at the older ages, particularly those who were delayed or off-schedule for well child care.

## Aim

- Increase visit-level rates of completion of appropriate developmental screening of patients 9-27 months old (Ages and Stages Questionnaire--ASQ) from 77% to 90% by 7/31/2017

## Setting

- The Pediatric Primary Care Center (PPC) is a large, inner-city, academic health center, located on the main campus of Cincinnati Children's Hospital Medical Center (CCHMC)
- Patients are served both by appointment as well as by a walk-in clinic
- The clinic serves ~19,000 active patients, of which over 85% are Medicaid insured
- Challenges include poor patient follow up, difficulty pre-planning due to walk-in visits and difficulty sustaining improvement in times of high volume and high staff turnover
- An electronic medical record (EMR) is utilized

## Methods

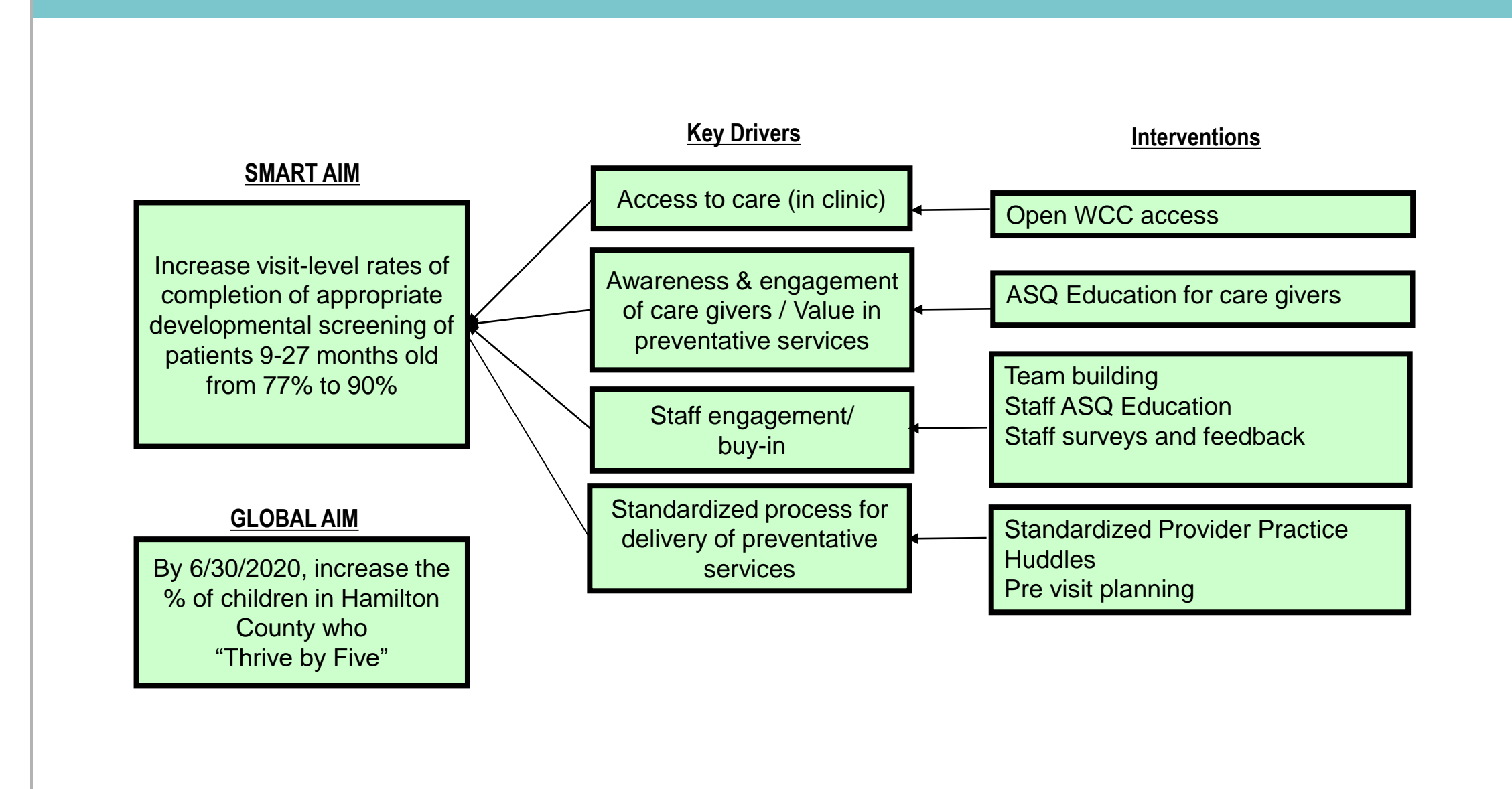
### Interventions

- Quality improvement methodology was used, key drivers were identified and interventions were tested using Plan-Do-Study-Act (PDSA) cycles from 6/4/2017-7/29/2017
- Utilizing an EMR Decision Support Tool (DST) to alert staff when screening is due
  - Real time preventative service pre planning for walk in patients
  - Eliminated demographic page of developmental screening (ASQ) as it is redundant to decrease time spent on paperwork by parents/caregivers
  - Alerting staff and attending providers in open access walk-in clinic when an ASQ was needed for a patient (pre visit huddle)
  - Assisting new pediatric interns in identifying patients in need of developmental screening and ensuring ASQ was documented appropriately
  - Post clinic huddle with staff and providers to identify and understand failures in real time
  - Reviewing weekly failure reports to identify areas for improvement
  - Reviewing data with staff and clinicians to inform them of our progress and emphasize the importance of these screenings

### Data Analysis

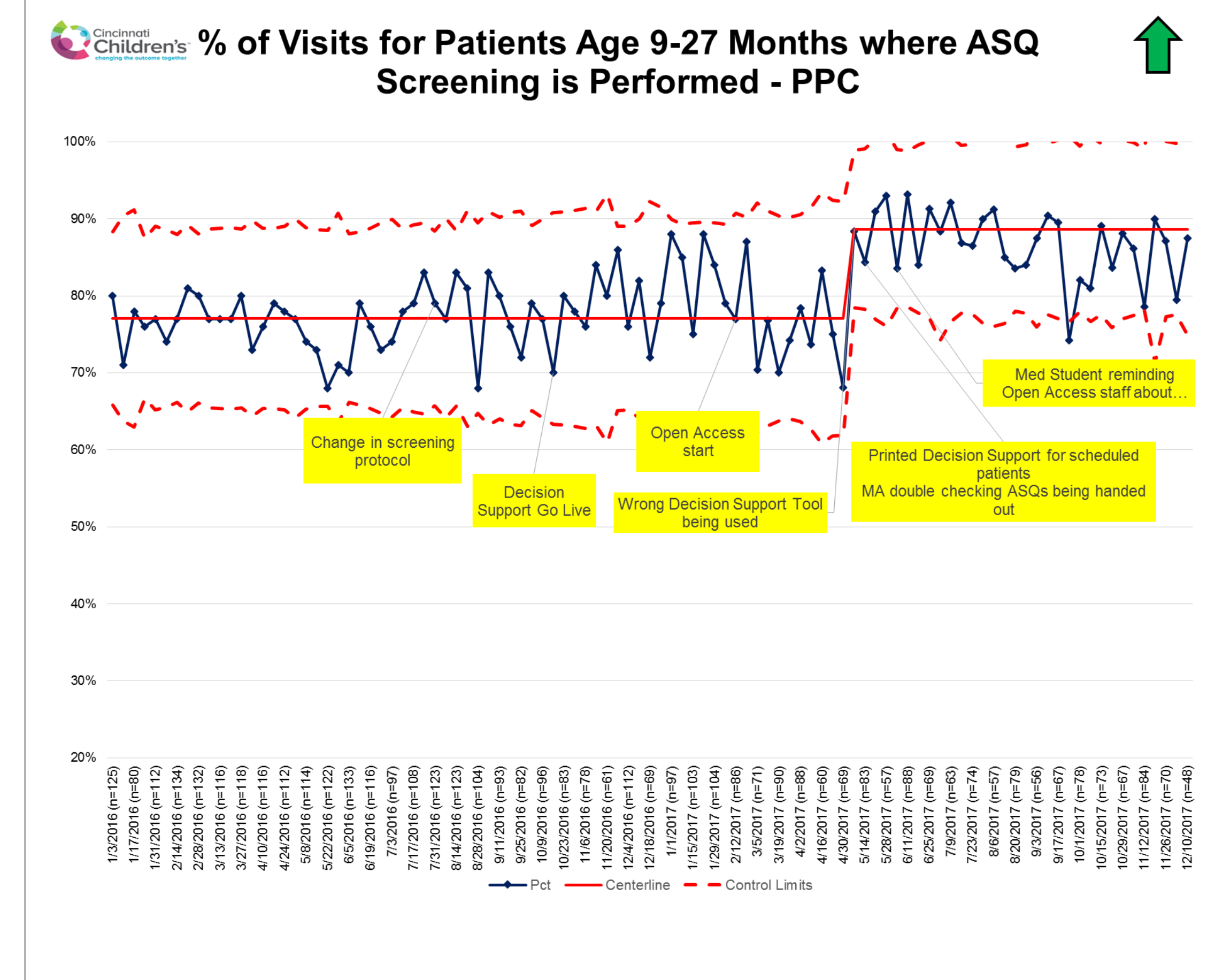
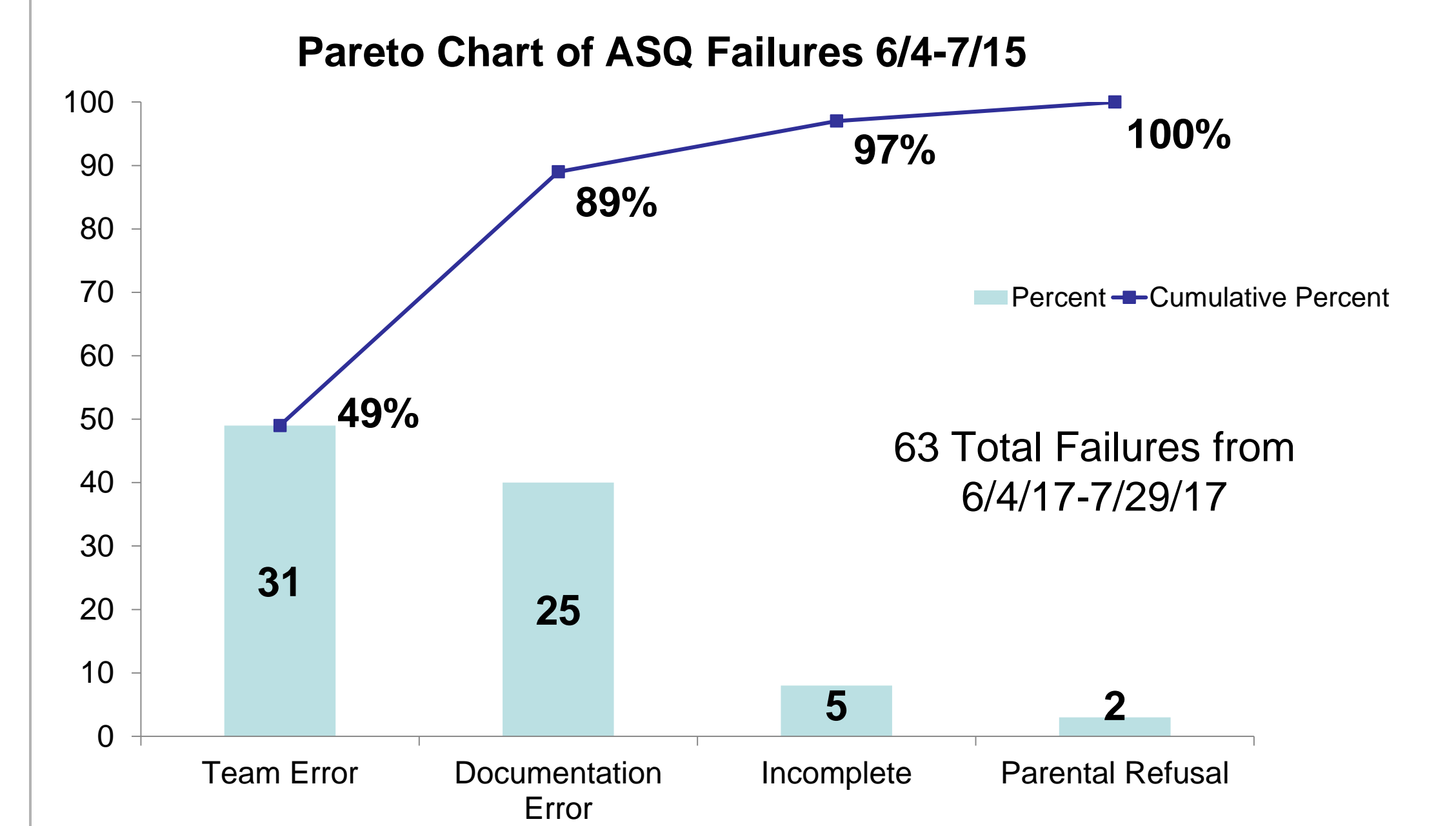
- Weekly failure reports were utilized and followed up by a manual chart review to find the root cause for the failure
- Failures were classified as
  - Team errors: staff failed to provide an ASQ, staff provided the wrong version of the ASQ, or the ASQ was given to the guardian to fill out but never collected from the guardian.
  - Documentation errors: the ASQ was completed and scanned into the EMR but was not properly documented in flow sheet
  - Incomplete: the guardian did not complete the ASQ, and the team did not check to see if it had been completed before the patient left
  - Parental Refusal: the guardian refused to complete the ASQ
  - Language barrier for non English speaking families and literacy challenges
- Failures were classified into the above categories and documented in a Pareto chart to identify areas for improvement
- Data was plotted on a control chart and analyzed using statistical process control methods to identify significant changes

## Key Drivers



## Results

- Visit level ASQ screening rates improved from 77% to 88%. This improvement rate was sustained 4 months later
- There were 63 failures out of 573 patients from 6/4-7/29/2017, with 49% of errors being due to a team error and 39% being due to a documentation failure



## Conclusions

- Using quality improvement strategies, including PDSA cycles, we were successful at increasing the rate of ASQ screenings from 77% to 88%
- The majority of ASQ screening failures were due to team errors (49%)
- Improvement likely resulted from culture change and practice standardization
- Attaining screening rates of 100% for this measure is unrealistic (due to occasional parental refusal, accompanied caregiver being unfamiliar with the child's development, language barriers, and acutely ill patients triaged to the Emergency Department)
- Further work is required to see if these changes are sustainable during busy winter season

### Future Directions

- More work is needed to further improve the reliability of ASQ screening. Possible interventions include alerts in the EMR when documentation is incomplete
- Future work will focus on:
  - Population measures targeting patients who are not attending their appointments at the PPC in order to increase the percentage of patients who are receiving needed developmental screening
  - Hospital in-reach (closing developmental screening care gaps when patients are seen in other areas the medical center)
  - Outreach (screening patients where they are in the community)

## References

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