



# Under-referrals for Developmental Delays by Pediatricians: A Systematic Review

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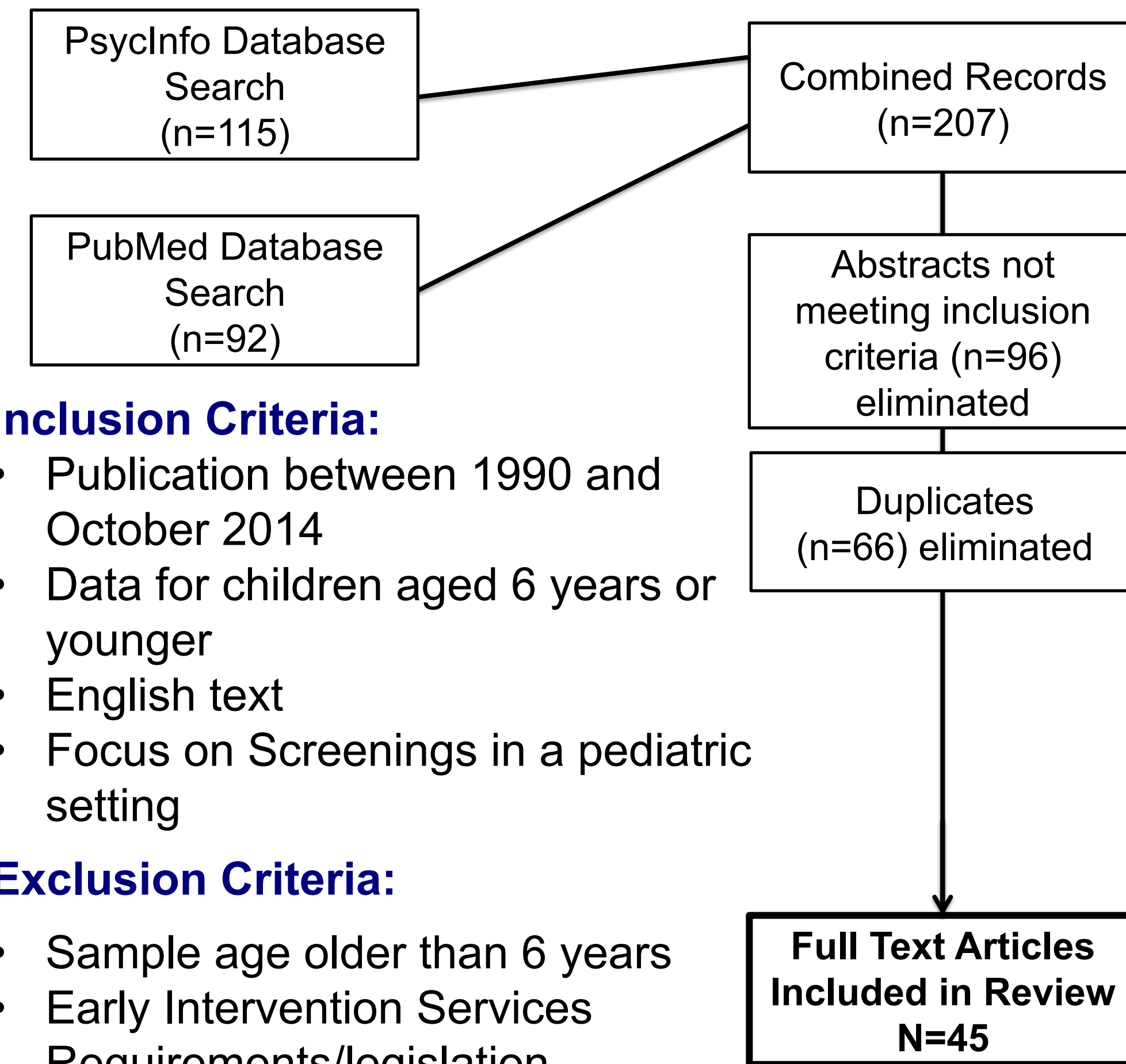
## Introduction

- 12% to 16% of children have a developmental disorder (Guevara et al., 2013)
- There is an increase of under-referrals, resulting in many children not receiving services. (Sices, Feundtner, McLaughlin, Drotar & Williams, 2003)
- The American Academy of Pediatrics (AAP) recommends:
  - Developmental screenings be conducted at 9, 18, 24, or 30 month well care visits
  - Screenings be conducted when concerns are raised (Arunyanart et al., 2012)
  - Developmental surveillance be used at every well-child visit (Noritz et al., 2013)
- However, less than 50% of pediatricians report using standardized developmental screenings (Guevara et al., 2013)

## Purpose

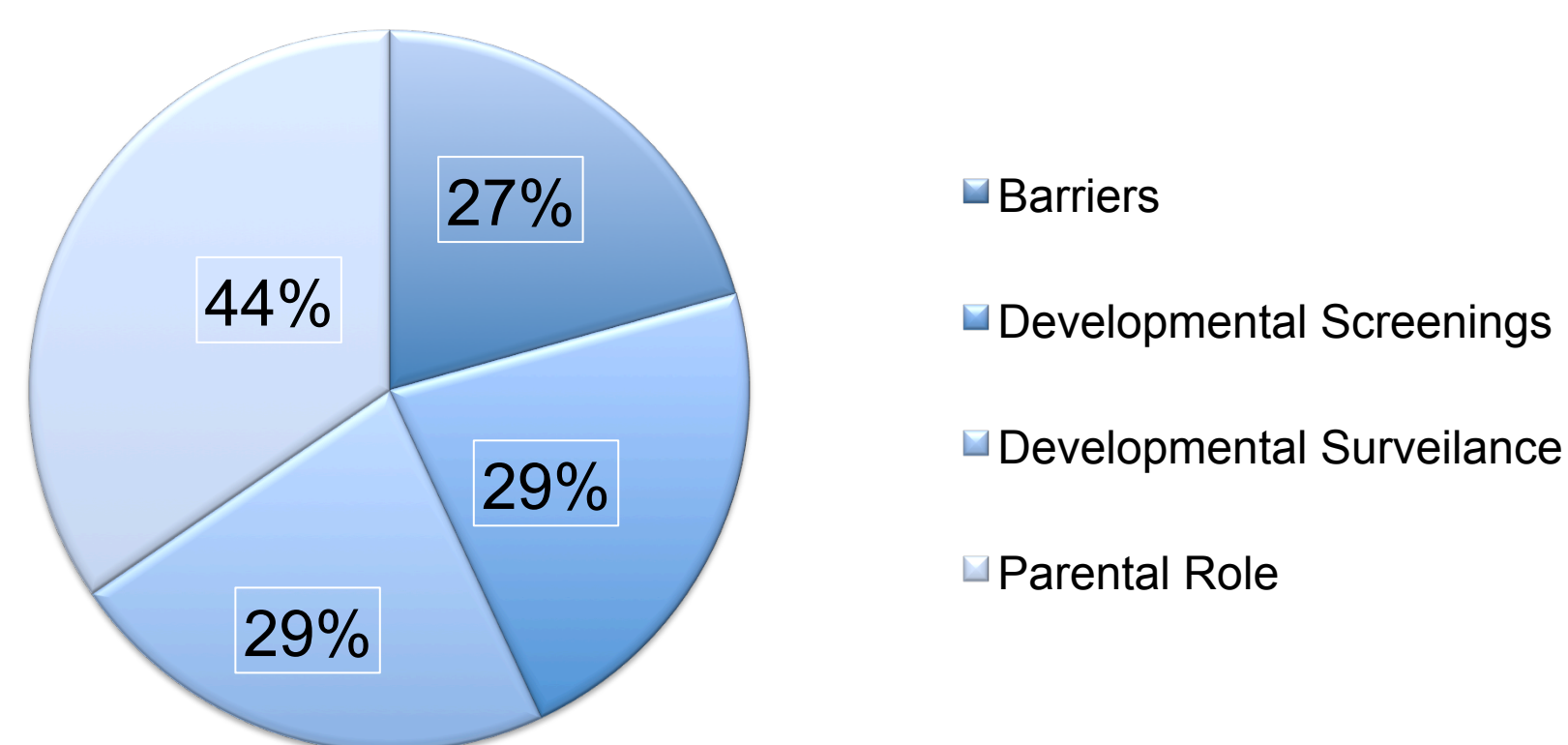
The purpose of this study is to systematically review the literature on developmental delays in early childhood and understand the under-referral rate in pediatric settings.

## Method



- Inclusion Criteria:**
- Publication between 1990 and October 2014
  - Data for children aged 6 years or younger
  - English text
  - Focus on Screenings in a pediatric setting

- Exclusion Criteria:**
- Sample age older than 6 years
  - Early Intervention Services Requirements/legislation
  - Specific developmental screening validity evaluations

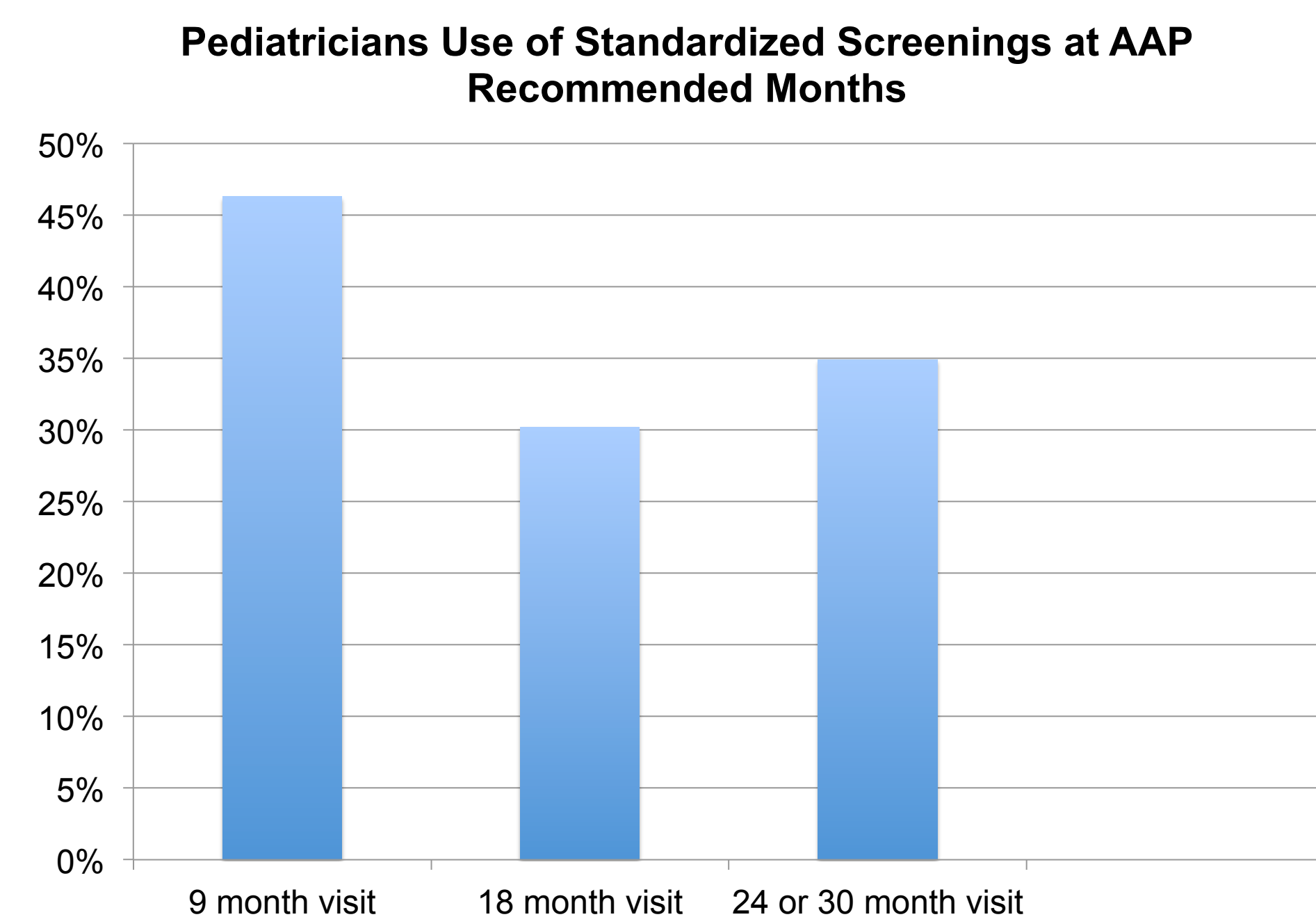


## Results

The top four themes emerging were, 1) pediatricians use of developmental screenings (n=13), 2) issues with using developmental surveillance in a pediatric setting alone (n=13), barriers to conducting developmental screenings in a pediatric setting (n=12), and 4) parental role in developmental screenings (n=20).

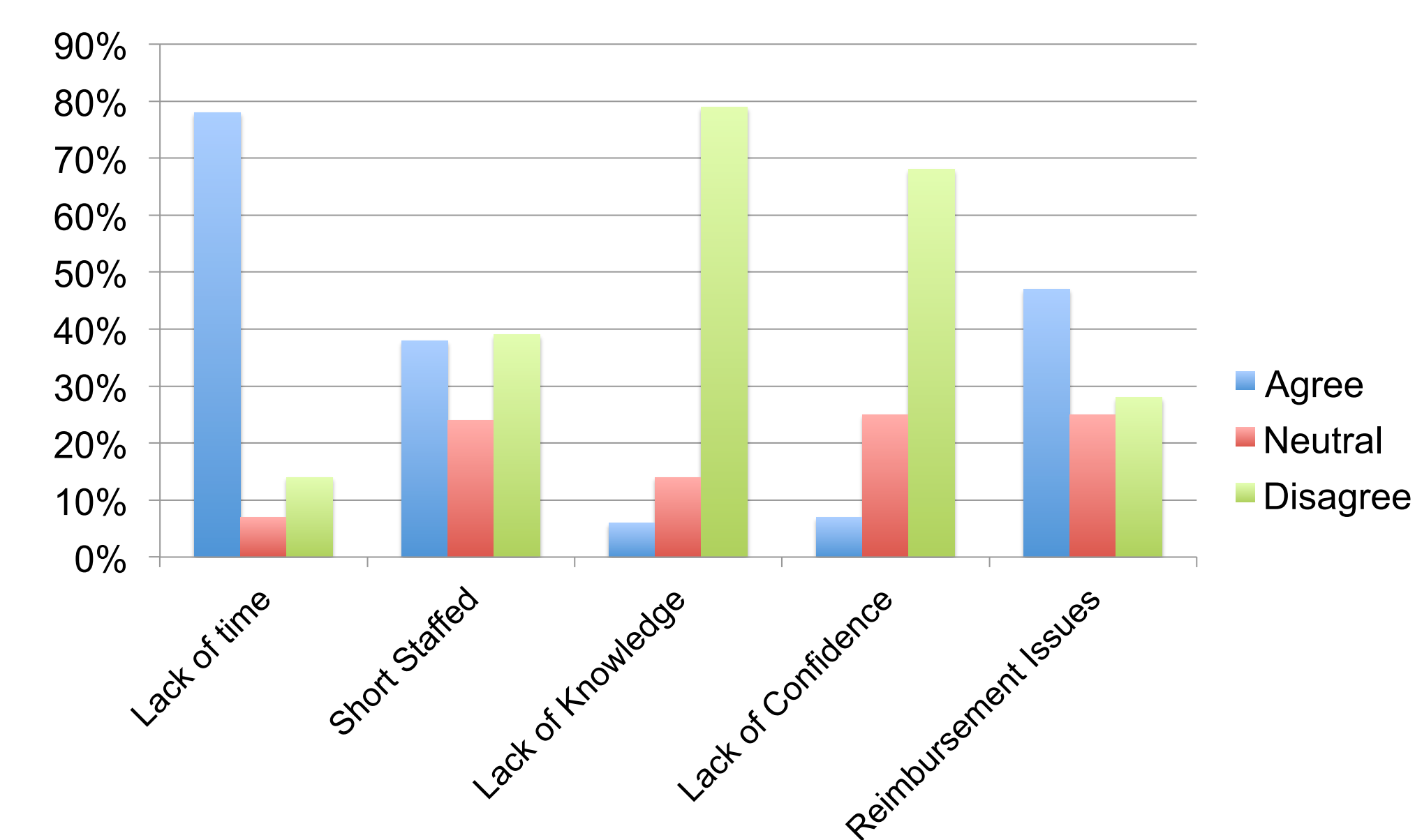
### Pediatricians Use of Developmental Screenings

- 50% of pediatricians implement developmental screenings (Rydz, Shevell, Majnemer & Oskoui, 2005)
- 17.8% of pediatricians reported that they follow the American Academy of Pediatrics (AAP) recommendations (Arunyanart et al., 2012)
- 30% to 45% of pediatricians reported inconsistency in following AAP recommended visits or when concerns were raised (Arunyanart et al., 2012)
- Physicians reported using standardized screenings in less than half of patient visits, or never (Arunyanart et al., 2012)



### Barriers to Conducting Developmental Screenings

In an AAP survey, pediatricians reported the following barriers when screening for developmental delays (Honigfeld & McKay, 2006)



- However, in other surveys, lack of knowledge and lack of confidence were considered significant barriers. (Allen, Berry, Brewster, Chalasani, & Mack, 2010; Mackrides & Ryherd, 2011)
- Additional barriers such as child population, unfamiliarity with screening tools, and cost were reported by pediatricians. (Sices, Feundtner, McLaughlin, Drotar & Williams, 2003; Johnson, Wolke & Marlow, 2008; Mackrides & Ryherd, 2011; Morelli, Pati, Butler, Blum, Gerdes, Pinto-Marvin & Guevara, 2014)

### Using Developmental Surveillance

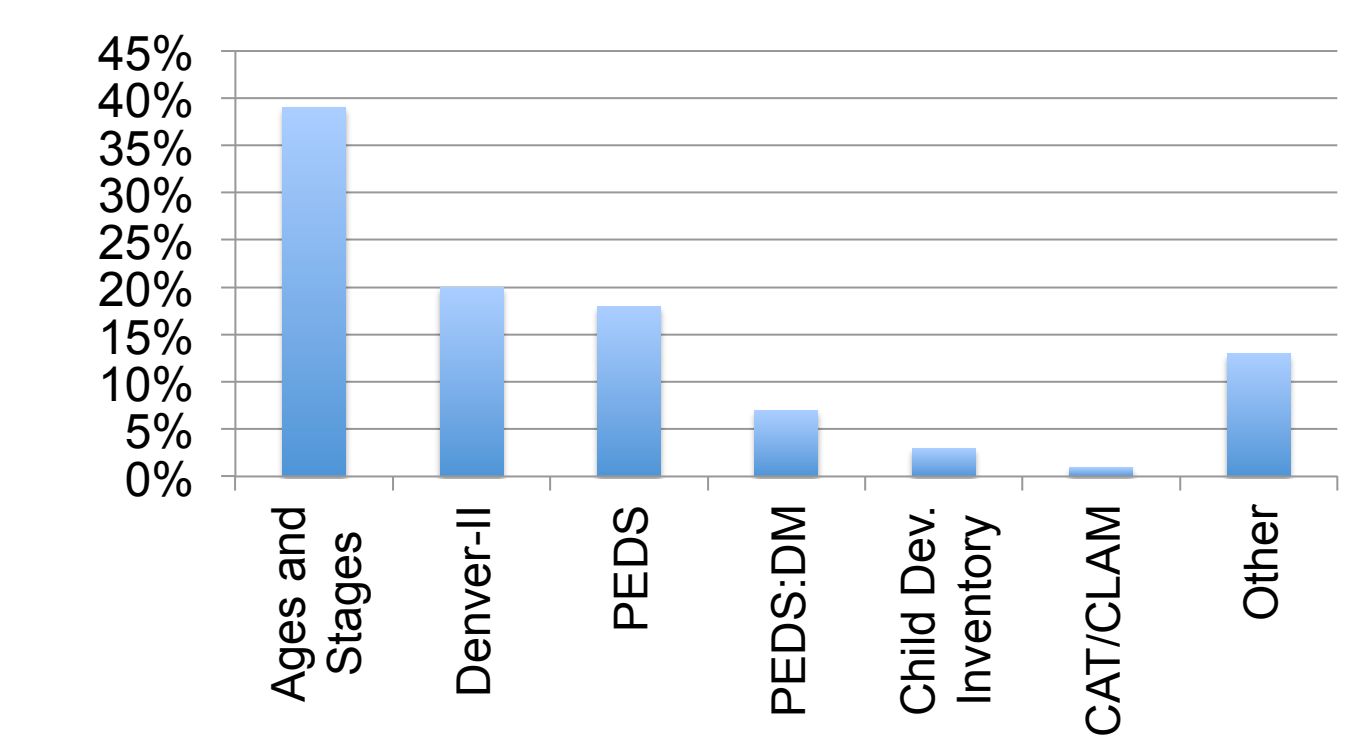
- Developmental Surveillance is the most common strategy used by pediatricians (Rydz, Shevell, Majnemer & Oskoui, 2005)
  - Developmental surveillance is especially useful for children at-risk
  - Includes obtaining a developmental history, utilizing parental concerns, keeping track of observations, and discussing concerns with relevant professionals
  - The "wait and see" approach is most commonly used as concerns arise
- Missed opportunities for referrals increase when only using developmental surveillance
  - Surveillance alone would have missed 45% of children that have developmental delays (Mackrides & Ryherd, 2011)
  - Children who received developmental surveillance alone were slower to be identified than children that received both developmental surveillance and developmental screenings (Guevara et al., 2013)
- Developmental surveillance should be used throughout childhood, but in combination with screenings (Noritz et al., 2013)

### Parental Role in Developmental Screenings

- Pediatricians use parent questionnaires to gather information about their patient as well as any concerns that the parents may have; however only 15% use them (Sices, Feundtner, McLaughlin, Drotar & Williams, 2003)
- Pediatricians often fail to address parental concerns because they think parents may be over-concerned
- However, parental scoring on questionnaires is comparable to the results of standardized developmental tests (Sices, Feundtner, McLaughlin, Drotar & Williams, 2003)
- Parental concerns are not a substitute for formal evaluation, but should be used as an additional tool
  - Regardless of educational background and socioeconomic status, parents can give valid information about their child (Rydz, Shevell, Majnemer & Oskoui, 2005)
  - However, parents need to feel comfortable with raising concerns (Smith, Akai, Klerman & Keltner, 2010)
  - Furthermore, communication is needed among parents, extended family, schools, and community agencies (First & Palfrey, 1994)
  - Different caregivers may have varying answers regarding the child's development (Cepanex, Lice & Simlesa, 2012)

## Most Common Screenings Used

Pediatrician (n=227) Reported Common Screenings



(Arunyanart et al., 2012)

*Ages and Stages Questionnaire*: parent-questionnaire and the most common screening used in a pediatric setting (Arunyanart et al., 2012)

- Helps resolve the time and cost barrier
- Quick, completed before patient visit

## Early Detection & Early Intervention

- Benefits of early detection for families
  - Having information about child's development (Bailey et al., 2005)
  - Early Intervention services and support
  - Detecting delays early can help improve child's development (Oberklaid & Drever, 2011)
  - Change developmental trajectory (Goode, Diefendorf & Colgan, 2011)
  - Increase likelihood of successful future (Shapiro-Mendoza et al., 2013)
  - Increase of high school graduation rates and decrease in crime rate (Karoly, Killburn & Cannon, 2005)
- Early Intervention Services Offered
  - Child Specific developmental services
  - Trainings and services that support families
  - Give additional information regarding schools, therapy, plans, etc.
  - Good investment
    - Benefits can be compared or equalled to the program costs (Karoly, Killburn & Cannon, 2005)

## Conclusion

- Despite established recommendations by AAP, pediatricians are not meeting these recommendations for conducting developmental screenings.
- Attention needs to be placed on how to assist pediatricians in overcoming barriers
- Routine visits with a pediatrician are possibly the only opportunity for children to be detected for developmental delays and for families to receive resources on obtaining Early Intervention services
- Early detection and services give support, services, and trainings to families
- Collaboration between pediatricians and parents can help detect developmental delays earlier and reduce the amount of under-referrals.
- Parental questionnaires and concerns are as reliable as standardized screening scores