

# Importance of evidence based developmental screening in community health clinics that serve low SES Latino population

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# **Presenter Disclosures**

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**The following personal financial relationships with commercial interests relevant to this presentation existed during the past 12 months:**

**“No relationships to disclose”**

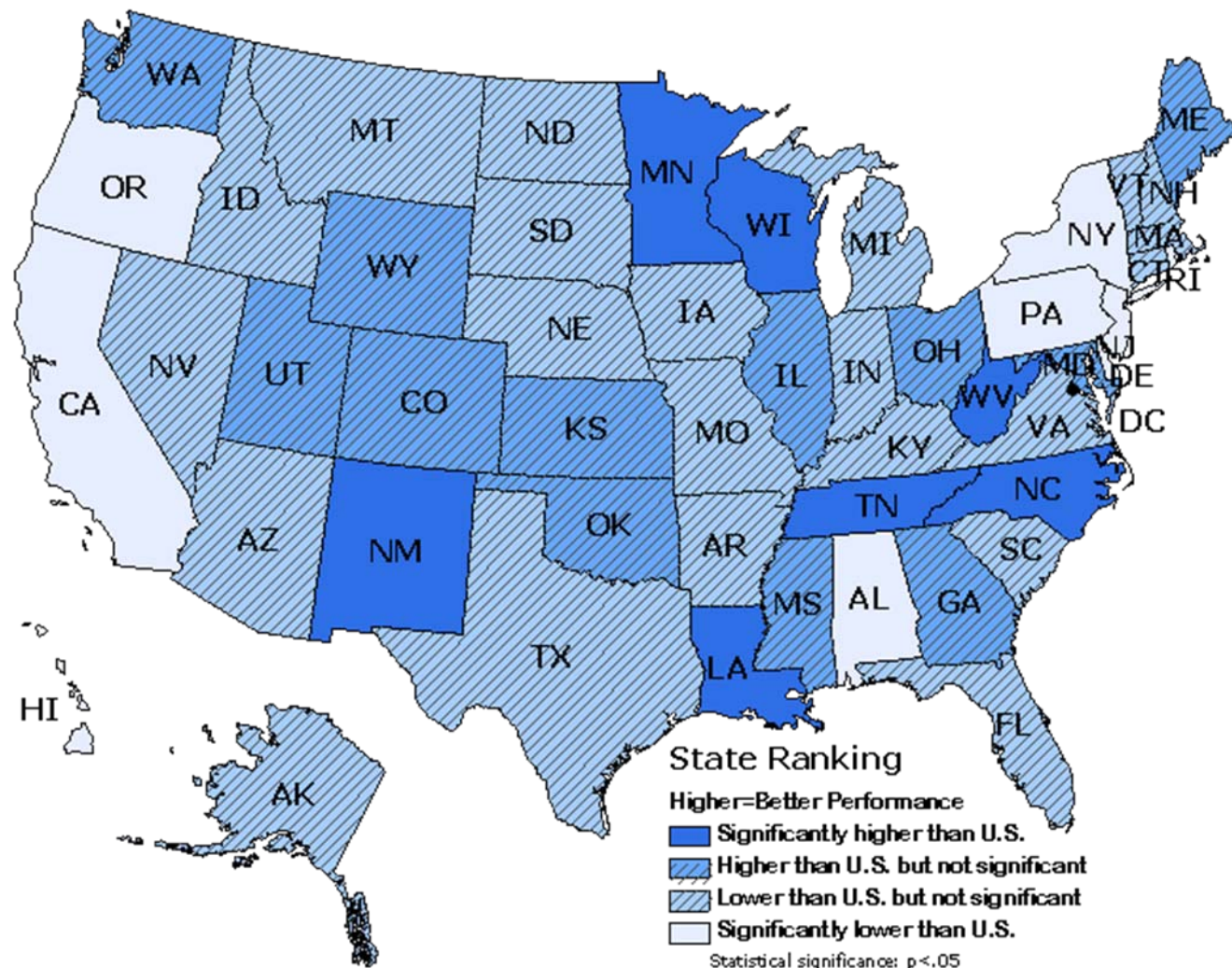


# 2007 National Survey of Children's Health

Percent of children receiving a standardized screening for developmental or behavioral problems (age 10 months-5 years)

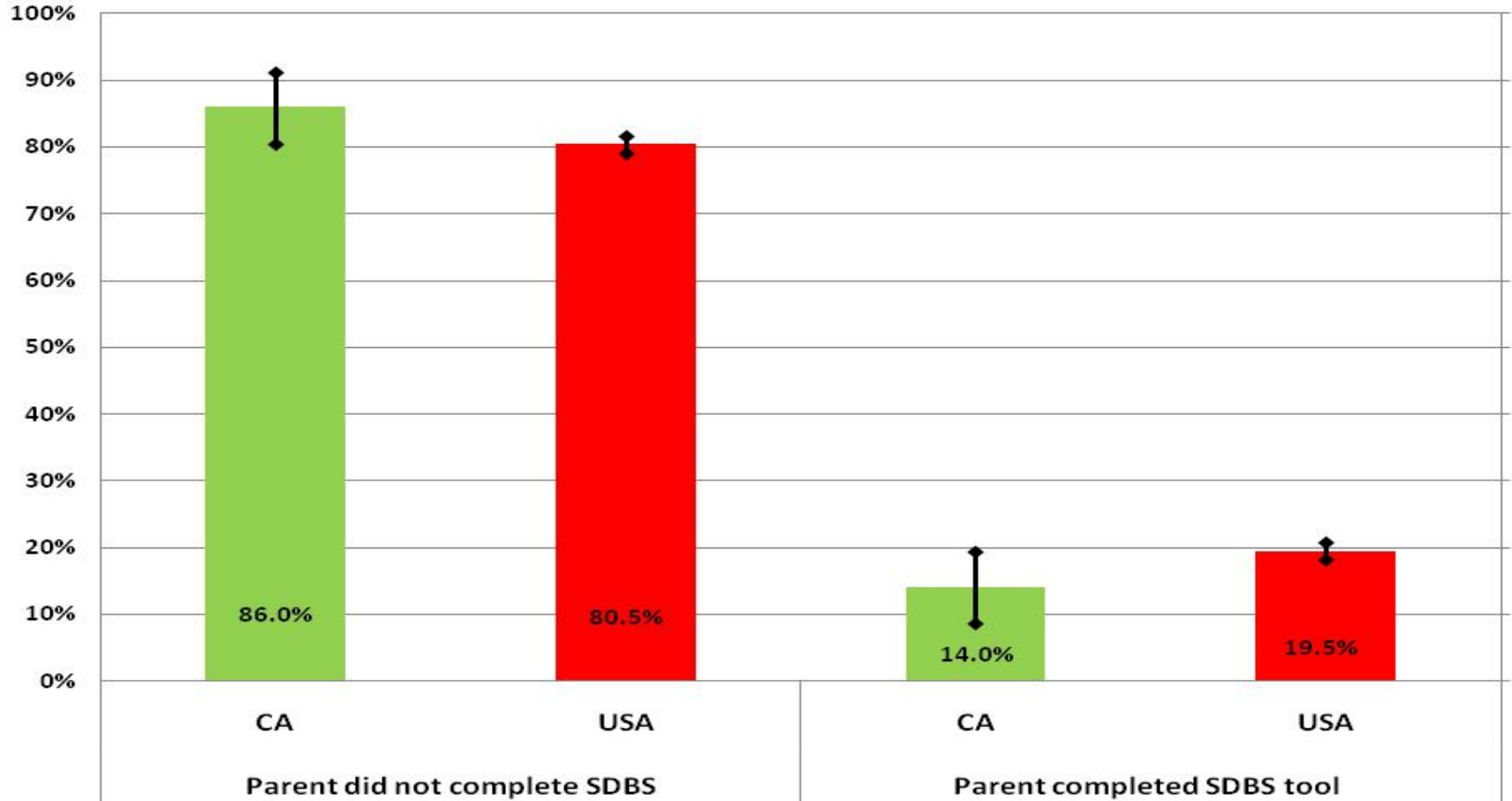
**Nationwide:** 19.5%  
of children met  
indicator

**California:** 14.0%,  
Lower than US;  
statistically  
significant



**Higher=Better  
Performance**

## Developmental Screening: California vs. Nationwide Children age 10 months-5years only



**SDBS-** To assess whether the parent completed a standardized, validated screening tool used to identify children at risk for developmental, behavioral or social delays. Example of SDBS tools included Parents Evaluation of Developmental Status (PEDS) and the Ages and Stages Questionnaire (ASQ).

**Source:** 2007 *National Survey of Children's Health*.



# Developmental Screening

## Research has shown that:

- Estimates state 16% of American children have developmental or behavioral disorders.
- Developmental delays, learning disorders, and behavioral and social-emotional problems are estimated to affect 1 in every 6 children.
- Only 20% to 30% of these children are identified as needing help before school begins.

# Developmental Screening

- Children who receive early treatment for developmental delays are more likely to graduate from high schools, hold jobs, live independently, and avoid teen pregnancy, delinquency, and violent crime, which result in a saving to society of about \$30,000 to \$100,000 per child.

# Developmental Screening

- If social-emotional problems are identified and addressed early, children are less likely to be placed in special education programs—and later in life, they're also less likely to experience school failure and unemployment.





## Pilot Project in HCA, Orange County, CA

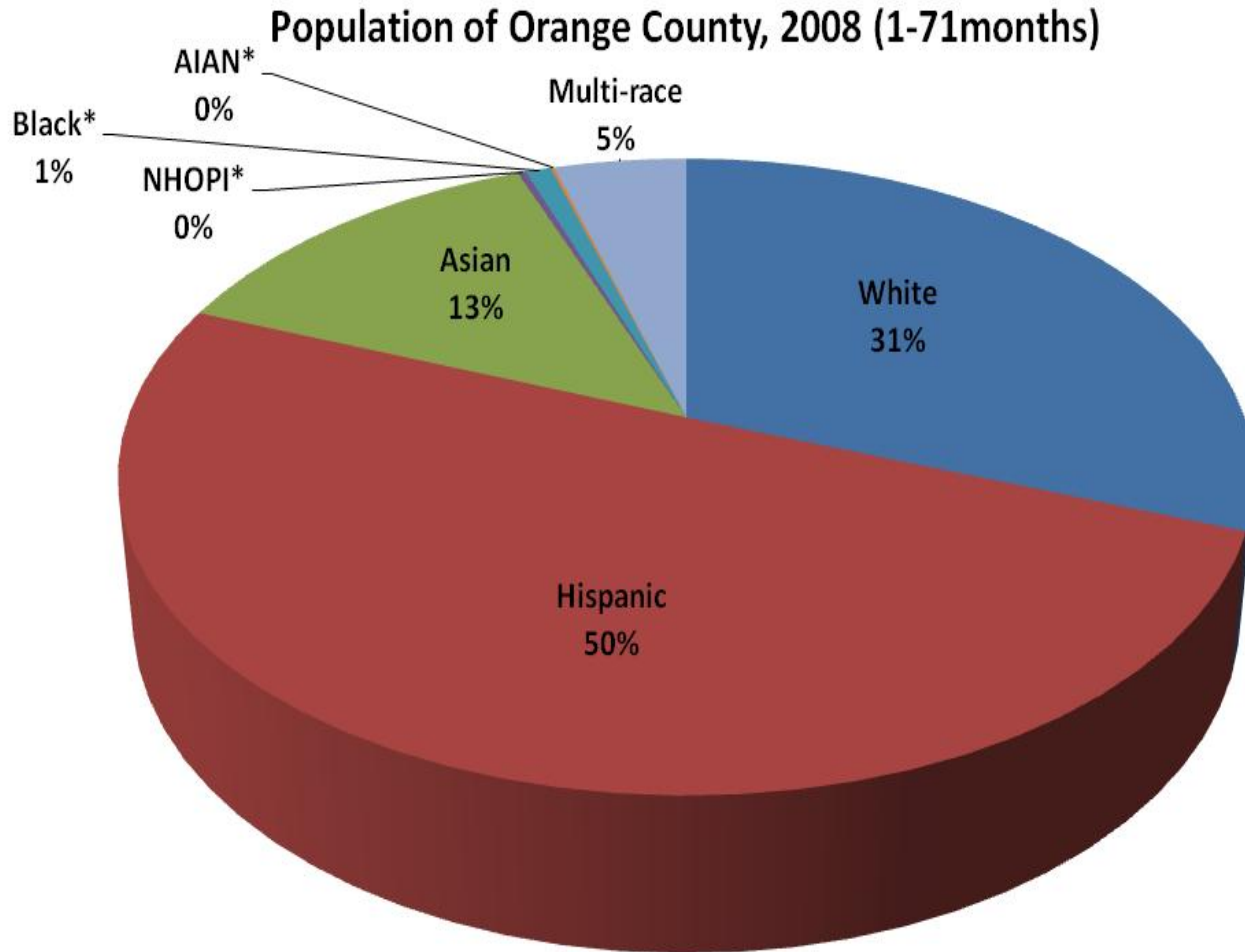
- In Orange County California, the Santa Ana (SA) and Buena Park (BP) public health clinics were conducting non-evidence based developmental screening tools.
- The Family Health clinic in collaboration with the Children and Families Commission and CHDP conducted a pilot project to integrate evidence-based developmental screening tool in Family Health clinics consistent with AAP policy statement released in July 2006.

# Background

## Clinic Screenings

- In 2007, both clinics provided a total of 1,865 unduplicated physical exams for children less than 5 years of age.
- Of those 1,865 unduplicated exams, 2.8% (52 clients) were referred for further evaluation.
- Referral Rate 2.8% (95% CI 2.08, 3.66).

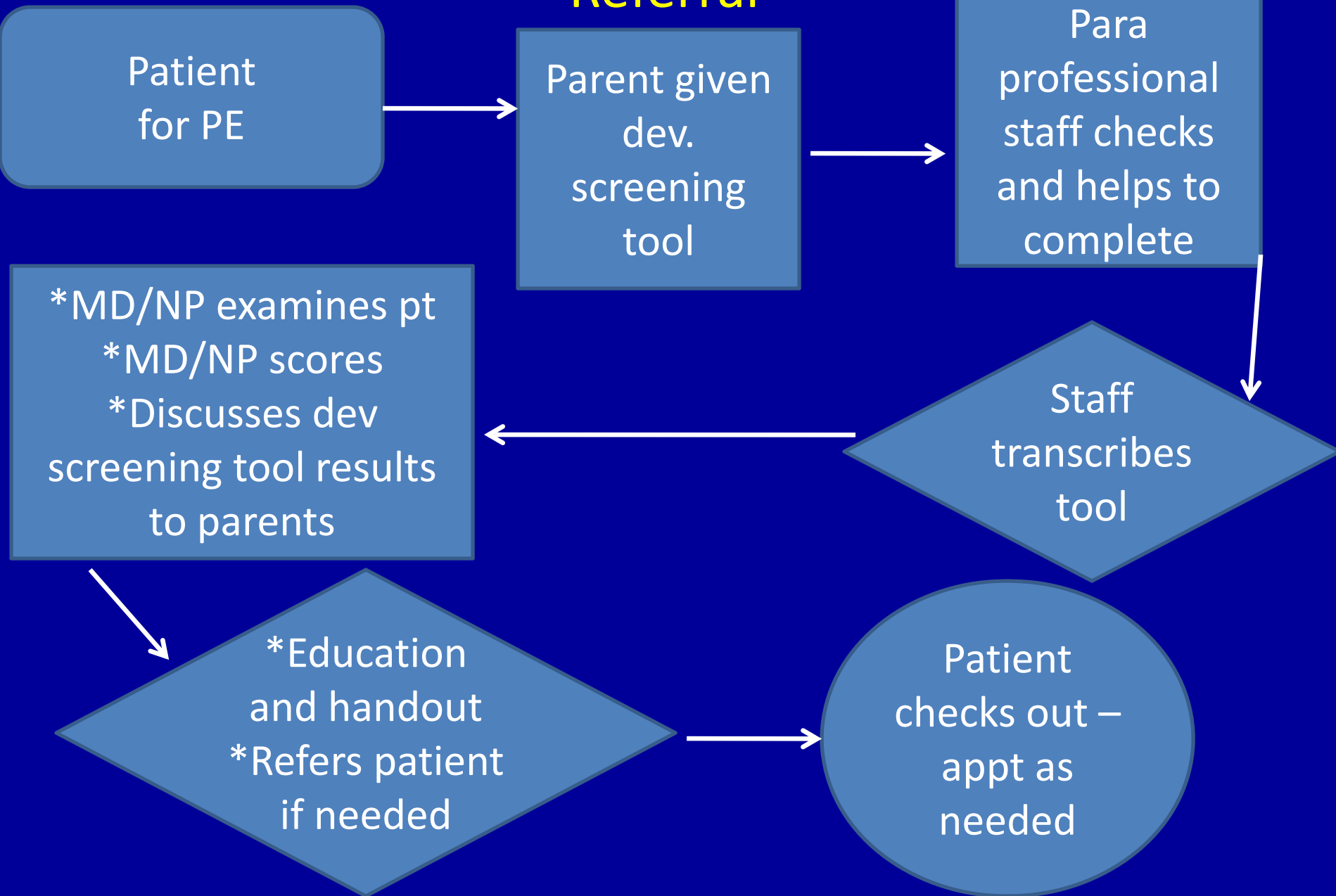
# Demographic Information



<b>White</b>	79,054
<b>Hispanic</b>	129,657
<b>Asian</b>	34,353
<b>NHOPI*</b> (Native Hawaiian and Other Pacific Islander)	700
<b>Black*</b>	2,245
<b>AIAN*</b> (American Indian/Alaskan Native)	309
<b>Multi-race</b>	11,642
<b>Total</b>	<b>257,959</b>

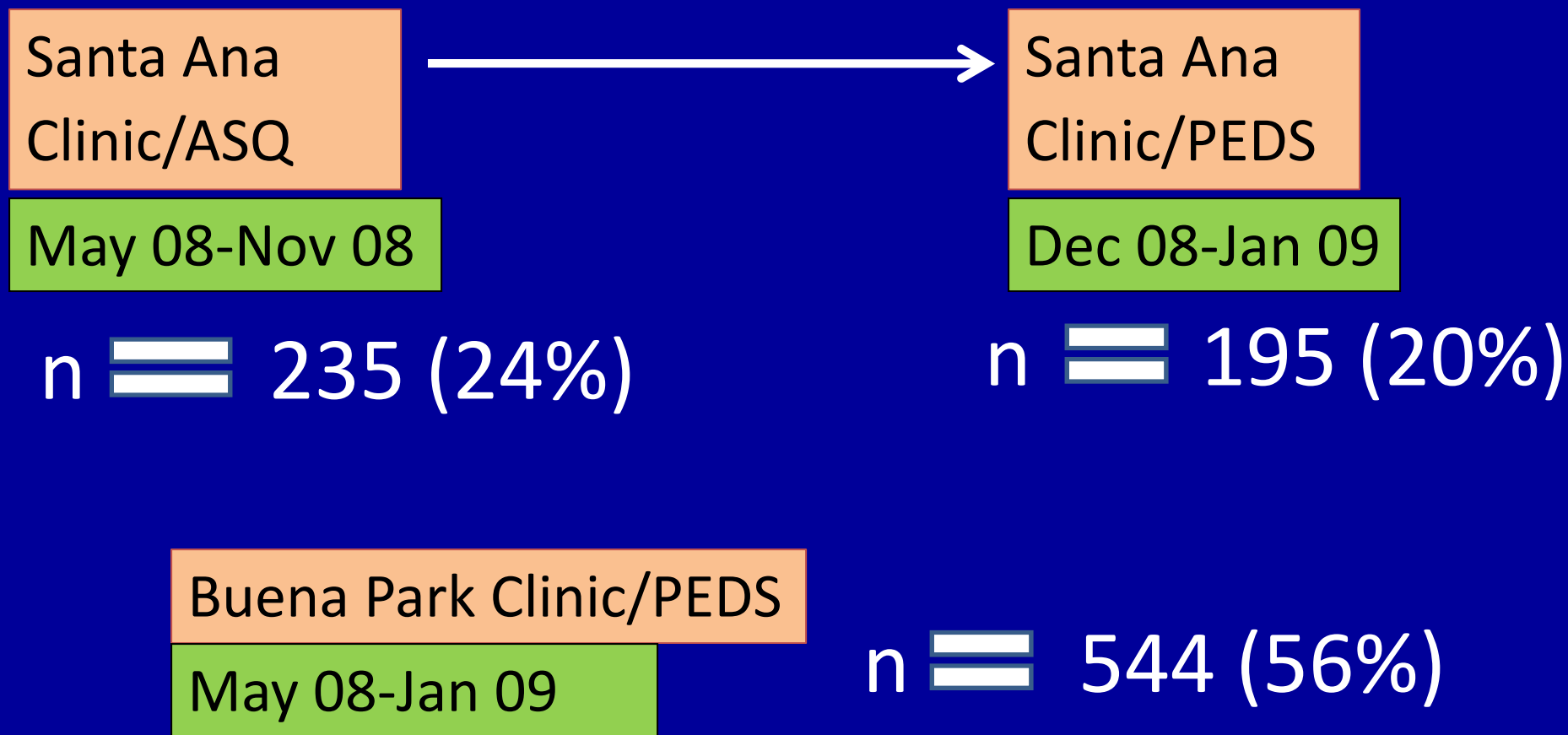
Source: State of California, Dept. of Finance  
\*Percentage not reported due to low numbers.

# Flow Chart – Developmental Screening & Referral



# Developmental Screening Project at HCA, County of Orange, CA

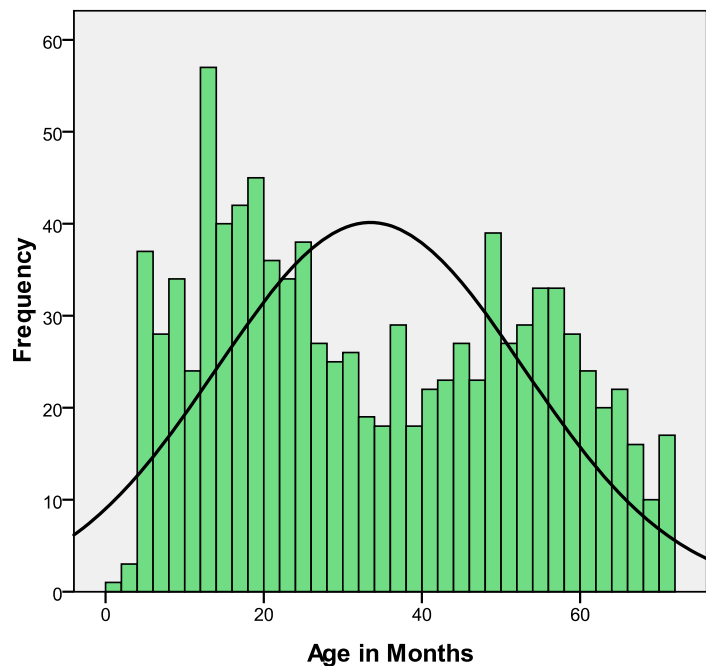
N = 2,742 (35.5% of clients for PE, n=974)



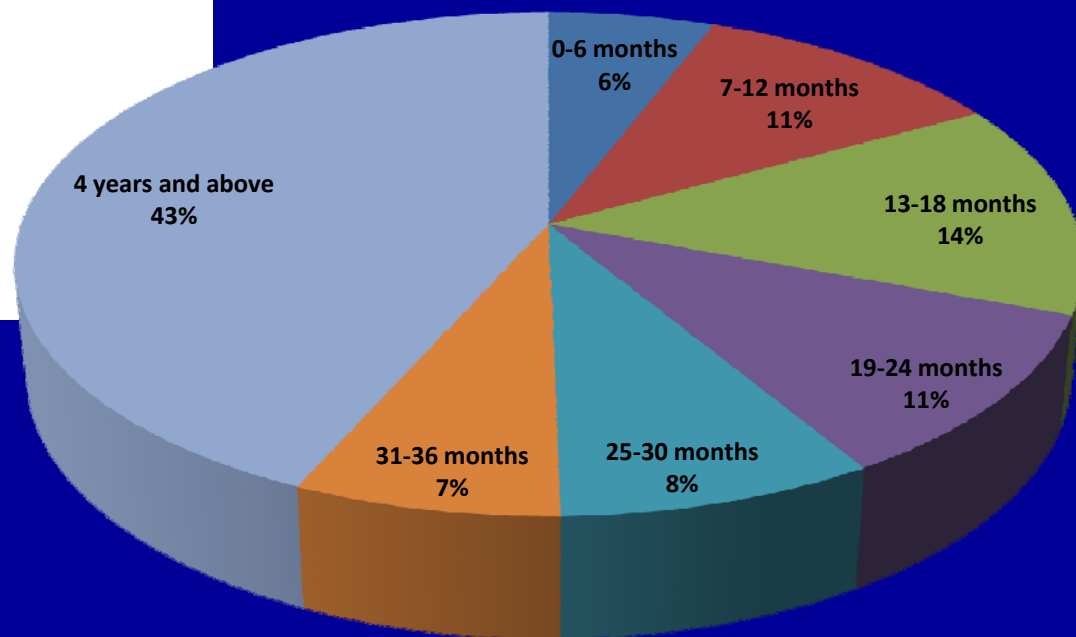


— Normal

### Histogram of Age in Months



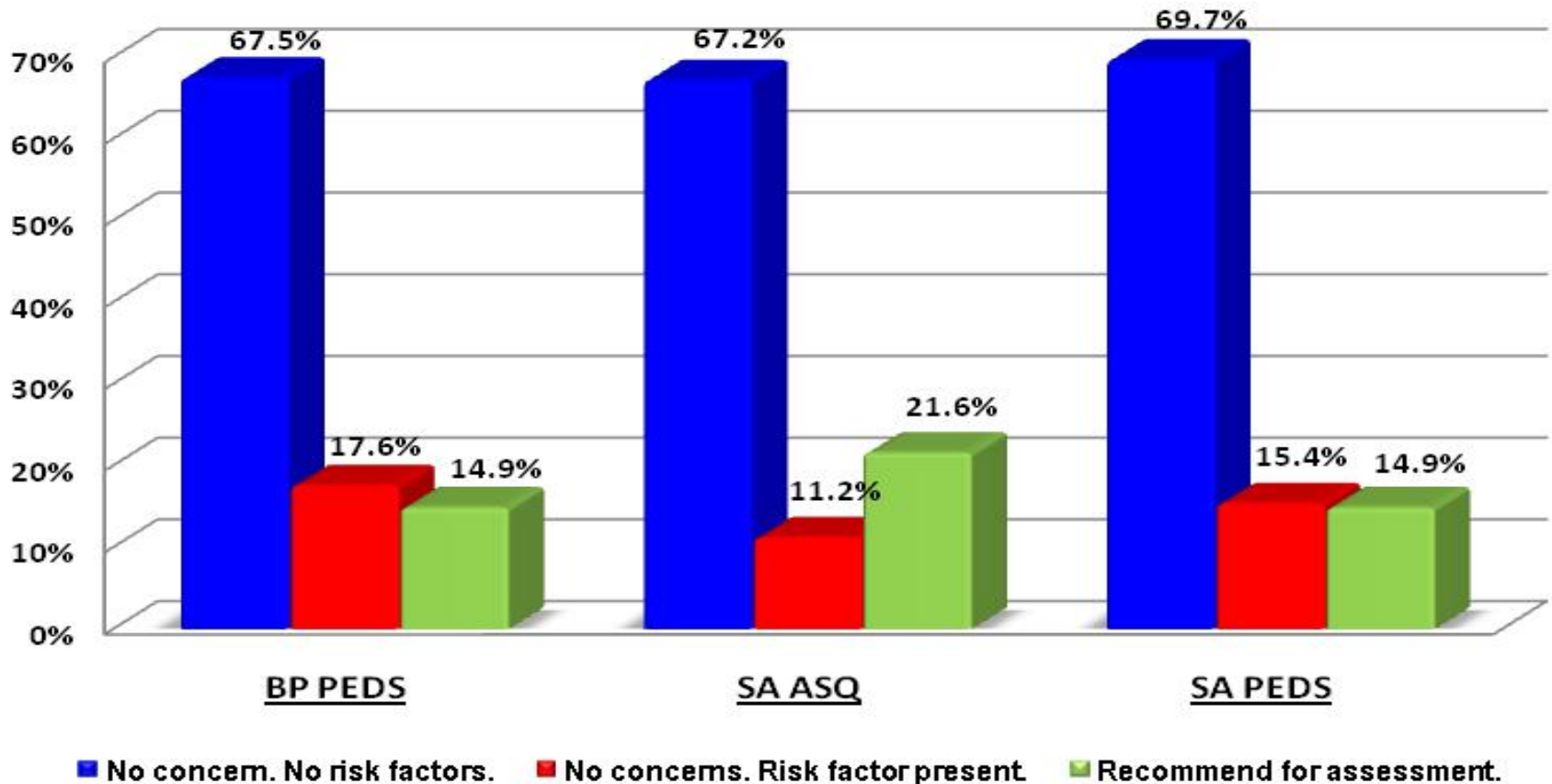
## Ages of Children Screened (n=974)



- Mean= 33.8
- SD=19.3666
- Range=1-71 months
- N=974

## % Distribution of Result of Screening by Clinic & Screening Tool

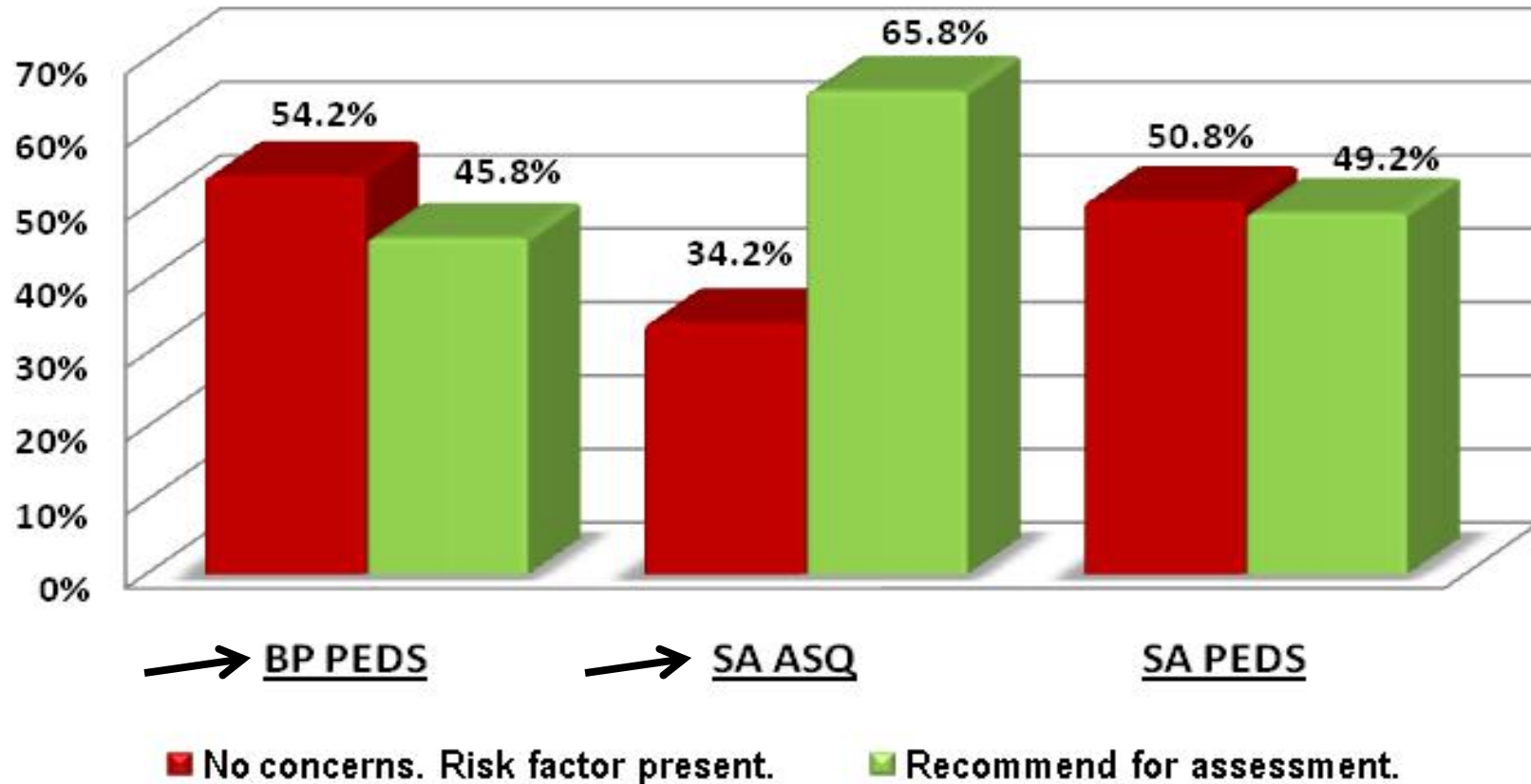
**32% had some type of concern**



Result of Screening	BP PEDS	SA ASQ	SA PEDS	Total
No concern. No risk factors.	367	156	136	659
No concerns. Risk factor present.	96	26	30	152
Recommend for assessment.	81	50	29	160
<b>TOTAL</b>	<b>544</b>	<b>232</b>	<b>195</b>	<b>971</b>

## % Distribution of Result of Screening by Clinic & Screening Tool

$p < 0.05$



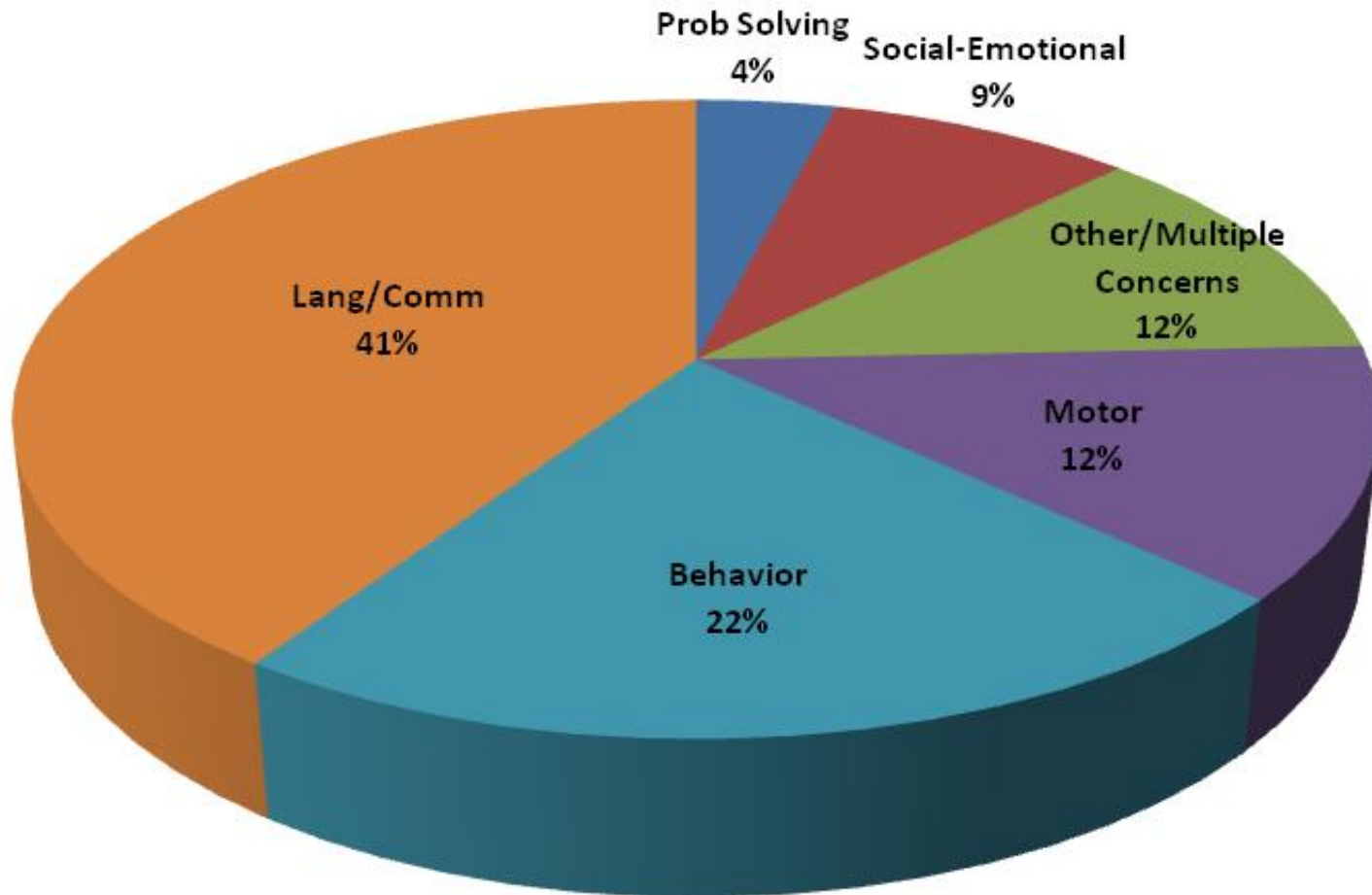
Result of Screening	BP PEDS	SA ASQ	SA PEDS	Total
No concerns. Risk factor present.	96	26	30	152
Recommend for assessment.	81	50	29	160
<b>Total</b>	<b>177</b>	<b>76</b>	<b>59</b>	<b>312</b>





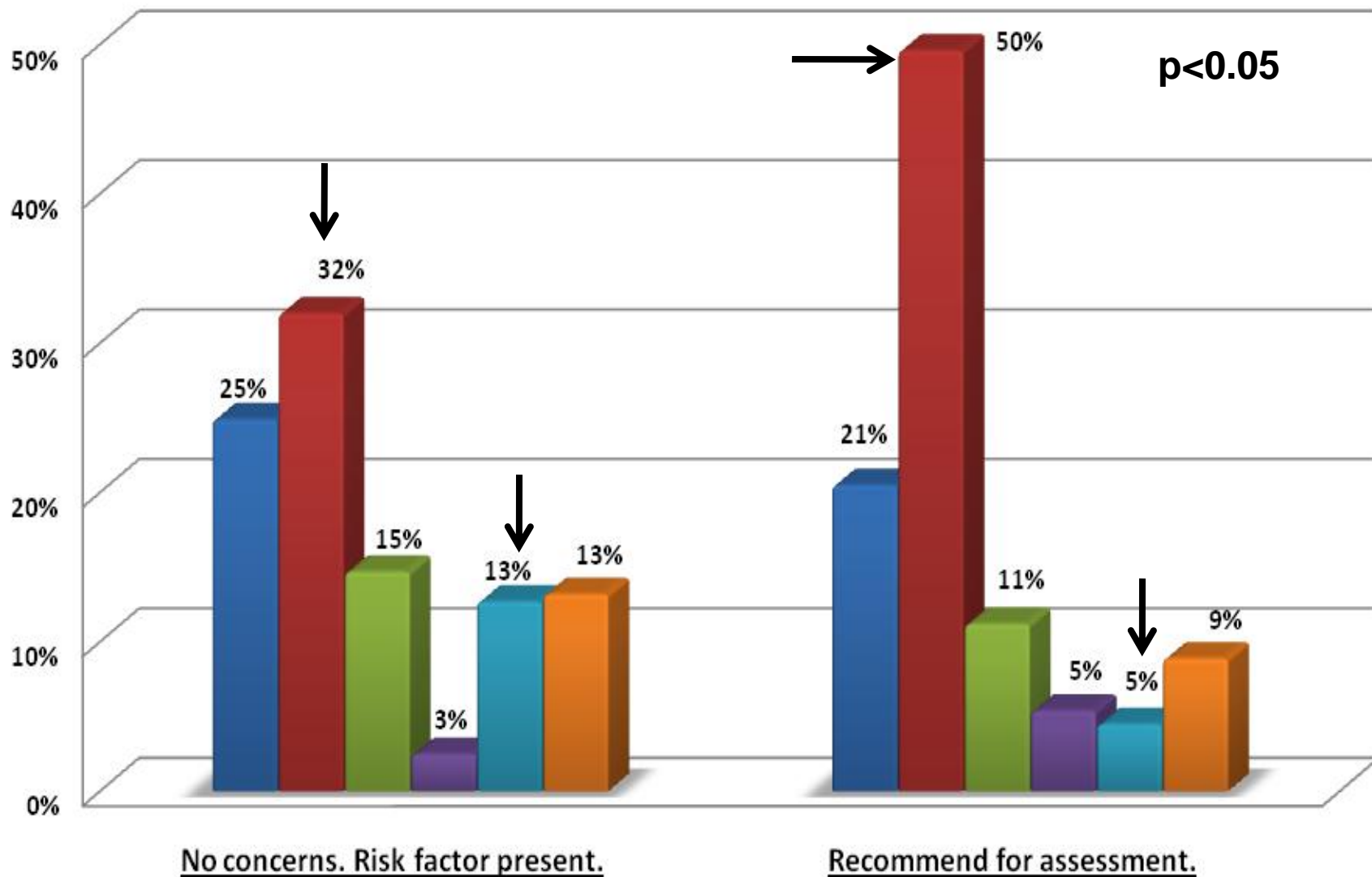
# Multiple Response Analysis – Type of Concerns

% Type of Concern, by Domain (n=428\*)



\*n=428, based on total number of responses. The total number of responses are more than the valid cases due to multiple responses

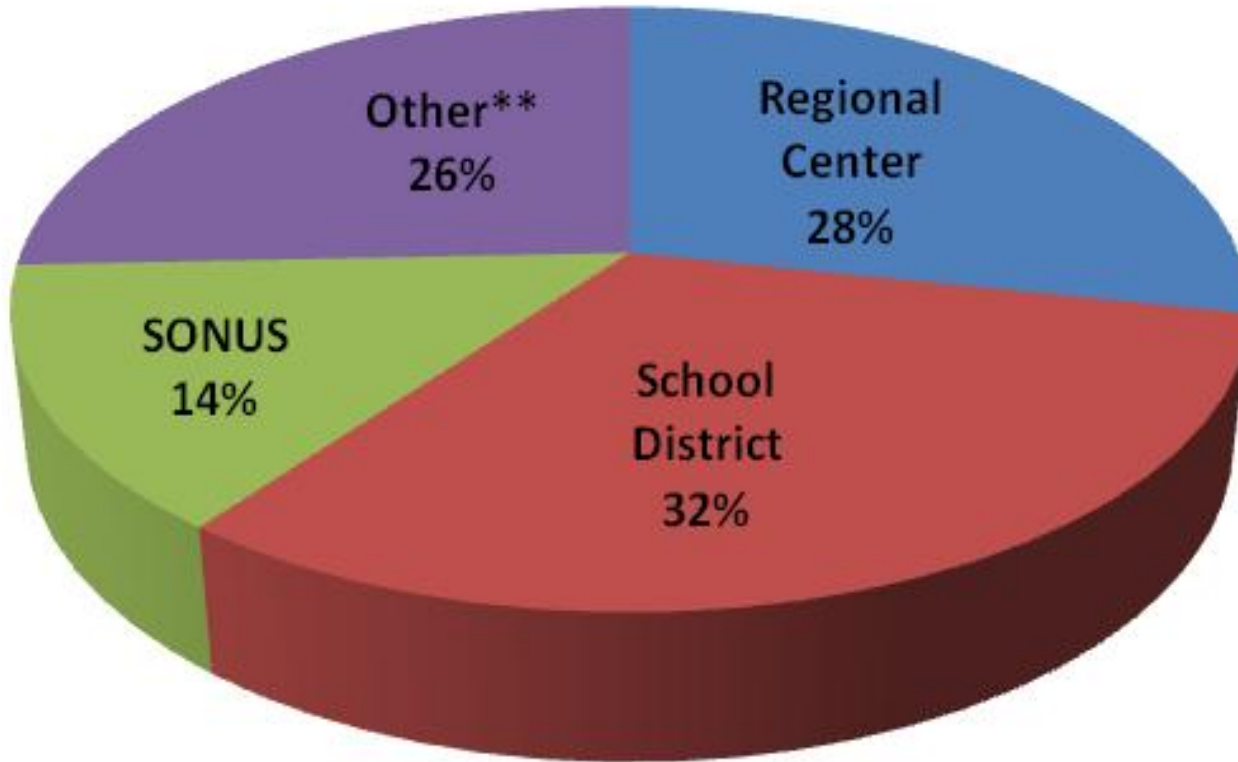
## Type of Concern (%) by Result of Screening



■ Behavior ■ Lang/Comm ■ Motor ■ Prob Solving ■ Social-Emotional ■ Other/Multiple Concerns

# Multiple Response Analysis – Referral

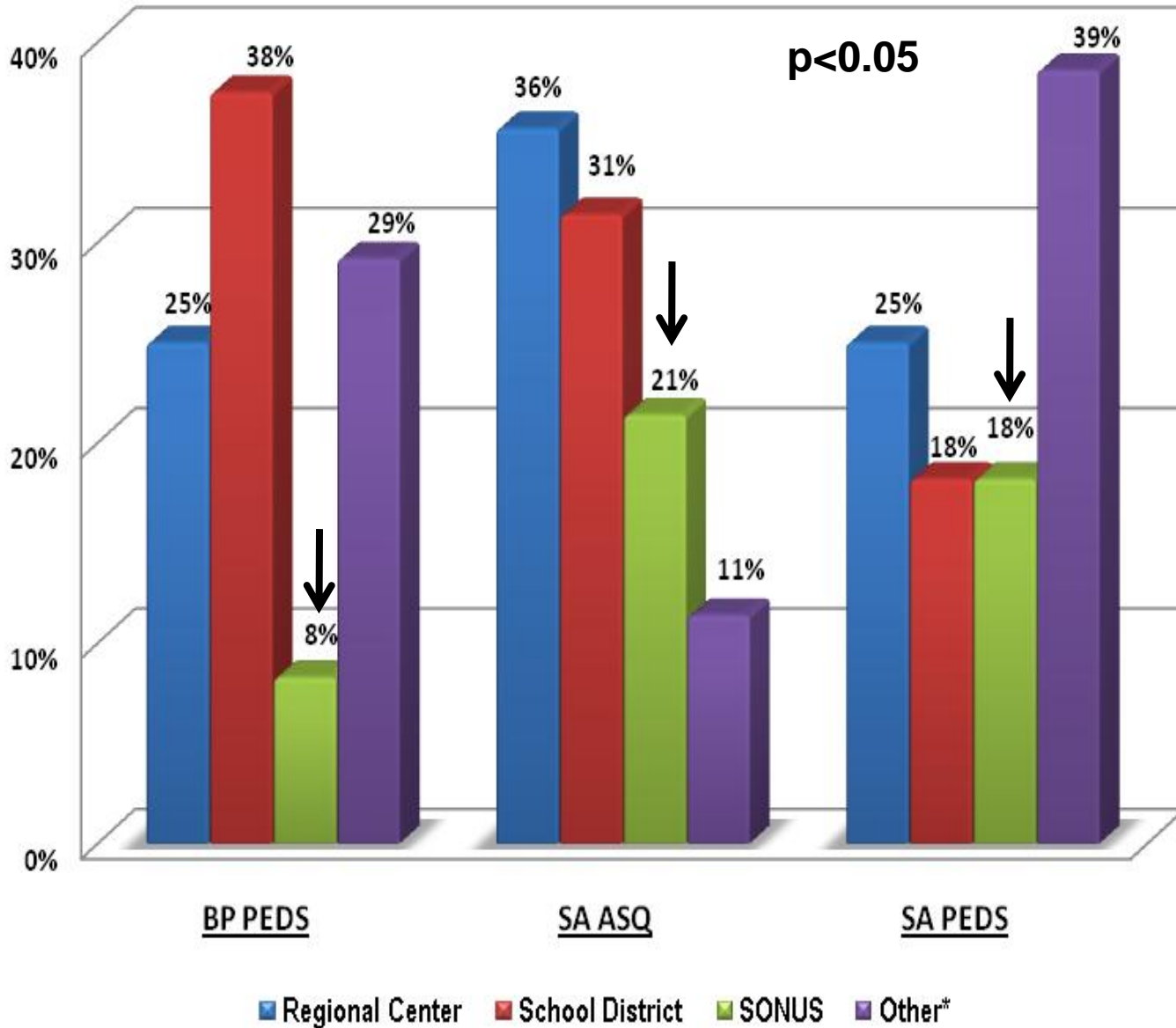
% Referral Agency (n=234)



\*n=234,  
based on  
total  
number of  
responses

\*\*Referral Agency, if “Other”- Help Me Grow, Private Plan Provider, Head Start, CCS, CUIDAR.

# Type of Referral (%) by Clinic & Screening Tool



\*Other includes:

- Help Me Grow
- Private Plan Provider
- Head Start
- CCS
- CUIDAR

# Summary

- Preliminary results: The pretest surveillance had 2.8% (95% Confidence Interval 2.08, 3.66) referral rate.

## 9 month pilot period: May 2008 to Jan 2009

By Screening Tool	ASQ	PEDS
Administered to "n="	235	739
Developmental Concern Rate	41.3%	44.8%
Referral Rate	29.8% (95%CI 22.81, 36.76)	22.2% (95% CI 18.79, 25.59)

<b>By Site</b>	<b>Santa Ana</b>	<b>Buena Park</b>
Administered to n=	430	544
Developmental Concern Rate	43.5%	44.3%
Referral Rate	26.5% (95%CI 21.65, 31.38)	22.2% (95% CI 18.11, 26.01)

<b>By Site &amp; Clinic</b>	<b>BP_PEDS</b>	<b>SA_ASQ</b>	<b>SA_PEDS</b>
Administered to n=	544	235	195
Developmental Concern Rate	44.3%	41.3%	46.2%
Referral Rate	22% (95%CI 18.11, 26.01)	29.8% (95% CI 22.81, 36.76)	22.6% (95%CI 15.89, 29.23)

# Strength and Weaknesses

- ↓ ASQ was time consuming, task oriented and detail oriented.
- ↑ PEDS was easier- generalized questions, less time consuming. But this also picks up false negatives.
- ↓ High non-response rate (59%) in follow-up using letters and phone calls, CERNER.
- ↓ Time, staff and billing/reimbursement.
- ↑ Pilot project helped to plan early intervention and catch the kids early. This was not a surveillance.

# Next Steps

- Follow up to see how many children referred diagnosed with true condition – **RCOC 55.6%, SONUS 29.9%**.
- Long term outcomes for children screened versus those not screened.
- Is ASQ or PEDS better for our population in terms of sensitivity and specificity.



# Using the Findings for CHDP providers

- Show clinics how we get 100% screening rates in our CHDP clinic.
- Evidence to our local providers of the value and worth of doing the screenings.
- Help identify the pros and cons in using each screening tool for our providers.
- Set local standards for referral rates for each tool as well as in higher risk populations.

# Comparison of Developmental Tools

	ASQ- Ages and Stages Questionnaires	PEDS- Parents' Evaluation of Developmental Status
<b>Type</b>	Parent Report	Parent Report
<b>Age Range</b>	Children from 2-60 months	Children from birth to 8 years
<b>Time (parent)</b>	5-10 min	2-3 min
<b>Time (scoring)</b>	5 min	5 min
<b>Reading Level</b>	4 <sup>th</sup> to 6 <sup>th</sup> grade	5 <sup>th</sup> grade
<b>Developmental Areas Addressed</b>	Communication, gross motor, fine motor, problem solving, and personal-social	Global/cognitive, expressive language and articulation, receptive language, fine-motor, gross-motor, behavior, social-emotional, and self-help
<b>Format</b>	30 questions; 19 questions for different age intervals	10 questions; same questions for all ages

	ASQ- Ages and Stages Questionnaires	PEDS- Parents' Evaluation of Developmental Status
<b>Sample Item</b>	<i>Does your child stack a small block or toy on top of another one?</i> (18-month questionnaire, fine motor area)	<i>Do you have any concerns about how your child talks and makes speech sounds?</i> (Expressive Language and Articulation Area)
<b>Scoring Strategy and Interpretation of results</b>	Answer choices are <i>yes</i> , <i>sometimes</i> and <i>not yet</i> . These are given a score of 10, 5 or 0, totaled and compared to cutoff points.	Answer choices are no, yes and a little. Yes or a little is considered a positive response. Parents' concerns are categorized. Frequency and type of concern directs user to five evidence-based responses: refer, reassurance, promote development, counsel, refer or do a secondary screen.
<b>Sensitivity</b>	70-90%	74-80%
<b>Specificity</b>	76-91%	70-80%
<b>Staff Required</b>	Paraprofessional to score	Paraprofessional to score

THANK YOU!



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