

# ***“Early Interventioners Assemble!”***

## ***Implementing the ASQ-3™ & ASQ-SE in a Medical Home Setting***

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1. Early intervention relies heavily upon early identification
2. Early identification relies heavily upon medical homes
3. And... medical homes must wield mighty (or evidence-based) developmental-behavioral screening tools (e.g., ASQ-3 & ASQ:SE) & developmental-behavioral promotion (e.g., Read Out and Read) to prevent future disasters



**Why Become a Screening & Surveillance  
Champion or Superhero?**

# Why is High-quality Screening & Surveillance So Important?

- Early Intervention (EI) improves long-term developmental outcomes (most especially in disadvantaged children with mild delays, autism or low SES/Medicaid)
- Improved outcomes at 18 years = higher achievement in math & reading + less antisocial behaviors, suicidal thoughts/attempts, smoking, alcohol & THC use (McCormick et al. *Pediatrics*, 2006)
- Pediatrician impression alone (surveillance without periodic screening) fails to timely identify & refer 60 – 80% of children with developmental delays
- For every \$1 invested in an early childhood developmental program, there is a 6-10% annual return rate in cost savings to society! (per Dr James Heckman, a Nobel Laureate in Economics & other well-respected economists)

# How Can You Make a Difference?

## AAP & Bright Futures: DB Promotion

- Developmental-Behavioral (DB) promotion should be re-conceptualized as a key component of high-quality DB surveillance (Marks, Glascoe & Macias, *Clinical Pediatrics*, 2011) & was missing in the 2006 AAP DS&S algorithm
- DB promotion makes the process of ASQ-3 & ASQ:SE screening safer (an Institute of Medicine's quality aim)
- Parent-report screening tools (e.g., ASQ-3 & ASQ:SE + age-appropriate Learning Activities enhances DB promotion by educating parents about developmental milestones & encouraging “special time” with their child
- “Special time” improves parent–child interactions and is an effective strategy for preventing behavior problems



# How Can You Make a Difference?

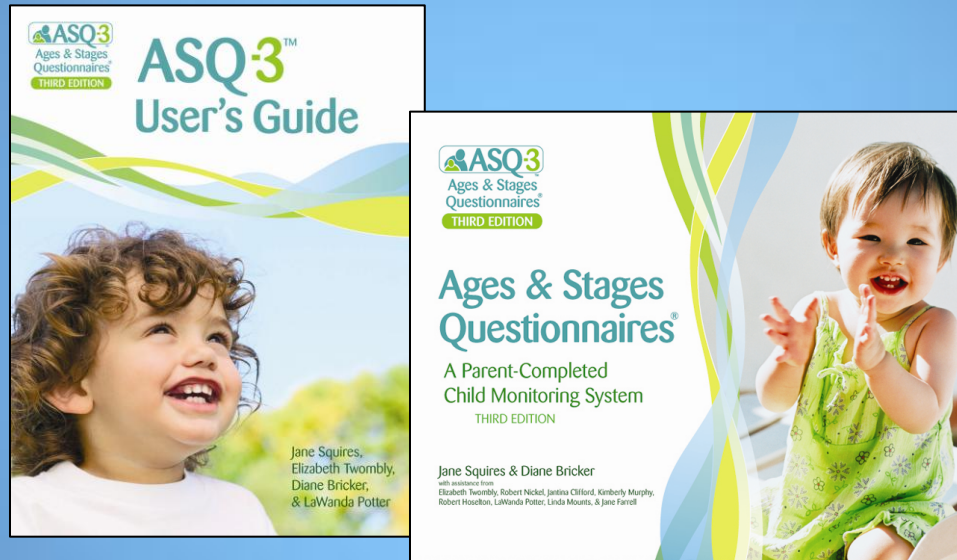
## AAP & Bright Futures: DB Promotion

- What else makes the process of screening safer and more effective?
- Reach Out and Read (ROR) has over 20 years of supportive evidence-based research & can be used in combination with the ASQ-3 & ASQ:SE



- What is ROR? Clinician gives a child a brand new ROR book + gives the parents age-appropriate literacy counseling + directly observes early literacy developmental milestones during the physical exam
- ROR is for every well-child visit from 6 months–5 years

# AAP General Developmental Screening Periodicity Schedule (0–5 yrs)



Use a general developmental screen (e.g., ASQ-3) routinely at 9, 18, 24 or 30 months + at 4 years (to measure “kindergarten readiness”) + as needed from 0–5 ears when “at risk” for a developmental delay

# ASQ-3: It's Psychometrically Sound

- Standardization: nationally representative (appropriately diverse), and general/naturalistic sample
- Standardization: sample size = 12,695 (with 352–2,088 children per age interval) which is really good
- Inter-rater reliability = 93%
- Test-retest reliability = 93%
- Last re-normed in 2009 on appropriate & equivalent reference (gold) standard testing
- Sensitivity: 0.86
- Specificity: 0.85
- Good concurrent validity that's been closely replicated in a primary care setting (Limbos & Joyce, Journal of Developmental Behavioral Pediatrics. 2011)
- Favorably cited by the American Academy of Pediatrics & recommended by the American Academy of Neurology, Child Neurology Society, and First Signs.



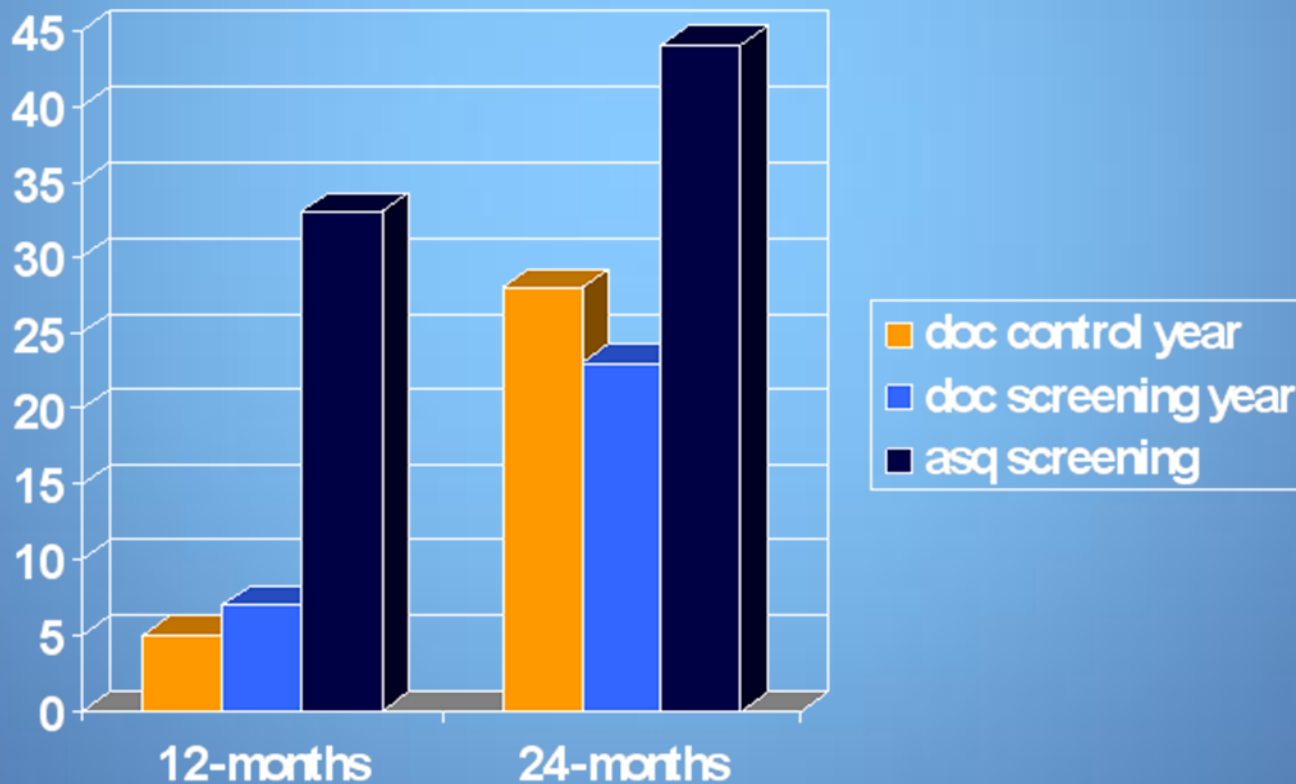
## ASQ-3: It's Feasible

- Parent-report (with observable test items)
- Time frame: 10–20 minutes to complete & score
- 30 items (scored) + 6–7 overall items per questionnaire
- 21 questionnaires with age range = 1 mo–5.5 yrs
- Reading level: 4<sup>th</sup>–5<sup>th</sup> grade
- Available commercially in English and Spanish. Multiple other languages in development
- Clear, straight-forward scoring & interpretation guidelines
- Multiple options available for online use
- Can be used with the age-appropriate ASQ-3 Learning Activities (available in English & Spanish)
- Already used by Head Start & most IDEA early intervention & early childhood special education (ECSE) agencies

## Impact of Implementing the ASQ at 12 & 24 mo.

Compared to “pediatrician developmental impression” alone, the ASQ led to a 5 to 6-fold increase in EI referrals at 12 mo. & a 2-fold increase at 24 mo. & EI eligibility rates soared upward.

Hix, Marks et al., *Pediatrics* 2007



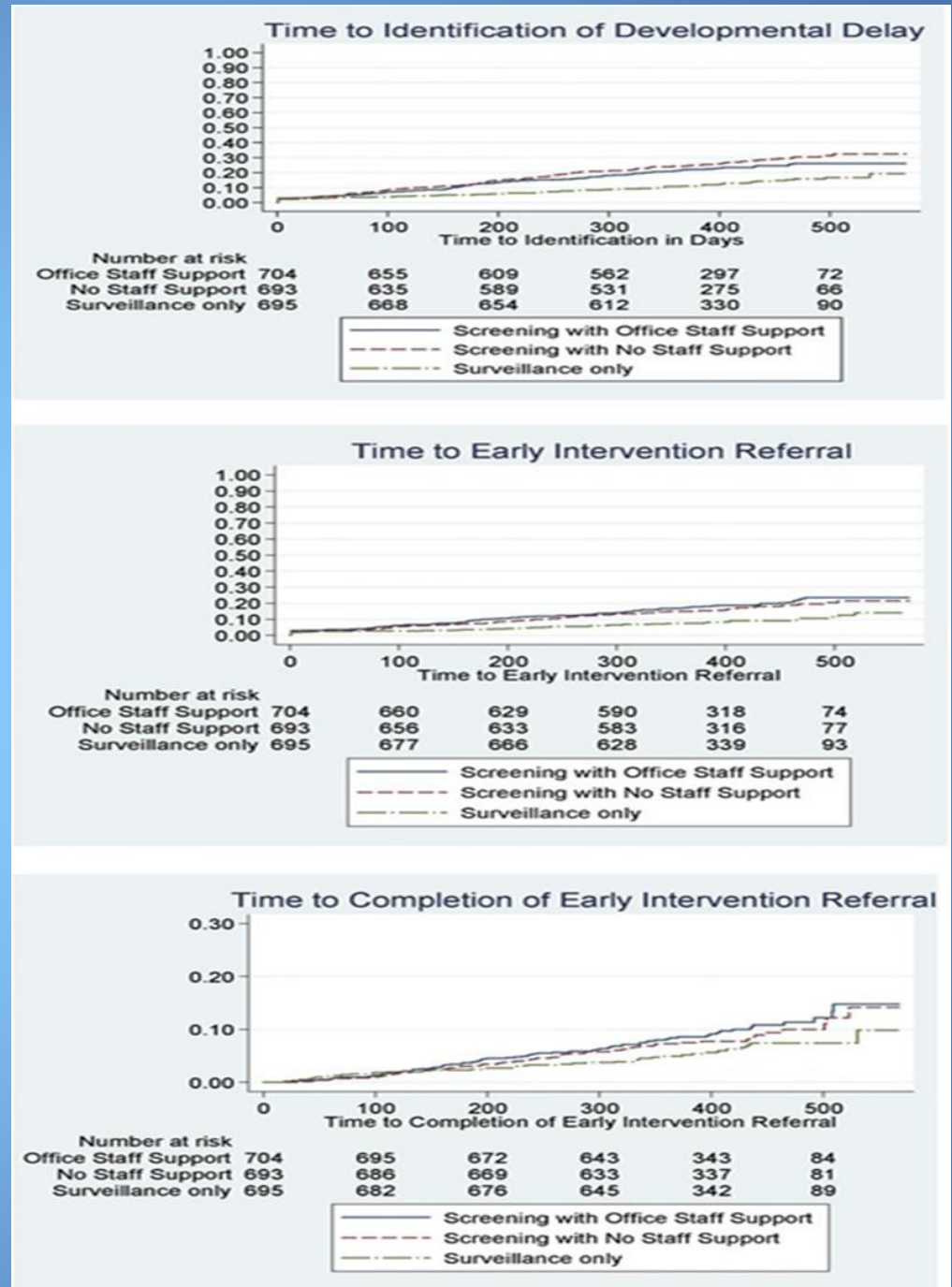
Effectiveness of  
Developmental Screening in  
an Urban Setting, Guevara  
et al., Randomized  
Controlled parallel-group  
Trial, 2013

Screening (ASQ-2 & M-CHAT) groups (with or without office support) significantly improved outcomes compared to surveillance only (no screening) groups for:

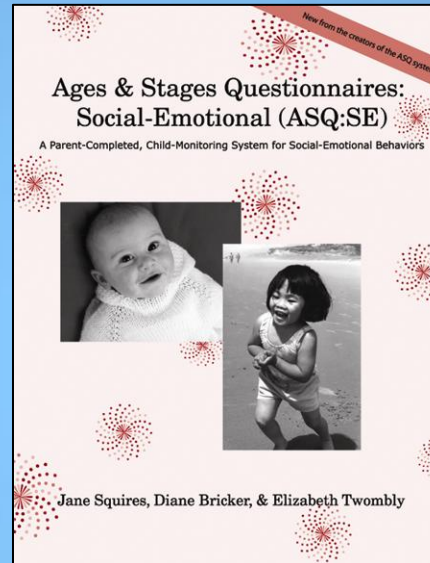
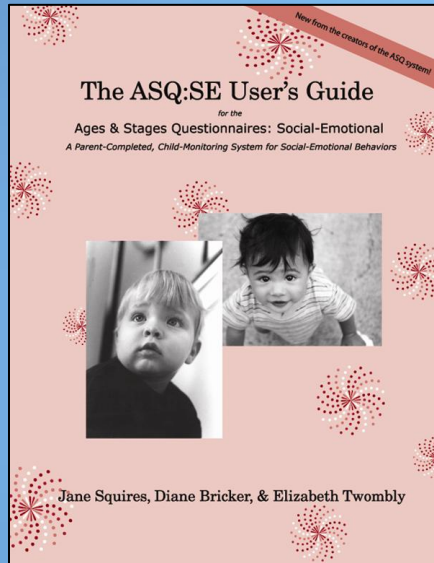
(A) Timeline to identification of developmental delay

(B) Time to EI referral

(C) Time to completion of EI referral



# AAP Social-Emotional Screening Periodicity Schedule (0–5 yrs)



Use a SE/mental health screen (e.g., ASQ:SE) routinely at 5 yrs + as needed from 0–5 yrs. Some practices use the ASQ:SE routinely at 4 yrs to help measure “kindergarten readiness”

# ASQ:SE: It's Psychometrically Sound

- Standardization: nationally representative (appropriately diverse), general/naturalistic sample
- Standardization: sample size = 3,014 (with 298–471 children per age interval) which is really good
- Test-retest reliability = 94%
- Normed on appropriate & equivalent reference (gold) standard testing
- Sensitivity: 0.71 – 0.85
- Specificity: 0.90 – 0.98
- Favorably cited by the American Academy of Pediatrics (AAP) & other professional organizations



# ASQ:SE: It's Feasible

- Parent-report (items based on parental recall)
- Time frame: 10–15 minutes to complete & score
- 19–33 questions per questionnaire
- 8 age-specific questionnaires & age range = 3 mo–5.5 yrs
- Reading level: 5<sup>th</sup>–6<sup>th</sup> grade
- Available commercially in English and Spanish
- Clear, straight-forward (refer/no refer) scoring
- Multiple options available for online use
- Can be used with the age-appropriate ASQ:SE Activity Sheets (available in English & Spanish)
- Already used by Head Start & IDEA early intervention (EI) & early childhood special education (ECSE) agencies

# Dr. Marks' ASQ-3 and ASQ:SE Periodicity Schedule

online ASQ-3: 6, 12, 24 and 36 months

online ASQ:SE: 18 months and 4 years

- And, many medical homes are now using the online ASQ-3 at every well-child visit from 2 months–5 years
- “As needed” screening just doesn’t work well in primary care
- Web-based ASQ-3 & ASQ:SE screening has made this approach more feasible & increases parent satisfaction
- Whatever periodicity schedule you adopt, recognize that getting doctors to change their day-to-day practice requires a team of super heroes.
- Every team of “Early Interventioners” needs...



## The Screening Champion (i.e., a Team Leader)

Every pediatric practice needs a Nick Fury

Key characteristics = adaptable to change or “early adopter,” positive outlook, knowledgeable about early detection, & motivated to save the world from environmental risk factors!

In a busy practice with so many competing demands, how can we promptly identify...

15% of children with developmental disabilities?

21% of children with mental health disorders?

1. Assemble your early identification team (a scheduler, receptionist, nurse, clinician, resource person, office manager, IDEA agency representative, etc.)
2. Ask & answer key implementation questions
3. Discuss your implementation plan with the team and then map out your office flow procedures

# “Nuts & Bolts” of Implementing the ASQ-3 in a Medical Home

*Example: Overview of ASQ-3 Office Flow Procedures at PeaceHealth Medical Group, Eugene Oregon*

1. Scheduler (i.e., Patient Access Specialist)
2. Parent ASQ Reminder System (automated phone call 2 weeks prior to well-child visit)
3. Receptionist (retrieves or delivers ASQ-3)
4. Nurse (double checks ASQ completion & scores the ASQ-3)
5. Pediatrician (performs surveillance components 1, 2, 3 and 4—refer to Figure 6.1 algorithm in the book “Developmental Screening in Your Community”  
<http://products.brookespublishing.com/Developmental-Screening-in-Your-Community-P666.aspx>)



# **“Nuts & Bolts” of Implementing the ASQ-3 in a Medical Home**

*Example: Overview of ASQ-3 Office Flow Procedures*

6. Resource Staff (an “as needed” step)
7. Pediatrician (developmental promotion + interpret/discuss ASQ-3 results with parents)
8. Resource Staff (takes action on pediatrician orders & generates needed referrals)
9. System-wide Referral Care Coordination
10. Quality Improvement or a Plan-Do-Study-Act (PDSA) Cycle



## 1. Patient scheduler “The First Early Interventioner”

“Ma’am, please don’t forget to complete the online ASQ-3 two weeks before your child’s WCV. It’s important.”



## **2. Parent ASQ Reminder System**

Parents get an automated phone call 2 weeks prior to their child's targeted WCV (e.g., 9, 18, & 24 months)



### **3. Receptionist (retrieves online ASQ-3 or delivers print ASQ-3 to parents)**

“If you haven’t already emailed or sent us your scored online ASQ-3 results, please complete this questionnaire in a quiet corner of the waiting room with the ASQ-3 toys. This is an important part of your child’s well-child visit.”





#### 4. If needed, nurse (i.e., Ironwoman) reiterates...

“The ASQ-3 is an important part of your child’s WCV. If you haven’t already completed it online, then please fill out this paper ASQ-3 so we can thoughtfully score your answers.”





#### **4. Nurse (double checks ASQ-3 completion)**

“Systems analyzing”: Literacy problems? Correct age-interval & language-version ASQ-3 given? Were all ASQ-3 items (& pages) completed?

## 4. Nurse Scores the ASQ-3 (vs. Receptionist vs. other Medical Assistant)

- “Yes” = 10 points; “Sometimes” = 5 points; “Not yet” = 0 points
- Then add up the total points in each domain
- Then transfer domain scores + overall (yes/no) responses to the “ASQ-3 Information Summary” sheet to assist with interpretation
- Online ASQ-3: scoring is done automatically using the corrected age for preterm infants (born < or = 36 6/7 weeks gestational age)

**1. SCORE AND TRANSFER TOTALS TO CHART BELOW:** See *ASQ-3 User's Guide* for details, including how to adjust scores if item responses are missing. Score each item (YES = 10, SOMETIMES = 5, NOT YET = 0). Add item scores, and record each area total. In the chart below, transfer the total scores, and fill in the circles corresponding with the total scores.

| Area            | Cutoff | Total Score | 0 | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 |
|-----------------|--------|-------------|---|---|----|----|----|----|----|----|----|----|----|----|----|
| Communication   | 13.06  |             | ● | ● | ●  | ○  | ○  | ○  | ○  | ○  | ○  | ○  | ○  | ○  | ○  |
| Gross Motor     | 37.38  |             | ● | ● | ●  | ●  | ●  | ●  | ●  | ●  | ○  | ○  | ○  | ○  | ○  |
| Fine Motor      | 34.32  |             | ● | ● | ●  | ●  | ●  | ●  | ●  | ○  | ○  | ○  | ○  | ○  | ○  |
| Problem Solving | 25.74  |             | ● | ● | ●  | ●  | ●  | ●  | ○  | ○  | ○  | ○  | ○  | ○  | ○  |
| Personal-Social | 27.19  |             | ● | ● | ●  | ●  | ●  | ●  | ○  | ○  | ○  | ○  | ○  | ○  | ○  |



## 5. Pediatrician's role in team-based screening

## 5. Pediatrician: DB Surveillance

1. Skillfully elicits caregivers' concerns
2. Gathers & maintains a DB history (including reviewing previous ASQ-3 & ASQ:SE results)
3. Identifies DB risk & protective factors (past medical, family and social histories)
4. Makes observations about the child & parent–child interaction (physical exam)
5. Promotes DB wellness (ASQ-3 Learning Activities, Reach Out & Read, Bright Futures anticipatory guidance, etc.)

## 5. Pediatrician: Interpreting the ASQ-3

- Were any ASQ-3 items (or pages) skipped?
- Were any ASQ-3 items marked “not yet”? If yes, then have the parents ever tried that particular developmental task?
- Is there a “teachable moment” to incorporate developmental promotion into the screening process?
- Review all answers in the ASQ-3 “overall” section and “interpret” in the context of the clinician’s less structured DB surveillance



## 6. Resource staff (an “as needed” step)

- If the online ASQ-3 was not completed but the caregiver did complete the print ASQ-3, then resource (or receptionist) must score the ASQ-3 that same day to capture 96110 reimbursement
- If parents have low literacy skills, resource staff may be needed to help complete ASQ-3 (difficult to do in a busy primary care setting).
- If Medicaid-eligible, young (< 21 years old) or Spanish-speaking parents, the ASQ-3 really needs to be completed immediately after the WCV and then, scored + interpreted by the clinician that same day to capture 96110 reimbursement

# 7. Pediatrician: Discussing ASQ Results with Caregivers and Taking Action!

Super Hero Pediatricians...

- Discuss the child's "areas of strength" first
- Discuss the child's "suspected challenges" second
- Resist using diagnostic labels
- Do NOT take a "wait and see" approach with a concerning ASQ-3 result or clinical impression
- DO take a "let's play it safe and give them a call" approach (i.e., they refer when indicated)
- DO reliably communicate their recommendations with office resource personnel



## 8. Resource Staff: The Mighty Early Interventioner!

- Receives an electronic “lightning bolt” encounter from the pediatrician about his or her impression & ASQ-3 results plus recommended “next steps”
- Takes “lightning bolt” action upon the pediatrician’s recommendations
- When an IDEA (EI/ECSE) referral is recommended, a statewide form is faxed to the IDEA (EI/ECSE) agency so the referral can be tracked!

Ok, so who is

***The Incredible Hulk?***



## Children with Social-Emotional “Challenges”

(e.g., child with a positive ASQ:SE) who could be a super hero too if promptly linked with mental health specialists, evidence-based parenting programs, Early Head Start, Head Start, etc.



## 9. System-wide Care Coordination

- Invaluable for reliably linking children with suspected problems to IDEA (EI/ECSE) agencies
- Invaluable for finding alternative community resources for children deemed “ineligible” for IDEA services
- Invaluable for linking young children with social-emotional challenges to the most appropriate community resource(s)
- Remember: without the help of your assembled team, little Bruce Banner could transform into a destructive monster but he also possesses the potential to transform into a superhero, too!

# 10. Quality Improvement

## Plan-Do-Study Act (PDSA) Cycle

1. How can we better incorporate evidence-based DB promotion with the process of DB screening?  
Do: Reach Out and Read program
2. How can we integrate or co-locate early childhood developmental or mental health specialists into our medical home setting?  
Do: Healthy Steps Program
3. How can we better organize & utilize system-wide care coordination services?  
Do: *Help Me Grow (HMG) or Assuring Better Child Development (ABCD) III initiatives*

# 10. Quality Improvement: Plan-Do-Study-Act (PDSA) Cycle

- What is our overall ASQ return/completion rate?
- What % of children presenting to a targeted WCV (e.g., 9, 18 and 24 months, plus 4 years) have completed the ASQ-3?
- What % of IDEA-referred children were “linked” to our IDEA (EI/ECSE) agency in a timely manner?
- What % of IDEA-referred children eventually ended up receiving IDEA (EI/ECSE) services?
- Should we rethink our ASQ-3 & ASQ:SE periodicity schedule?
- How can we examine parents’ feedback about our clinic’s screening, referral and follow-up processes?
- Should we rethink our office implementation procedures?

# 10. Quality Improvement

## Plan-Do-Study-Act (PDSA) Cycle

- Implement online ASQ-3 & ASQ:SE screening
- Slash your practice's paperwork time, streamline data management processes, eliminate the costs of photocopying & mailing questionnaires, & ensure accuracy with automated scoring & questionnaire selection in the parent's language of choice
- ASQ Pro (for single-site programs & practices)
- ASQ Enterprise (for multi-site programs)
- Patient Tools<sup>®</sup> or ASQ-PTI
- CHADIS<sup>®</sup> (Child Health and Development Interactive System)
- <http://agesandstages.com/asq-products/web-based-screening/>

# DEVELOPMENTAL SCREENING

An Integrated  
Approach for  
Connecting  
Children with  
Services

in Your Community



DIANE BRICKER | MARISA MACY  
JANE SQUIRES | KEVIN MARKS

Read this book for systematic, big-picture guidance and specific information about how to develop or strengthen your own community's early detection/Child Find system





## ***“EARLY INTERVENTIONERS ASSEMBLE!”***

*Now go forth, make the necessary changes in your practice!*

*Theme of this presentation = work as a team!*