Developmental & Mental Health Screening

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Developmental Problem Detection Priority

"Early identification of developmental disorders is critical to the well-being of children and their families. It is an integral function of the primary care medical home and an appropriate responsibility of all pediatric health care professionals." AAP, 4/15/07

Reasons for Primary Care Screening

- 12-22% of children have deve. or behavioral disorders
- 40-50% of primary care visits involve behavioral, psychosocial or developmental issues
- 75% of children with psychiatric disorders are first seen in primary care
- Early identification and trt of DD leads to better outcomes: more HS graduation, fewer teen pregnancies, more employment, less criminal behavior and violent crime
- Lower societal costs from earlier intervention
- Screens take less time than "reassurance", are data for referral, and a baseline to track progress
- PCP may be the only professional involved before school
- Increased patient regard and satisfaction

Developmental Screening vs Surveillance*

- Developmental Surveillance-
 - Eliciting & attending to concerns
 - Maintaining a developmental history
 - Making accurate observations of the child
 - Maintaining an accurate record documenting process and findings
 - □ Identifying risk & protective factors
- Developmental Screening- use of a standardized instrument whether a concern is present or not

Surveillance vs Screening

ASQ vs Surveillance

- 11/95 identified as delayed by gold std testing
 On ASQ, 15/95 failed; 28/95 monitor.
- Of 11 truly delayed, 5 failed on the ASQ and 5 scored monitoring zone.
- □ 10/15 scoring "fail" on the ASQ were not detected by surveillance
- Other studies of surveillance: Sens. 0.14-0.54, Spec. .69-1.0

Developmental Screening Now

- 1/2 of families report ever receiving a developmental assessment
- 60% of MA children not screened; but 1.35x more than insured, private patients
- 71% of ped. report assessing milestones by informal clinical assessment
- Clinical assessment alone only detects 30% of children with DD
- Only 20% to 30% of children with DD are identified before school
- More recently, 48% of pediatricians use standardized developmental screening tests routinely
 - □ Selective "screening" when suspect-45%
 - □ Only score results 50% of time

AAP Recommends Surveillance and Screening

- Surveillance at all visits
- All children, most of whom will not have identifiable risks or whose development appears to be proceeding typically, should receive periodic *developmental screening* using a standardized test.
- In the absence of established risk factors or parental or provider concerns
 - screen global development at:
 - 9 months
 - 18 months
 - 24 or 30-months
 - screen using a domain specific tool for ASD at 18, and 24 or 30 months

Barriers to Screening

(AAP survey, 5/07)	
Time	83%
Staff time to screen	49%
Reimbursement	46%
Language barrier	19%
Lack confidence re screening	10%
Lack of knowledge of treatment	9%
Lack of referral resources	8%
Do not trust validity of tools	8%
Do not think screening is ped role	8%

Also problems once detected

- Lack of training in diagnostic evaluation and management
- Lack of knowledge of or access to community resources for families
- Failure to refer (61% in Mass.)
- Involvement of multiple professionals & agencies without coordination of information

General problems with screening

- Potential labeling
- Lack of agreement between raters
- Under reporting esp. for internalizing behaviors
- Need valid administration and scoring
- May be cultural bias, literacy issues
- Availability of intervention

Why screen if intervention is unavailable?

- Families already know there is something wrong; it is disrespectful not to clarify the problem
- Family may be frightened, push the child, promote behavior problems
- Child feels defeated, becomes defiant
- Siblings may be born with same problem
- Family loses trust in medical system for not acknowledging
- Families can cope better, garner support, deal with child better, find steps on their own once diagnosed

Criteria for a screening tool*

- Parent & professional time required
- Global vs Domain-specific
- Psychometric properties
 - □ Sensitivity >0.7 and Specificity >0.8
 - □ Reliable ≥80%
 - Validation: gold std., appropriate population used
- Languages available
- Cost/billable

Global Developmental Screening Tools

Ages & Stages Questionnaire-3

- General developmental screen
- 4th-6th grade reading level per Flesch-Kincaid
- 21 ages- continuous from 1-66 months
- 5 areas, 6 items each, in developmental order
 2 items at 75 DQ, 2 at 100 DQ
 - Communication
 - Fine motor
 - Gross motor
 - Problem solving
 - Personal-social
- 10-15 minutes, supposed to use materials with the child but accurate without this
- English and Spanish

ASQ-3 Validity

- Overall agreement with gold standard test of child 86% (83-88)
- Test retest in 2 weeks N=145, 92%
- Inter-rater reliability N=107, 93%
 - Intra class agreement .43-.69 with communication lowest at .43
- Sensitivity .86, Specificity .85
- Under referral 1-13%
- Over referral 6-13%

PEDS:DM

- 0-11 years
- Validated on 1619
- Sens. 0.75-88, Spec. 0.81-87
- Queries all developmental domains (fine and gross motor, expressive and receptive language, socialemotional, self-help, academic/preacademic)
- 1 item/domain at each age level; 6-8 per encounter
- Clinician administered or parent report
- "Assessment level" version has more items per visit and yields age equivalent

PEDS: Parents' Evaluation of Developmental Status

- Developmental Screening Test for < 8 yrs</p>
- 10 question parent questionnaire
- English, Spanish and Vietnamese
- Parents complete in 5 minutes (written at 4th to 5th grade level)
- Requires online assessment of free text
- Sensitivity 75%; Specificity 74%
- Disadvantage: Validation study not strong

Survey of Wellbeing of Young Children (SWYC) (Sheldrick, Perrin, 2013)

- cognitive, language, motor, social-emo.
 development, family risk factors (parental depression, conflict, or substance abuse, and hunger) and autism
- 12 age forms; about 40 questions on each
- 0 = not yet; 1 = somewhat, and 2 = very much.
 Score look up table ~ <10 below ave
- Sens. 0.81 and Spec. 0.76 vs ASQ screener
- 10-15 min

Autism Specific Screening Tools

Early Autism - Key Points

- 1:55 US children are on the Autism Spectrum.
 Early diagnosis of autism is possible for some children as early as 14 months
- Some children don't manifest autism until 24 months or shortly thereafter
- 25-50% appear normal then regress in 2nd yr
- Early detection is essential, or social gains are minimal in the early years
- Early intervention may result in improvements in core deficits of autism
- Alleviate existing parental concern and begin parental support (Baird et al., 2001)
- Genetic counseling

Screening for Autism- AAP

- Routinely at 18 and either 24 or 30 months
 Plus
 - □ Any encounter when parent raises concern
 - □ Low birth weight children
 - □ Siblings of children with ASD

Is a general screen enough to detect ASD?

- Of those who screened positive for developmental concerns on the PEDS (n = 38), 16% screened positive M-CHAT;
- Of those who did not screen positive for developmental concerns on the PEDS (n = 114), 14% screened positive for ASD on the M-CHAT (p = .79).

Tools for Early Autism Screening

- M-CHAT-R
- CSBSDP-ITC
- POSI
- Q-CHAT

Promising for Younger Children

- Communication and Symbolic Behavior Scale Developmental Profile (CSBSDP) - Infant Toddler Checklist (ITC) (Wetherby & Prizant, 2008)
 - □ 24 items emotional communication, receptive and expressive speech, and symbolic behavior
 - □ Prediction from 12 mo check up (Pierce, et al, 2011)
 - 10 479 infants screened 32 w ASD; PPV: 0.17; .75 +DD
- Gesture section of the MacArthur-Bates
 Communicative Development Inventory (CDI)
 - □ Best predictor at 12 mo not ITC
 - Vaness, et. al., 2012
- Quantitative CHAT (Q-CHAT)
 Dimensional scale

Parent's Observations of Social Interactions (POSI) (Smith, Sheldrick, Perrin 2013)

- 7-item screen for ASD for 16-36
- Sample 1-213 children aged 18-48 mo presented to a developmental clinic had internal reliability alpha 0.83). Sens. 0.89 and Spec 0.54
- Sample 2- 235 children aged 16-36 primary care and subspecialty had Sens. 0.83 and Spec.0.75 v 84% for MCHAT

MCHAT-R

(Modified Checklist for Autism in Toddlers-revised)

- 20 items from M-CHAT
- 5 minutes
- 18,989 screened
- M-CHAT-R total score ≥3 identifies nearly all screen-positive cases. Should do M-CHAT-R F/U
- 54% of children positive on M-CHAT/F had ASD, and 98% significant developmental concerns.
- M-CHAT-R total score >= 8 serves as an appropriate clinical cutoff, refer immediately
- But ave age in sample was >20 months

MCHAT-R F/U Interview

- Improvement in Predictive Validity using
- F/U telephone interview by trained tester:
 - \square N = 3793 only F/U + evaluated
 - □ Low risk (primary care) from 0.11 to 0.65
 - 189 failed F/U -> 20 ASD dxed
 - □ High risk (ECI) from 0.60 to 0.76
 - (Kleinman et al. 2007)
- No diff in % agreement done by PCP (Sturner, Howard)
- M-CHAT authors "highly recommend" the F/U. Usually requires extra visit (26 page algorithm). Takes 2 min. using CHADIS.
- An opportunity to clarify observations and improve effectiveness of a referral

M-CHAT Age Issues (Pandey, J, et al, 2008)

	High Risk Older (N = 96)	High Risk Younger (N107)	Low Risk Older (N = 31)	Low Risk Younger (N = 36)
PPV ASD	0.74	0.78	0.61	0.28
PPV + DD	0.95	0.98	0.90	0.72

M-CHAT Results (Sturner, Howard)

	Overall	>20 mo	< 20 mo
PPV	0.54	0.61	0.47
Over-referral Rate	46%	39%	53%

Results: < 20 months

PPV: 0.54; Sensitivity: 0.32; Specificity: 0.76; Accuracy: 55% Over Referral Rate: 18%

<u>ADOS</u>



Results: CART - < 20 months combining tools, computer scored PPV: 0.95 Sensitivity: 0.78; Specificity: 0.96; Accuracy: 0.88 Over-Referral: 2%



My conclusion on screening

- Use MCHAT-R and observation at 18 and 24
- If positive at 18 mo., (for now) refer or repeat at 20 mo. Track.
- If positive at 24 mo., use MCHAT-R F/U and specific observations. Track.
- If MCHAT-R F/U positive >20 mo.,
 - Conduct medical evaluation or refer for this
 - Conduct ASD diagnostic tool or refer for this
 - □ Shared decision making with family re plan

Provide resources: First 100 Days Kit, waiver
 Refer for intervention: ECI <3, Child Find >3; KKI or private

Behavior and Mental Health Screening Tools



Any Disorder: 20.9%*
 Anxiety disorders 13.0
 Mood disorders 6.2
 Disruptive disorders 10.3
 Substance use disorders 2
 *Children and adolescents age 9–17 with mental or addictive disorders, combined MECA sample, 6-month (current) prevalence



Conclusion: Children should have a regular mental health check-up

- Under diagnosis of mental health disorders in primary care
- 14% accuracy of detection (Costello et al)
- 20% accuracy of detection (Kessler et al)
- Less than 40% identified (Dulcan et al)
- Even when well known in a practice only ½ identified (Lavigne)
- 75% of parents of children with a mental health disorder did not bring it up during the primary care visit
Psychosocial concerns are common

- Prevalence of behavioral, developmental, and other psychosocial concerns: 80%, (e.g. Hickson, Altemeier & O' Connor, 1983; McCune, Richardson & Powell, 1984)
- 25-50% of presenting complaints in primary care are behavioral or developmental (Sturner)

Barriers to MH detection

- perceived unacceptability of asking questions about emotional functioning
- skepticism re effectiveness of interventions
- uncertainty about steps after a positive screen
- delays in obtaining appointments
- Iack of specialists
- payment problems
- administrative practices that restrict access.

General behavior screening tools

Pediatric Symptom Checklist- Jellinek

- General psychosocial screen- subscales for anxiety, opp/conduct, attention
- □ Ages 4-16
- □ Child form >9
- □ 35 items, 7 min or 17 item
- Free, English, Spanish & other
- Cutoffs but no standard scores
- Sensitivity (80% to 95%), but somewhat scattered specificity (68% to 100%).
- □ Confirmed prevalences 2016

Strengths and Difficulties Questionnaire

- Screen of burdensome behavior: conduct, attention, anxiety-depression
- Ages 4-16;33 items
- Also assesses some strengths
- As good as CBCL for conduct and emotional problems, better for ADHD
- Burden item highly related to use of mental health services
- Standardized in several countries,
- Available in >40 languages
- Computer scoring

Eyberg Child Behavior Checklist

- 2-16 years
- Covers externalizing behaviors (aggression, defiance, tantrums, attention, etc.)
- 36 items rated for intensity on 0-7 scale summed plus "Is this a problem for you?"
- >=132 is cut for referral
- Sens. 87%; Spec. 91%
- 5 min to score

Brief Infant-Toddler Social & Emotional Assessment (BITSEA)

- Symptom checklist for 1-2 year olds
- 12-36 months
- 60 items; 10 min
- alphas=.83 for problem scale and .66 for competence scale vs ITSEA
- Tested on 1280 parents, fairly diverse both ethnically and SES
- Test-retest .72-.82; good sensitivity & specificity

Ages & Stages: Social Emotional

- 3 mo to 5.5 years
- To identify those who might need further evaluation for socio-emotional problems
- 8 questionnaires with 22-36 items assessing 7 areas (self-regulation, compliance, communication, adaptive fx, autonomy, affect, interaction)
- Cut scores for risk or age appropriate
- Sens. 78%, Spec. 94%

Early Childhood Screening Assessment- Gleason

- 40 items, cut score 18
- 18-60 months

Free

- parental depression, stress and frustration
- 5th gr. reading level, English and Spanish
- Takes 5-10 minutes
- Correlated with other pa report questionnaires CBCL (spearman's rho = 0.81, p < 0.01), BITSEA (spearman's rho = 0.63 p < 0.01), and the PSC (spearman's rho = 0.62, p < 0.01)).

Child Behavior Checklist- Achenbach

- Multidimensional screen
- Ages 1 1/2- 18 years
- Parent, teacher and child >11 forms
- 138 item, 20-25 min
- Several languages
- Widely standardized by age and gender
- Computer scored > 30 min
- Results internal, external, social competence

Preschool Pediatric Symptom Checklist (Sheldrick, Perrin, 2013)

- social/emotional screen for children 18 60 mo.
- 292 from primary care; 354 referral
- 52% college; 25% minority
- 4 dimensions: Externalizing, Internalizing, Attention Problems, Pa. Challenges.
- strong general factor for total score >=9
- strong internal and retest reliability 0.75
- Sens. >0.7; Spec. >0.7
- predicts CBCL as well as ASQ:SE
- Part of SWYC developmental screen

Child Self Administered

General screens

PSC-17 CBCL

SDQ

PHQA

Patient Health Questionnaire-Adolescence

- 13-18 years
- Covers eating disorders, substance use, depression, anxiety, suicidality, some health topics
- Makes some provisional depressions dx
- "best psychometric properties" (Brent, 2006)

Screening for specific mental health disorders

ADHD

- Connors
- Vanderbilt
- Behavioral Health Checklist
- SNAP
- SWAN

Conners

- Assesses symptoms of ADHD and learning
- Ages 3-18 versions
- 48 (10 min) and 93 item versions
- Parent, teacher and child >11
- Scales for conduct, hyperactivity, learning, psychosomatic, anxiety
- Discriminates pathology; useful to assess treatment
- Proprietary

Vanderbilt- Wolraich

- Screens for ADHD/ADD plus conduct, opposition, anxiety-depression
- Parent and teacher versions
- Good validity vs DICA in risk sample
- Low parent- teacher agreement
- Free on NICHQ website and in Bright Futures: Mental Health

Other Mental Health Disorder Tools

- Depression- recommended by GLAD-PC
 - □ PHQ-A, PHQ-9
 - CES-DC- 20 items
 - Kutcher
- Anxiety
 - □ SCARED- 41 items, ages 8-17
 - □ Generalized Anxiety Disorders- 2 item, 7 item
- Substance use
 - □ CRAFFT- drugs and alcohol, 6 items, ages 12-18
 - Problem Oriented Screening Instrument for Teenagers (POSIT)
 - □ Alcohol Use Disorders Identification Test (AUDIT)

Screening for Psychosocial Family Problems

- Safe Environment for Every Kid (pa depression, stress, IPV, sub use, corporal punishment, food insecurity)
- Edinburgh Postnatal Depression Scale
- Generalized Anxiety Disorders (2 and 7 item)
- PHQ-4 (includes PHQ-2 and GAD-2)
- Survey of Well-being of Young Children (parental depression, conflict, or substance abuse, and hunger)
- Life Stress

AAP Recommendations

- Soc-emo/mental health/psychosocial function screening annually 5 to 18
- Social-emo. screen if gen. screen or autism screen abnl.
- Substance abuse screening annually for adolescents.
- Trauma surveillance annually
- Family screens: Maternal depression screen in 1st yr, intimate partner violence

Could technology help?

Complete validated tools outside visit time

- Parent has time to consider and prioritize their concerns
- Shows that pediatrician cares about this topic

Automatically select correct tool, scores it

Pediatrician can see the problems and strengths before starting the visit

Advantages of Computerized Pre-Visit Interviewing

- Better able (in 45% of adults) to formulate questions at the time of the face-to-face encounter (Adang, et al, 1991)
- More confidential data is uncovered by the computer than the interviewer
 - □ Suicide (Greist, 1973)
 - □ Alcohol screening (Luca et al, 1977)
 - More high risk behavior reported in potential blood donors (Katz, et al, 2005)
 - Adolescent sexual behavior (Hewett PC, Mensch BS, Erulkar AS0 and drug use (Paperny, et al, 1990)
 - Higher reporting of high risk sex (with a relative, stranger, older man, coerced sex)

The President's "New Freedom Commission on Mental Health"

Recommends using "technology to access mental health care and information... in an integrated electronic health record and personal information system" (New Freedom Commission on Mental Health, 2003).

Evidence-based, Shared Decisions.



A comprehensive web-based screening, decision support and patient engagement system.

Delivering Evidence-Based Shared Decisions



1.

Pre-visit Screening: Using office-specific invitation, parent & teens complete questionnaires on computer, tablet, smartphone automatically assigned by age and visit type



Time of Visit Decision Support: Clinician gets results & guideline-based patient specific decision support. When integrated with EMR results appear in chart or can be copy/paste or pdf attached to encounter note.



Post-visit Patient Resources: Child milestones from ASQ, patient specific education from results or from Clinician, edutainment & resources appear in interactive MemoryBook Care Portal. Can be inside EHR portal.

CHADIS Questionnaires

Over 300 in all (sample below) More can be added by request.

INFANT & YOUNG CHILD

- Ages & Stages Questionnaires[®] Third Ed. (ASQ-3[™])
- Modified Checklist for Autism in Toddlers (M-CHAT) & Follow-up
- Infant Development Inventory (IDI)
- Ages & Stages Socio-emotional (ASQ:SE[™])
- Survey of Well-being of Young Children
- Infant Development Inventory; Child Development Inventory

SCHOOL AGE

- Pediatric Symptom Checklist (17 items)
- Vanderbilt Parent Revised
- Vanderbilt Follow-up, Parent Informant
- CHADIS DSM
- Strengths & Difficulties Questionnaires & FA
- SCARED: Parent and Child

ADOLESCENT

- Pediatric Symptom Checklist Youth
- Patient Health Questionnaire 9 (PHQ-A)
- CRAFFT
- Kutcher Adolescent Depression Scale
- CES-DC (depression)
- CHAMPS (GAPS Adolescent Risk Behaviors)

TEACHER DATA

- Vanderbilt Teacher Revised & Follow Up
- School Intervention Questionnaire

GENERAL HEALTH

- CHADIS Visit Priorities
- Early Periodic Screening Diagnosis and Treatment (EPSDT)
- Family Medical History
- Family Cardiac History
- Safety & Guidance Topics (Bright Futures)
- Brenner FIT (Obesity and Nutrition)
- ACT and PACCI (Asthma monitoring)

FAMILY / ENVIRONMENT

- Edinburgh Postnatal Depression Scale
- Multidimensional Scale of Perceived Social Support (MSPSS)
- McMaster Family Assessment Device, General Functioning Scale
- Adverse Childhood Experiences (ACE)
- Partner Violence Screen
- Safe Environment for Every Kid (Family risks)

QUALITY MONITORING

Provider-level Promoting Healthy Development Survey

Patient View- Completes Tools

CHADIS	rebecca.respondent Cambiar al español My Profile Help Logout
Toddler Social Development (M-CHAT) - Questions 1 - 23 of 2	23.
Please respond to the following questions.	
Does your child enjoy being swung, bounced on your knee, etc.?	
Yes	
No	
Does your child take an interest in other children?	
Yes	
© No	
Does your child like climbing on things, such as up stairs?	
Yes	
© No	
Does your child enjoy playing peek-a-boo/hide-and-seek?	
Yes	
© No	
Does your child ever pretend, for example, to talk on the phone or take ca	are of a doll, or pretend other things?
© Yes	
© No	

Patient Input

At home or in the pediatrician's office



Languages supported: English, Spanish, Mandarin (Chinese)

- Computer
- Tablet
- Phone

Tablet/Kiosk read to you view



Worksheet with Flagged Results

CHADIS Detail Report

Visit on 10/19/15

Priorities

· Behavior or emotions: not talking

Challenging Parts/Difficulties: Crying or fussing or tantrums

Best Parts/Strengths: How healthy he/she is

Questionnaires

Alert	Questionnaire	Completed I	Respondent	Provisional Result					Responses	Follow-Ups
-	Quotionnano			Pass -	<u> Fait</u>	Disorde	r Problem	Variation Challeng	<u>e</u>	i enem ope
**	Ages & Stages Questionnaires®: 18 months ?	10/19/11	Mother		1				Preview Include	
***	Modified Checklist for Autism in Toddlers (M-CHAT) ?	6/8/10	Mother		1	J			Preview Include	M-CHAT Follow-Up
	Visit Priorities, and Best and Hardest Parts of Parenting	1/20/12	Mother						Preview Include	

Please verify that respondents are the appropriate individuals and the questions were understood

Show copy-and-paste-friendly version of these results

Questionnaire Results

Ages & Stages Questionnaires®: 18 months [Remove these results]

Submitted 10/19/11 by Mother Autism (Mother)

- **Failure:Positive screen for fine motor delay (cut score <= 39.5); Score: 35
- Child age outside limit for 18 month ASQ

Modified Checklist for Autism in Toddlers (M-CHAT) (M-CHAT) [Remove these results]

Submitted 6/8/10 by Mother Autism (Mother)

***Failure:Positive Screen for Autism

Track Development-ASQ-3

Charts

Ages & Stages Questionnaires®, Third Edition (ASQ-3™) Comparison Chart



Accessing M-CHAT Follow Up Interview

CHADIS Detail Report

Visit on 10/19/15

Priorities

• Behavior or emotions: not talking

Challenging Parts/Difficulties: Crying or fussing or tantrums

Best Parts/Strengths: How healthy he/she is

Questionnaires

Alert	Questionnaire	Completed I	Respondent	Provisional Result					Responses	Follow-Ups
	Quostionnano			Pass -	-/- Fail	Disorder	Problem	Variation Challenge	neoponoco	
**	Ages & Stages Questionnaires®: 18 months ?	10/19/11	Mother		1				Preview Include	
***	Modified Checklist for Autism in Toddlers (M-CHAT) ?	6/8/10	Mother		1				Preview Include	M-CHAT Follow-Up
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MemoryBook Care Portal – Alerts & Education

CHADIS	L	Welcome Susan CHADIS logout Mike - Go					
Memory Book & Care Portal	Memory Book	Solution My Resource	es Find Resource	es About			
Needs age appropriate car seat. Read Poisonous Items Storage Read	Gun Safety Read	A Bicycle Safety Re	ead Protection Falls Rea	n from High ad			
Search Memory Book Search Show on Timel	line: Milestones & My E	intries 🔻 Go	Skip To: Dec 🔻 7 🔻	• 2011 ▼ Go			
Mike's Memory Book	3 years, 4 months November 2011 15 16 17 № № 10	18 19 20 21 22	23 24 25 2 Add	26 27			
Baby's First Time Grabbin The first time you Comments: - Susan Burge	ng At Clothi our baby grabbe ee: "She was v	es or scratched at th vearing a yellow flo	neir clothes. owered jumper.				

Care Portal for Visit Notes & Alerts



Notes	s for Sam a	nd Family	Search Memory Book	Search			
	Date	Professional	Notes				
X	4/21/2015	Ray Sturner	A note about a number to call if ever unsafe in your home, something all families should know All families need to know that				
X	4/21/2015	Ray Sturner	Dr. Ray Sturner wants you to be sure you know how you can talk to someone by phone who can help you get help for partner difficulties and stay	8			

Care Portal for Resources



Added Income: 96110, 96127, 99420 & higher level codes

- 96110, 96127 & 99420 coding is supported with all the necessary scoring, interpretation & documentation
- Potential Annual income from 96110 greater than \$15,000 per clinician
- 99214 & 99215: Added income from Review of Systems and Family & Social Histories verify complexity and document to bill for 99214 or 99215 visits

One paper tool costs \$22 in staff time to handle.
Automated Maintenance of Certification-4

- 3 programs of 25 points each
- Autism, developmental screening, family risk
- Coming soon asthma, ADHD
- No chart reviews needed. 3 webinars.

CHADIS Usage

CHADIS is in use in 47 states and 7 countries

>1 Million respondents

>50,000 patients use CHADIS each month

Thank you!

Supplementary Materials

PEDS vs ASQ

- 334 children 12-60 mo. in primary care assessed with PEDS and ASQ then Bayley/WPPSI/PLS/Vineland
- 10% had gold std delays
- If use >1 predictive concern (PEDS) or 1 fail (ASQ): PEDS Sens.0.74 Spec.0.64 vs ASQ Sens. 0.82 Spec. 0.78
- ASQ Sens. was moderate all ages vs PEDS low Sens. or Spec. in each age subgroup (except 30 mo.)
- If >2 predictive concerns or >2 fails: PEDS Spec. 0.89 vs ASQ 0.94 but very low PEDS Sens. 0.41 and ASQ 0.47.
- Conclusion: both "adequate", preference for ASQ

PEDS vs ASQ in low SES

- mean age 17.6 months, 77% MA; 50% of parents <=HS</p>
- 37% failed PEDS; 27% failed ASQ. Thirty-one children passed (52%) both screens; 9 (15%) failed both; and 20 (33%) failed 1 but not the other (13 PEDS and 7 ASQ).
- Agreement between the 2 screening tests was only fair, statistically no different from agreement by chance.
- PEDS "sign. parental concerns" predicted clinically significant parenting stress (PSI: OR 4.9; 95% confidence interval, 1.5-15.9; P = .007)

Rationale for Screening for Autism

- Earlier intervention for improved outcomes
 - (e.g., Eaves & Ho 2004; Harris and Handleman 2000; Prior and Roberts, 2006; Rogers and Vismara, 2008).
- First parent concerns ave. 14 15 mos with significant number below (Chawarska et al. 2007)
 - Average age of diagnosis 5.7 yrs (CDC, 2002)
 - □ Stability of Symptoms established from 24 mo
 - (e.g., Charman et al. 2005; Eaves and Ho 2004; Gillberg et al. 1996; Lord et al. 2006; Moore and Goodson 2003;
 - Less data <24 mo</p>
- Alleviate existing parental concern and begin parental support (Baird et al., 2001
- Genetic counseling

Is asking about "worry" enough to identify <4 yrs old emotional problems?

- 42.1% of children had At Risk (75-85% in BITSEA) or Clin Sig (>85%); 19.8% CS
- 30.4% of parents had worry re SE; but 19.9% rated child's behavior as normal on the BITSEA
- Worry sign distinguished CS but not AR
- "Worry" Sens. 66.7%; Spec. 78.6% for CS.
- Sens and Spec excellent in Hispanic, but Sens. poor in Af-Am.
- Low educ. Sens to detect CS problems was excellent.

Screening for family problems

Family Psychosocial Screening-Kemper

- Screens parenting risk factors
- 2 page including: 4 item parent history of abuse as a child, 6 item parent sub abuse, 3 item maternal depression
- 15 min
- Refer/nonrefer scores for each risk factor.
- Sensitivity and specificity to larger inventories greater than 90%.

Free

Edinburgh Postnatal Depression Scale

- Designed to screen for postnatal depression
- 10 short statements to rate
- 5 minutes
- Scores >13 likely depressed
- Better than CES-D, less "fatigue"
- Free

McMaster Family Assessment Device

Global family function

- Ages 4-16
- 12-60 item, 5+ min
- Free to copy
- Brief, sensitive for problems but gives limited info if not done completely

Home Observation for Measurement of the Environment (HOME) Caldwell and Bradley

- 4 age groups: infants/toddlers, preschool/early childhood, school age/middle childhood, early adolescents plus child care and disable child versions
- 45 items clustered into six subscales: 1) Parental Responsivity, 2) Acceptance of Child, 3) Organization of the Environment, 4) Learning Materials, 5) Parental Involvement, and 6) Variety in Experience.
- Administered by semi structured interview (observation in home and self-report) in 45 to 90 minute home visit
- Alpha coefficients for the total scores are all above .90; and the inter-observer agreement for each measure is 90% or higher

Home Screening Questionnaire Frankenburg & Camp

- Adapted from HOME as questionnaire
- Two forms: 0-3, 3-6 year olds
- 3-6th grade reading level
- 15-20 min to complete; 5 min to score
- Detected 81-86% of at risk by full HOME scale

Safe Environment for Every Kid (SEEK) (Dubowitz)

Asks about (1) maternal depression, (2) alcohol and substance abuse, (3) intimate partner (or domestic) violence, and (4) parental stress and difficulty coping (also food insecurity).

Added items per locale

Websites for general tools ASQ-3 = Ages & Stages Questionnaire, Third Edition; http://www.pbrookes.com/ IDI = Infant Development Inventory; http://www.childdevrev.com/index.html CDR-PQ = Childhood Development Review–Parent Questionnaire; http://www.childdevrev.com/index.html CDI = Child Development Inventory; http://www.childdevrev.com/index.html

Websites for general tools

PEDS = Parents' Evaluation of **Developmental Status;** http://www.pedstest.com 4. PEDS:DM = Parents' Evaluation of Developmental Status–Developmental Milestones; http://www.pedstest.com 5. PDQ-II = **Prescreening Developmental** Questionnaire II; http://www.denverii.com/PDQ.html

Websites for SE tools

- ASQ:SE = Ages & Stages Questionnaire: Social-Emotional;
- http://www.pbrookes.com/ 2. BITSEA =
- Brief Infant Toddler Social Emotional
- Assessment; http://pearsonassess.com/
- Greenspan SEGC= Greenspan Social-Emotional Growth Chart;
- http://www.pearsonassessments.com/cgi-
- bin/MsmGo.exe?
- grab_id=0&page_id=8765&query=Greens pan&hiword=Greenspan%20

Websites for SE tools

CSBS DP ITC = Communication and Symbolic Behavior Scales Developmental Profile Infant/Toddler Checklist; http://www.pbrookes.com,

M-CHAT = Modified Checklist for Autism in Toddlers (and its M-CHAT follow-up interview);

http://www2.gsu.edu/~psydlr/ Diana_L._Robins, Ph.D..html

Websites for mental health tools

PSC = Pediatric Symptom Checklist;

http://www2.massgeneral.org/allpsych/psc/

psc_home.htm PPSC = Pictorial

Pediatric Symptom Checklist;

http://www2.massgeneral.org/allpsych/psc/

psc_forms.htm 2. SDQ = Strengths and

Difficulties Questionnaire;

http://www.sdqinfo.com/

Websites for mental health tools

Conners 3 = Conners Rating Scale–3rd edition (which can be used in children age 3–17 y); http://portal.wpspublish.com/portal/page? pageid=53,112710& dad=portal& schem

<u>a=PORTAL</u>

Vanderbilt Assessment Scales; http://peds.mc.vanderbilt.edu/cdc/ childdevelopcenter.htm American Academy of Pediatrics Council on Children with Disabilities. 2006. Identifying infants and young children with developmental disorders in the medical home: an algorithm for developmental surveillance and screening. Pediatrics 118:405-420

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