Recommendations on screening for developmental delay

Canadian Task Force on Preventive Health Care*

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Developmental delay in children may be transitory or sustained and is characterized by a significant delay (i.e., performance 1.5 standard deviations or more below age-expected norms) in one or more of the following domains: gross and fine motor skills, speech and language, social and personal skills, activities of daily living and cognition.[1,2] Children with sustained developmental delay are at higher risk of learning difficulties, behavioural problems and functional impairments later in life.[2,3] Many factors are associated with increased risk of developmental delay, including poor maternal health during pregnancy, birth complications, infections, genetic characteristics, exposure to toxins, trauma, maltreatment and possibly low socioeconomic status.[1,3–7]

There is considerable interest in the possibility that early identification and intervention may improve health outcomes among children with developmental delay.[1,8,9] Population-based screening of all preschool children has been proposed to facilitate early identification and treatment. For example, the province of Ontario recommends developmental screening of all children at 18 months,[10] and the American Academy of Pediatrics recommends developmental screening at 9, 18 and 30 months and autism screening at 24 and 30 months.[11,12] The Canadian Task Force on Preventive Health Care assessed the evidence on the effectiveness of population-based screening for developmental delay in primary care settings. To inform the resulting recommendations, the task force also assessed evidence on the accuracy of screening tools to identify undetected developmental delay and the effectiveness of behavioural interventions.

Scope

This guideline presents evidence-based recommendations for primary care providers on screening for developmental delay in children aged one to four years with no apparent signs of such delay in primary care settings. Screening refers to use of a standardized tool to search for developmental delay in children without recognized signs of such delay and whose parents or clinicians have not raised concerns.[11,13,14] Screening differs from developmental surveillance, which refers to ongoing monitoring by clinicians of a child's development, identification of risk factors and elicitation of parental concerns; and from case finding, the identification of developmental delay in populations that are at increased risk, which may or may not involve the use of a specific tool.[11,13,14] Both screening and case finding are intended to detect signs suggestive of developmental delay, which (if detected) will require diagnosis to establish the presence or absence of a specific condition. This guideline does not offer recommendations for surveillance, case finding or diagnosis of developmental delay (definitions summarized in Box 1).

This guideline replaces the task force's 1994 guidance on well-baby care in the first two years of life[15] and on preschool screening for developmental problems.[16]

Methods

The Canadian Task Force on Preventive Health Care is an independent panel of primary care clinicians and methodologists that develops recommendations on clinical preventive services in primary care (www.canadiantaskforce.ca).

Key points

- This guideline focuses on population-based screening of children aged one to four years with no apparent signs of developmental delay, whose parents and clinicians have no concerns about development. It does not offer guidance on developmental surveillance, case finding or diagnosis.
- There is no evidence from randomized controlled trials (RCTs) that screening children for developmental delay improves health outcomes.
- There is no evidence that commonly used screening tools would consistently identify otherwise unrecognized cases, but there is evidence that the low specificity of these tools would lead to a high proportion of false positives.
- High-quality evidence from RCTs on the effectiveness of treatment for known developmental delay is lacking; a few small trials have suggested that speech and language therapy may improve language impairment and that treatment of autism may improve cognitive function.
- Clinicians should remain vigilant to deficits in children's performance in terms of gross and fine motor skills, cognition, speech and language, and personal and social abilities. They should consider further evaluation for children whose development does not meet age-expected milestones.

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The task force uses a standard methodology, the Grading of Recommendations Assessment, Development and Evaluation (GRADE),[17] to develop clinical practice guidelines.[13] This project was led by a work group comprising five members of the task force and a clinical expert, with support from scientific staff at the Public Health Agency of Canada. The work group established the key and contextual questions, outcomes, analytical framework and search strategy used to develop the research protocol.[18] The main question that the task force wished to address was whether population-based screening to identify developmental delay in children who would otherwise go unidentified through standard clinical practice (i.e., developmental surveillance) would improve the health outcomes of the children who were screened, relative to those who were not screened.

The task force commissioned the McMaster University Evidence Review and Synthesis Centre to conduct an independent systematic review in accordance with the research protocol. The systematic review[19,20] involved a search for evidence from randomized controlled trials (RCTs) and controlled cohort studies on the benefits and harms of screening for developmental delay in children aged one to four years without recognized signs of developmental delay and whose parents and clinicians have not raised specific concerns. Also included was RCT and systematic review evidence on the benefits and harms of treating developmental delay and studies on the accuracy of screening tests. Critical outcomes of interest were cognitive function; academic performance; incidence of mental health conditions; overall quality of life; survival; functionality as an adult; and improvements in gross and fine motor skills, language, adaptive functioning, and cognition and performance (for domain-specific delays). Referral rates for early intervention and time from referral to early intervention were considered as surrogate outcomes. Studies examining externalizing and conduct disorders were excluded, because these conditions are usually identified in school-aged children. Studies examining screening for reduced vision and hearing were also excluded, because these conditions are usually detected through other screening programs.

The inclusion criteria for screening studies required a focus on children aged one to four years without suspected developmental delay, conduct of the study in clinical practice and public health settings, and comparison of screening with no screening (or standard care). Studies that included children suspected of having developmental delay or who had an existing diagnosis were excluded; by definition, investigation of these children would not represent screening. Studies of the accuracy of screening tools had to compare the screening test (index test) with a valid reference standard. Index and reference tests had to be administered concurrently or within a brief time interval. Studies of treatment were required to focus on children aged one to six years with diagnosis of a general or domain-specific developmental delay. Studies that included children without a diagnosis or confirmation of a developmental delay in one or more domains were excluded. Treatment could include any behavioural, pharmacologic or psychologic intervention; a comparator of no treatment or standard care was required. Uncontrolled observational studies, case series and case reports reporting treatment outcomes for developmental delay were excluded because of their inability to adequately determine or account for the effects of an intervention.

Six clinical experts peer-reviewed the systematic review before submission for publication. The analytic framework and a detailed description of methods are available in Appendix 1 and Appendix 2, respectively (available at www.cmaj.ca/lookup/suppl/doi:10.1503/cmaj.151437/-/DC1). The complete research protocol[18] and systematic review[19] are available at www.canadiantaskforce.ca.

The task force used GRADE methodology[17] to determine the quality of evidence and the strength of recommendations (Box 2). Specifically, the work group examined the strength and quality of the chain of evidence for critical outcomes to support the effectiveness of universal screening (Appendix 3, available at www.cmaj.ca/lookup/suppl/doi:10.1503/cmaj.151437/-/DC1). Recognizing that direct evidence on the health outcomes of screening children for developmental delay was limited, the work group also

Box 1: Definitions*

- **Screening:** Use of a standardized tool to search for developmental delay in asymptomatic populations.[11,14] †
- **Developmental surveillance:** Ongoing monitoring of development, identification of risk factors and elicitation of parental concerns.[3,11,14] The term "developmental surveillance" is commonly used in developmental pediatrics, but this type of monitoring is what the Canadian Task Force on Preventive Health Care would normally consider to be part of standard clinical practice for children.
- **Case finding:** Identification of developmental delay in populations that are at increased risk of developmental delays; often does not involve the use of a specific tool.[11] †

*This guideline offers recommendations on screening for developmental delay; it does not offer recommendations on surveillance, case finding or diagnosis of developmental delay.

†Both screening and case finding are intended to detect signs and symptoms suggestive of developmental delay, which (if detected) will require diagnosis to establish the presence or absence of a specific condition.

reviewed indirect evidence on the accuracy of screening tools in children without known developmental delay and on the effectiveness of treatment on the outcomes of interest. Evidence from systematic reviews on the treatment of autism was considered as another possible source of indirect evidence. The guideline was reviewed and approved by the entire task force and underwent external review by content experts in the area and by stakeholders.

The task force used a rigorous usability testing process to develop knowledge translation tools targeting various end-user groups (e.g., clinicians and patients; see Appendix 4, available at www.cmaj.ca/lookup/suppl/doi:10.1503/cmaj.151437/-/DC1). All tools are informed by feedback, obtained through combinations of interviews, focus groups and surveys, from clinicians (for clinician and patient tools) and patients (for patient tools). More information about task force methods, including the process for updating this guideline and systematic reviews that support the task force recommendations, can be found elsewhere[21] and on the task force's website (http://canadiantaskforce.ca/methods/methods-manual/).

Recommendation

We recommend against screening for developmental delay using standardized tools in children aged one to four years with no apparent signs of developmental delay and whose parents and clinicians have no concerns about development (strong recommendation; low-quality evidence).

This recommendation applies to children aged one to four years with no apparent signs of developmental delay and whose parents and clinicians have no concerns about development (Box 3).[12,22] Thus, the recommendation applies to children for whom there is no concern about failure to sequentially acquire age-appropriate developmental milestones for gross and fine motor, social, emotional, language and cognitive domains (Box 3). Milestone ages should be based on the oldest age by which the skill should have been achieved.[12,22]

This recommendation does not apply to children who present with signs, symptoms or parental concern that could indicate developmental delay or whose development is being closely monitored because of identified risk factors, such as premature birth or low birth weight.[1,2]

The recommendation is based on examination by the task force of the strength and quality of available evidence from three sources: randomized trials of screening (no nonrandomized controlled cohort studies were identified), randomized trials or systematic reviews of treatment, and studies of diagnostic test accuracy.

Screening

The systematic review[19,20] examined the effects of screening in children aged one to four years, without signs of developmental delay and whose parents and clinicians had no concerns about development, on the surrogate outcomes of referral rates for early intervention and time from referral to early intervention and on the critical outcomes, which were cognitive function, academic performance, mental health, overall quality of life, survival and functionality as an adult. The systematic review[19,20] did not find any evidence from RCTs or controlled cohort studies to show that screening for developmental delay in children aged one to four years with no known developmental concerns improved health outcomes.

Two relevant RCTs[23,24] were identified. One of these, conducted in the United States and assessed as moderate-quality in the systematic review,[19,20] found that screening with standardized tools, relative to developmental surveillance, increased the likelihood of identification

Box 2: Grading of recommendations

Recommendations are graded according to the Grading of Recommendations Assessment, Development and Evaluation (GRADE) system.[13,17,21] GRADE offers two strengths of recommendation: strong and weak. The strength of recommendations is based on the quality of supporting evidence, the degree of uncertainty about the balance between desirable and undesirable effects, the degree of uncertainty or variability in values and preferences, and the degree of uncertainty about whether the intervention represents a wise use of resources.

Strong recommendations are those for which the Canadian Task Force on Preventive Health Care is confident that the desirable effects of an intervention outweigh its undesirable effects (strong recommendation for an intervention) or that the undesirable effects of an intervention outweigh its desirable effects (strong recommendation against an intervention). A strong recommendation implies that most individuals will be best served by the recommended course of action.

Weak recommendations are those for which the desirable effects probably outweigh the undesirable effects (weak recommendation for an intervention) or the undesirable effects probably outweigh the desirable effects (weak recommendation against an intervention), but appreciable uncertainty exists. A weak recommendation implies that most people would want the recommended course of action but that many would not. This means that clinicians must recognize that different choices will be appropriate for different individuals, and they must help each person to arrive at a management decision consistent with his or her values and preferences. Policy-making will require substantial debate and the involvement of various stakeholders. Weak recommendations result when the balance between desirable and undesirable effects is small, the quality of evidence is lower or there is more variability in the values and preferences of patients.

Evidence is graded as high, moderate, low or very low, according to how likely it is that further research will change the task force's confidence in the estimate of effect.

of developmental delay, increased the likelihood of the child receiving a referral for specialist evaluation or multidisciplinary evaluation for developmental delay (and reduced the time to referral for such evaluation) and increased eligibility for federally funded early intervention services.[23] However, these surrogate, process-based outcomes do not necessarily imply better clinical outcomes.

The second RCT, conducted in the Netherlands and assessed as low-quality in the systematic review,[19,20] reported on academic outcomes of children screened for language delay at 15–18 months and 24 months.[24] An intention-to-screen analysis showed no significant differences in educational attainment between children who were screened and those receiving usual care. The relative risk (RR) of repeating a grade between screened and nonscreened children with language delay was 0.99 (95% confidence interval [CI] 0.81–1.21).[19,20,24] Similarly, there was little difference in performance on standardized tests between screened and nonscreened children: RR 0.88 (95% CI 0.63–1.2) for performance on oral tests below the 10th percentile and RR 1.00 (95% CI 0.72–1.40) for scores on reading tests below the 10th percentile (Appendix 5, available at www.cmaj.ca/lookup/suppl/doi:10.1503/cmaj.151437/-/DC1).

No studies were identified that reported on the effect of screening on cognitive function, quality of life, incidence of mental health conditions, survival or functionality as an adult.[19]

Treatment

The task force also considered findings from RCTs and systematic reviews on the treatment of children aged one to six years with known developmental delay, including those with associated autism spectrum disorders.[18,19] We included children up to six years to allow sufficient time to observe treatment effects in children in whom developmental delay was diagnosed at age four years. These studies were considered to represent potential sources of indirect evidence on the benefits of screening. Health outcomes of interest were cognitive function; academic performance; incidence of mental health conditions; overall quality of life; survival; functionality as an adult (for treatment of developmental delay and autism spectrum disorders); and improvement to gross and fine motor skills, language, adaptive functioning and cognition and performance (for domain-specific delays). Findings from uncontrolled observational studies, case series and case reports on the outcomes of treatment for developmental delay were not considered because of the inability of such studies to adequately determine or account for the effects of an intervention.

The systematic review[19] identified three small moderate-quality RCTs[25–27] (total n = 239) on structured language-based interventions for children aged two to five years with speech and language impairments. These studies showed statistically significant improvements with a standard mean difference of 0.81 (95% CI 0.02–1.60), where standard mean values of 0.8 or higher may indicate a large effect[19] (see Appendix 6, available at www.cmaj.ca/lookup/suppl/doi:10.1503/cmaj.151437/-/DC1). Additionally, the systematic review for the task force[19] identified two systematic reviews[28,29] (eight unique studies) showing that intensive behavioural interventions (20–40 h/wk of individualized, structured teaching) improved cognitive function in children with known developmental delay due to autism spectrum disorders. Pooled results showed a standard mean difference of 1.34 (95% CI 0.60–2.08) from applied behavioural analysis (n = 129)[28] and a standard mean difference of 0.76 (95% CI 0.04–1.11) from early intensive behavioural intervention (n = 172).[29] The authors of these systematic reviews expressed concerns about the quality of the primary studies, including serious concerns about risk of bias (especially because of lack of blinding), imprecision due to small sample sizes and potential publication bias.[28,29]

Evidence from two other systematic reviews that reported on cognitive outcomes was also considered.[30,31] One of these systematic reviews described parent-mediated interventions and found no difference between control and intervention arms.[30] The other documented the use of acupuncture or acupressure for cognitive function and found inconsistent and largely nonsignificant effects[31] (Appendix 7, available at www.cmaj.ca/lookup/suppl/doi:10.1503/cmaj.151437/-/DC1).

Box 3: Summary of recommendation for clinicians and policy-makers

We recommend against screening for developmental delay using standardized tools in children aged one to four years with no apparent signs of developmental delay and whose parents and clinicians have no concerns about development (strong recommendation, low-quality evidence).

This recommendation *applies* to children aged one to four years without recognized signs of possible developmental delay and whose parents or clinicians have no concerns about development. These are children whose age-appropriate developmental milestones have been sequentially acquired for gross and fine motor, social, emotional, language and cognitive domains. Milestone ages should be based on the oldest age by which the skill should have been achieved.[22]

This recommendation *does not apply* to children who present with signs, symptoms or parental concern that could indicate delayed development or to whose development is being closely monitored because of identified risk factors, such as premature birth or low birth weight.[1,2]

No studies were identified that reported on treatment outcomes for academic performance, gross or fine motor skills, mental health, quality of life, survival or functionality as an adult.[19]

Accuracy of screening tests

The task force also considered indirect evidence on the accuracy of screening tools used to assess developmental delay in children aged one to four years with no known developmental concerns (Appendix 2). The systematic review[19] identified five studies of screening tools. These studies, which compared the accuracy of screening tests to detect concurrently assessed developmental delay, consisted of four studies[32–35] of the Ages and Stages Questionnaire[36] and one study of the Parents' Evaluation of Developmental Status.[37] Of the four studies of the Ages and Stages Questionnaire that were identified, two had insufficient numbers of cases and noncases to accurately estimate sensitivity or specificity.[32,33] Of the two studies that were included, one evaluated the accuracy of both the Ages and Stages Questionnaire and the Parents' Evaluation of Developmental Status among 331 children (34 cases, 297 noncases) aged 12 to 60 months without a documented history of developmental delay in general primary care settings.[34] The study reported sensitivity and specificity for the Ages and Stages Questionnaire of 82% and 78%, respectively (22% false-positive rate) and for the Parents' Evaluation of Developmental Status of 74% and 64%, respectively (36% false-positive rate).[34] The other study[35] evaluated the Ages and Stages Questionnaire among 565 children (13 cases, 552 noncases) aged 18 to 42 months who were enrolled in a cohort study on child development and reported sensitivity and specificity of 62% and 84%, respectively (16% false-positive rate). Only three of the five identified studies contemporaneously compared screening tools to diagnostic assessments with enough cases and noncases to reasonably evaluate diagnostic accuracy; among these higher-quality studies, the false-positive rate was 16%–22% for the Ages and Stages Questionnaire and 36% for the Parents' Evaluation of Developmental Status.

The task force also reviewed results from a forthcoming study[38] (not included in the systematic review[19]) that evaluated the diagnostic properties of the Nipissing District Developmental Screen[39] and the Bayley Scales of Infant Development, third edition.[40] The Nipissing District Developmental Screen was found to have only moderate test–retest reliability (78% of retests produced the same results).[38] Sensitivity and specificity for children between one month and three years, relative to the Bayley Scales of Infant Development, were poor to moderate, ranging from 29% to 65% and from 63% to 88%, respectively, depending on the age of the child and the cut-point used to define an abnormal test result.[38]

Values and preferences

The systematic review did not find any studies investigating the values and preferences of parents or primary caregivers about screening for developmental delay.[19]

Rationale

In summary, there was no evidence from controlled studies that population-based screening improves health outcomes for children with developmental delay. Although there was some evidence suggesting that treatment of certain types of developmental delay (once identified) is beneficial relative to no treatment, there was no evidence that screening children without recognized signs of developmental delay is necessary to obtain this benefit. In addition, there was no evidence that interventions offered to children with screen-detected developmental delay (from any cause), but no other signs of delay and whose parents and clinicians are not concerned, improves outcomes compared with usual care. This latter point is relevant because the natural history and likelihood of response to treatment may be different for conditions that are clinically apparent than for milder forms that are detected only by screening. Furthermore, there was no evidence on the effectiveness of treatment for the remaining six critical outcomes: academic performance, improvement to gross and fine motor skills, adaptive function, mental health, survival and functionality as an adult.

Screening tests had poor to moderate accuracy, and their use would generate a high number of false positives among children without developmental delay, which could lead to anxiety and labelling. Furthermore, unnecessary investigation, referral and treatment of children with false-positive results on screening would consume resources that would otherwise be available for the care of children who have clinically evident developmental delay.

In the judgment of the task force, the lack of RCT evidence demonstrating any clinical benefits associated with screening for developmental delay and the relatively poor diagnostic properties of available screening tests warrant a strong recommendation against population-based screening.

The task force places a relatively higher value on the absence of direct evidence showing that screening is beneficial, the poor diagnostic accuracy of screening tests, the risk of false positives that could result from screening and the

potential for screening to divert resources from the treatment of children with clinically evident developmental delay. The task force places a relatively lower value on indirect evidence from the few relatively small studies that suggest a benefit of treating certain forms of clinically evident developmental delay and on the lack of evidence on harms and the preferences and values of parents and caregivers in relation to screening. The evidence supporting this recommendation is rated overall as low quality because, although the systematic review found low-quality evidence examining the effect of screening on academic performance and moderate-quality evidence examining the effect of treatment on language impairment and cognition, the review did not identify any evidence for the remaining six outcomes.

Considerations for implementation

By definition, the recommendation against screening applies only to children in whom developmental delay is not suspected and whose parents and clinicians do not have specific concerns. Although the causes of many developmental delays are unknown, factors such as low birth weight, premature birth, birth complications, congenital infections, serious maternal illness during pregnancy, certain inherited conditions, exposure to toxins and family history of developmental delay may increase the risk.[1,3–7] Clinicians should perform developmental surveillance on an ongoing basis and consider the possibility of developmental delay in children with signs that may suggest a delay in a developmental domain, as well as in those whose parents, caregivers or clinicians have concerns about development and those with important risk factors. Clinicians should remain alert for any social, economic or environmental factors (such as lower maternal education level, mental illness, neglect or maltreatment, poverty and English as a second language) that might reduce the likelihood of parents to raise concerns about their child's development.[1,3–7] Among children in whom developmental delay is suspected, clinicians should consider further assessment (or specialist evaluation) as clinically indicated. A recommendation against population-based screening for developmental delay should facilitate these objectives by reducing potentially unnecessary referrals to specialists and increasing access to specialized services for children who have clinically evident developmental delay.

Since the previous task force recommendation was published, the Canadian Paediatric Society released a position statement supporting an enhanced well-baby visit at 18 months[41] (aimed in part at detecting developmental delay). The statement recommends that practitioners incorporate the use of a health supervision guide, such as the Rourke Baby Record[42,43] (which includes developmental surveillance), and a developmental screening tool, such as the Nipissing District Developmental Screen, the Ages and Stages Questionnaire or the Parents' Evaluation of Developmental Status, to stimulate discussions with parents about their child's development. Additionally, the province of Ontario introduced a new physician billing code to reimburse primary care providers for applying a standardized screening tool and developmental surveillance using the Nipissing District Developmental Screen[39] and the Rourke Baby Record[42,43] (or similar tools) as part of a developmental review and evaluation at the 18-month well-baby visit.[10,44,45] On the basis of the evidence review, use of the Nipissing District Developmental Screen or other screening tools does not appear to be justified. However, the current task force guideline does not preclude use of the Rourke Baby Record,[42,43] which is used for developmental surveillance rather than screening for developmental delay.

Although the task force does not recommend routine screening for developmental delay using a standardized tool in children without developmental concerns at these visits, the 18-month visit is an important opportunity for practitioners to discuss development with parents and to identify any abnormalities in the developmental trajectory, through a careful evaluation of the child's achievement of developmental milestones (i.e., developmental surveillance). Appendix 4 provides answers to questions that clinicians may have about this guideline.

Suggested performance measures

Given that the task force has recommended against screening (and that population-based screening for multiple aspects of child-related development is currently practised in some jurisdictions), a clear indicator of the uptake of this guideline would be decreased utilization of population-based screening for developmental delay in children with no known developmental concerns.

Economic implications

The cost-effectiveness of screening was not considered during development of this guideline. However, to the extent that screening children for developmental delay is not supported by evidence, following the recommendation should allow clinicians to focus on more effective and cost-effective services, for example, attending to children at risk for or identified with development delay.

Other guidelines

The 1994 task force guidelines[15,16] recommended inquiring about and recording the developmental milestones of all children at each well-baby visit. Additionally, these guidelines recommended against use of the Denver Developmental Screening Test to assess asymptomatic children and found insufficient evidence for the use of other screening tests. The Denver Developmental Screening Test was not included in the search strategy for this guideline, because its use has been shown to increase parental anxiety without improving outcomes.[16,46] The Canadian Paediatric Society position statement issued in 2011 in support of an enhanced well-baby check at 18 months included developmental surveillance and use of a developmental screening tool, such as the Nipissing District Developmental Screen, the Ages and Stages Questionnaire or the Parents' Evaluation of Developmental Status, to stimulate discussion with parents about their child's development.[41] The United States Preventive Services Task Force 2015 guideline statement on screening for speech or language disorders in children aged five or under concluded that there was insufficient evidence to make a recommendation for or against screening.[47] The American Academy of

Table 1: International guidelines on screening for developmental delay

Organization and year	Recommendation
Canadian Task Force on Preventive Health Care	
2016 (current guideline)	The task force recommends against screening for developmental delay using standardized tools in children aged 1 to 4 years with no apparent signs of developmental delay and whose parents and clinicians have no concerns about development. Thus, this recommendation applies to children for whom there is no concern about failure to sequentially acquire age-appropriate developmental milestones for gross and fine motor, social, emotional, language and cognitive domains. Milestone ages should be based on the oldest age by which the skill should have been achieved. The recommendation does not apply to children who present with signs suggestive of possible developmental delay, those whose parents express concern that could indicate developmental delay or those whose development is being closely monitored because of identified risk factors, such as premature birth or low birth weight.
1994[15,16]	The previous guideline recommended assessing developmental milestones at each visit and recommended against use of the Denver Developmental Screening Test; there was insufficient evidence to support the inclusion or exclusion of other screening instruments.
Canadian Paediatric Society (2011)[41]	The Canadian Paediatric Society released a position paper supporting an enhanced 18-month well-baby visit. As part of the enhanced 18-month visit, the society recommends that primary care providers in clinical settings incorporate use of an evidence-based health supervision guide, such as the Rourke Baby Record (which includes a developmental surveillance tool), into the visit, and recommends use of a developmental screening tool, such as the NDDS, ASQ or PEDS/PEDS:DM, to stimulate discussion with parents about their child's development, ways to support development and any concerns.
United States Preventive Services Task Force	
2015[47]	The task force concluded that evidence was insufficient to make a recommendation for or against population-based screening for speech and language delay in children aged 5 years or younger. It recommends not screening for developmental delay in children aged 1 to 4 years if there is no suspicion of developmental delay.
2016[48]	The autism recommendation statement concluded that evidence is insufficient to assess benefits and harms of screening for autism spectrum disorder in children for whom no concerns about this disorder have been raised.
American Academy of Pediatrics (2006[11] and 2016[12])	The academy recommends that primary care providers screen all children for developmental delay using a standardized screening tool at the 9-, 18- and 30-month pediatric visits. A list of screening tools with descriptive properties is provided with the recommendation.
Scottish Intercollegiate Guidelines Network (2007)[49]	No guidance is provided on developmental delay, and population-based screening for autism spectrum disorder is not recommended.
National Institute for Health Care and Excellence (UK) (2011)[50]	No guidance is provided on developmental delay, and population-based screening for autism spectrum disorder is not recommended. Children in whom there are concerns about development or behaviour should be tested for autism spectrum disorder.

Note: ASQ = Ages and Stages Questionnaire, NDDS = Nipissing District Developmental Screen, PEDS = Parents' Evaluation of Developmental Status, PEDS:DM = Parents' Evaluation of Developmental Status: Developmental Milestones.

Pediatrics recommends that primary care physicians conduct developmental surveillance, as well as routine screening for developmental delay using a standardized screening tool at the 9-, 18- and 30-month pediatric visits and screening for autism using a standardized screening tool at the 18- and 24-month visits.[11,12] A list of screening tools with descriptive properties accompanies the recommendation from the American Academy of Pediatrics.[11] Table 1 compares the current and previous task force guidelines, as well as recommendations from other groups. Differences in guideline recommendations between organizations may relate to different judgements about the quality of evidence or about the value of interventions in the absence of high-quality evidence.

Gaps in knowledge

Developmental delay is an important issue for families and society, but high-quality studies examining the benefits of screening and the long-term effectiveness of treatment are lacking. Given that children with developmental delay are often identified in clinical practice, studies evaluating the best ways to treat children with known developmental delay should be an urgent priority, especially given the promising findings about the potential benefits of treating such problems once they are diagnosed. In addition, high-quality studies that evaluate the potential benefits and the most effective methods for surveillance of developmental milestones or case finding would be useful.

Conclusion

The task force recommends against population-based screening using standardized tools in children aged one to four years with no apparent signs of developmental delay whose parents and clinicians have no specific concerns, because of the lack of evidence for clinically meaningful benefit. Instead, primary care providers should remain vigilant in monitoring a child's development at each clinical encounter (i.e., developmental surveillance) and should focus on confirming the diagnosis of developmental delay among children in whom it is suspected.

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