

# Pediatric Views



## Autism diagnosis, treatment elude 'magic bullet'

**O**n first impression, 5-year-old Peter does not seem to have special needs. His watchful eyes light up when he sees a toy rocket he likes, and he is perfectly agreeable as **Ellen Hanson, PhD**, invites him to play some games with her. Dr. Hanson, a psychology fellow in the Developmental Medicine Center at Children's Hospital Boston, is evaluating the progress of Peter's intensive therapy for autism—in part because officials at Peter's school insist, despite a clear diagnosis, that he suffers from ADHD or another disorder.

For schools and parents, it can be difficult to see the connection between behavior such as Peter's and autistic spectrum disorder. Peter functions on the high end of the autistic spectrum—well above the 80 percent of autistic children with co-morbid mental retardation, language disability or severe disconnection from the external world. Yet as Dr. Hanson

and **Janice Ware, PhD**, associate director of the Developmental Medicine Center, conduct Peter's evaluation, they illuminate the subtle and not-so-subtle signs of high-functioning autism.

For example, although Peter is well behaved, he makes few social references such as seeking parental approval or making eye contact. He plays happily with Dr. Hanson, but fixates on the toy rocket and ignores every attempt by his playmate to develop an interaction. He learns a short story about a bird, but retells it without elaboration, gesture or inflection.

Diagnosing autism can be particularly difficult for primary care providers, who only see a snapshot of child behavior and interactions in a typical office visit. And unfortunately, there is no simple checklist of screening questions that can make the task any easier. "I've asked many pediatri-

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- The average age of autism diagnosis in the U.S. is 8 years; in Boston, the average falls between 3 and 5 years. Children's Hospital Boston makes most of its diagnoses before age 3.
- The earlier autistic spectrum disorder is caught, the earlier intervention can begin. However, at very young ages there is no reliable way to determine how severe the problem is.
- Early evaluations can give false negatives, as mild disorders on the spectrum, such as Asberger's Syndrome, are easily missed at a young age.
- Autism is often misdiagnosed as a language disability, mental health issue, obsessive-compulsive disorder or ADHD.

## Digital picture system improves service and care



S. Ted Treves, MD, vice-chair of Radiology IT and chief of Nuclear Medicine, views a high-resolution image over Children's PACS network.

**C**hildren's Hospital Boston's Department of Radiology is in the final stages of implementing a new digital archive of radiological images, known as Picture Archiving and Communication System (PACS), that has made film a thing of the past, and in the process improved both customer service and patient care.

According to **S. Ted Treves, MD**, vice-chair of Radiology IT and chief of Nuclear Medicine, the goal is to allow Children's staff to share "any image, any time, any place" within the hospital network. The system functions as a state-of-the-art repository for long-term archiving of digital images, and includes the backup and bandwidth to safeguard uninterrupted network availability.

The project has already:

- Augmented the ability of clinicians to get information—and act upon it—much more quickly. Whether the brace shop at Children's main campus, which makes prosthetics and orthotics, needs precise measurements from an X-ray, or a neurologist at the South Shore Hospital needs printouts of an MRI scan, the image is only a mouse-click away.
- Improved patient care by allowing specialists at different locations to access an image simultaneously.

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# Q&A: Racial disparities in health care

Tracy Lieu, MD, MPH, is a Children's pediatrician and the director of the Center for Child Health Care Studies, a research and teaching collaboration between Harvard Medical School and Harvard Pilgrim Health Care. She recently talked to *Pediatric Views* about the implications her research may have for understanding racial disparities in health care.

## How serious are racial disparities in health care?

It's quite a serious problem, and extremely pervasive. The healthcare system has effective ways of improving health, but these are sometimes not reaching the populations that need them most. It would be a simple issue if we could blame all of the disparities on financial access to care, but it turns out to be far more complex than that. In studies that have looked at patients who have good insurance and good financial access to health care, it turns out that black adults and children are sometimes still less likely to receive effective services than white children and adults. There are many researchers trying to figure out why that is.

## What can your research on asthma tell us about health care disparities in general?

Asthma is one of the most important diseases in childhood, and it affects black children more often and more severely than it affects white children. No one, however, has been able to say exactly why. In addition, if a black child and a white child have asthma attacks of equal severity, the black child is more likely to be hospitalized. This raises some complex questions: Are doctors less likely to recommend preventive medicines to black patients? Are black families less likely to adopt these medicines if they are recommended? We don't completely understand what's going on, but we think that the lapse in care probably lies in patterns of communication between physicians and parents. For example, a doctor might recommend appropriate

preventive medicine for a child with asthma, but if a communication gap occurs, the parent may not understand that it's meant to be used every day. The hypothesis is that these types of gaps arise more frequently for black and Latino families.

## Your research focuses on "culturally tailored interventions." What do you mean by that?

Culturally tailored interventions try to take into account the fact that families from different cultures come to the healthcare setting with different beliefs about what causes disease, what medicines are for and the risks that medicines may have.

## How can this understanding be integrated into patient care?

There are many types of policies that health care systems may put into place to try to address these issues. They may hire more bilingual providers or interpreters, or give everyone training in cultural sensitivity. There are also fairly simple logistical steps, like printing patient information in different languages and representing all races in your printed materials.

In one recent study, we found that practice sites with stronger policies promoting cultural competence not only received more positive feedback from families, but also showed better rates of preventive medicine use among minority patients. That was surprising to me—I wouldn't have guessed that improvement in care would be so closely associated with action at the policy level.

## How Children's Hospital Boston is addressing cultural competence:

In 1999, Children's staff published "Honoring Patient Preferences: A Guide to Complying with Multicultural Patient Requirements" (Jossey-Bass). This is one of many resources made available to Children's staff on understanding diverse religious and cultural traditions.

In 2001, Children's established a Diversity and Cultural Competency Task Force to focus on cultural competence issues in family education and services, human resources and staff training, and clinical and support services.

Beginning in 2004, Children's new director of Diversity and Cultural Competence will lead a comprehensive analysis of the hospital's existing diversity initiatives and resources in this area, and will be charged with improving, coordinating and expanding upon those efforts.

For more information on Dr. Lieu's work, see "Racial/Ethnic Variation in Asthma Status and Management Practices Among Children in Managed Medicaid," *Pediatrics*, May 2002.

For resources on culturally effective pediatric care from the American Academy of Pediatrics visit:

[www.aap.org/commpeds/cepc/resources.htm](http://www.aap.org/commpeds/cepc/resources.htm)

## How to reach us

**Main number**  
(617) 355-6000

**Call Center**  
(800) 355-7944

**Emergency Services**  
(617) 355-6611

**Transport Team**  
(866) 355-7944

**TTY**  
(800) 355-8021

**On the Web**  
[www.childrenshospital.org](http://www.childrenshospital.org)

# 'Tis the Season for RSV Susan Hamilton-Bruno, RN, MS



As a pediatric critical care clinical nurse specialist in the Medical/Surgical Intensive Care Unit at Children's

Hospital Boston, I

never look forward to the return of the winter viral season, primarily because of one culprit: respiratory syncytial virus (RSV). It is hard to predict how intense this virus will hit in any given year, so Children's ICU always prepares for an influx of RSV patients by reviewing infection control procedures and updating staff on current RSV management strategies.

It is estimated that as many as 126,000 U.S. children under 1 year old are hospitalized with RSV every year. Infants considered at highest risk are

those with underlying chronic conditions such as prematurity, congenital heart disease or lung disease. Any infants who fit into these high-risk categories or have extreme tachypnea, wheezing or respiratory distress, consolidation on chest x-ray, or overall toxic appearance should be referred for possible admission.

Care for RSV continues to be mostly supportive. Approximately two percent of all patients hospitalized require mechanical ventilation. Indications for intubation include apnea, severe desaturation episodes or respiratory failure evidenced by elevated carbon dioxide and decreased oxygenation on arterial blood gas. Care is directed at maintaining oxygenation, assuring adequate hydration and providing symptom relief. Since severity of infection and response to treatments varies greatly, each infant

treated for RSV at Children's has an individualized plan of care.

It is important for all healthcare providers to make the general public aware of the risks of RSV in infants. New parents of infants born in the high-risk months should receive information about the importance of good hand washing and other strategies to protect their infants. Although clinical professionals are well aware of the necessity of infection control practices, the vulnerability of our patients during this season is a good reason for us to refresh our own precautions against the spread of the infection.

*For more information on updating staff on current RSV Management Strategies, e-mail [susan.hamilton-bruno@tch.harvard.edu](mailto:susan.hamilton-bruno@tch.harvard.edu)*

## Osgood-Schlatter's Syndrome: A REAL PAIN IN THE KNEE

Brian FitzGerald, BSN, LATC, athletic trainer in Children's Department of Sports Medicine

Knee pain is common in adolescents who experience a rapid growth spurt, but in physically active teens, such pain is just as likely to indicate an acute or overuse injury. In the case of Osgood-Schlatter's syndrome (OS), both growth and injury can play a role, and activity restrictions provide the best route to an excellent prognosis.

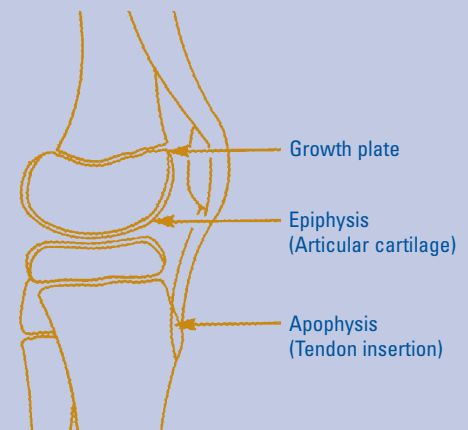
OS is a traction apophysitis of the tibial tuberosity, or inflammation created where a tight patella tendon creates tension, pulling away from bone attachment below the knee. The problem is associated with growth spurts, since rapidly lengthening bones cause the quadriceps, hamstring, gastrocnemius muscles and their tendons to become tight and inflexible, creating tension and tenderness at the insertion of these muscle tendons to the bone. A bony prominence can often develop over the traction site, causing discomfort with kneeling and contact. This condition becomes exacerbated by sports requiring repetitive quadriceps contractions.

Although it is generally a benign condition, OS is one of the most common causes of knee pain in adolescent athletes. More serious consequences, including formation of a free ossicle at the site of traction that may require surgical excision, can be avoided with early diagnosis and treatment.

Generally, OS can be treated symptomatically in the primary care setting. However, if pain persists (especially during inactivity), the patient should be referred to an experienced specialist to rule out the possibility of free ossicle, avulsion fracture, infection or tumor.

Treatment generally includes rest and ice until symptoms subside, followed by stretching and strengthening exercises of the quadriceps. If on examination the tendon is "hot" to the touch, the patient should be advised to stop any activities that aggravate the condition, treat with NSAIDs and ice. Once the knee is no longer tender, a patient who is compliant with stretching exercises may return to activity, but should use an infrapatella strap or patella tracking brace.

*To find out more about Children's Sports Medicine Program, visit [www.childrenshospital.org/sportsmed](http://www.childrenshospital.org/sportsmed). To refer a patient, please call (617) 355-3501 for our Boston office, (781) 672-2100 for Lexington, or (978) 538-3600 for Peabody.*





# Frontiers in Pediatric Surgery

## Old friends catch up at Advances



**Lisa Yessayan, MD**, of Belmont and **Leonard Rappaport, MD**, Director of the Developmental Medicine Center at Children's Hospital Boston, at Advances in Pediatric Healthcare at the Quincy Marriott on October 8. The next full day educational conference geared toward Pediatricians will be Frontiers in Pediatric Surgery on March 24, 2004 at the Renaissance Bedford Hotel in Bedford.

A continuing medical education series sponsored by Children's Hospital Boston and Harvard Medical School Department of Continuing Education, Frontiers in Pediatric Surgery is a new, full-day conference to inform primary pediatric providers of the changing trends in pediatric surgery.

To register, please fill out the application below.

For more information, contact Anne Vaccaro, course coordinator at (617) 355-5186

Harvard Medical School is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education for physicians.

Harvard Medical School designated this educational activity for a maximum of **6.0** category 1 credits towards the AMA Physician's Recognition Award. Each physician should claim only those credits that he/she actually spent in the educational activity.

Nursing Staff Development at Children's Hospital Boston is an approved provider of continuing education by the Ohio Nurses Association, an accredited approver by the American Nurses Credentialing Center's Commission on Accreditation. **6.0** Contact Hours are currently pending for this conference.

**There is a \$50 non-refundable registration fee for this seminar.**

After registering and submitting payment, you will receive a confirmation letter, including directions to the Renaissance Bedford Hotel in Bedford, Mass.

Please mail this application, along with a check or money order made payable to Children's Hospital Boston, to:

**Anne Vaccaro, Course Coordinator**  
Children's Hospital Boston  
Department of Medicine  
300 Longwood Avenue - Hunnewell 3  
Boston, MA 02115  
(617) 355-5186

### REGISTRATION FORM

FPS-SP04

Name \_\_\_\_\_  
*last* *first*

Practice \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Daytime Telephone ( ) \_\_\_\_\_

MD  NP  RN  DO  PA  Other

# CME corner

## Course Schedule

|                |   |
|----------------|---|
| 7:30–8:20 am   | <b>Sign-in and Reception</b>  |
| 8:20–8:30 am   | <b>Introduction and Welcome</b><br>Robert Shamberger, M.D.  |
| 8:30–9:00 am   | GER: Surgical Indications and Repair<br>Tom Jaksic, M.D., Ph.D.                                   |
| 9:00–9:30 am   | Common Injuries – Evaluation and Treatment<br>Lawrence Karlin, M.D.                               |
| 9:30–10:00 am  | Workup and Management of Hearing Loss<br>Greg Licameli, M.D.                                      |
| 10:00–10:30 am | Management of Vesico-Ureteral Reflux<br>Joseph Borer, M.D.  |
| 10:30–11:00 am | <b>Break</b>  |
| 11:00–11:25 am | Craniosynostosis – When Should I Refer the Child with an Unusual Head Shape<br>Mark Proctor, M.D. |
| 11:25–11:50 am | Plagiocephaly<br>Gary Rogers, M.D.  |
| 11:50–12:15 pm | Strabismus: Update on Diagnosis and Treatment<br>David Hunter, M.D., Ph.D.                        |
| 12:15–1:00 pm  | <b>Lunch</b>  |
| 1:00–1:30 pm   | Pelvic Pain<br>Marc Laufer, M.D.  |
| 1:30–1:55 pm   | Trouble Around the Groin:<br>Hernias, Hydroceles and UDTs<br>Catherine Chen, M.D., M.P.H.         |
| 1:55–2:20 pm   | Workup and Evaluation of the Neck Mass<br>Dwight Jones, M.D.                                      |
| 2:20–2:45 pm   | Management of Disorders of the External Genitalia Including Hypospadias<br>Marc Cendron, M.D.     |
| 2:45–3:15 pm   | Dislocated Hips and Common Neonatal Problems<br>James Kasser, M.D.                                |
| 3:15–3:30 pm   | <b>Closure and Evaluations</b>  |

Children's Hospital Boston and Harvard Medical School's Department of Continuing Education present the **Pediatric Health Care Summits**. The summits are free, community-based continuing medical education seminars designed to inform primary pediatric providers of trends in the management of common pediatric health concerns. For more information or to register, visit [www.childrenshospital.org/resources/cme/courses.cfm](http://www.childrenshospital.org/resources/cme/courses.cfm) or call Physician Relations at (617) 355-2454.

### Beverly Hospital

**Date/Time** April 2, 2004 7 am - 12:30 pm

#### Topics

TBD

#### Location

85 Herrick Street, Beverly, Mass.

**Credits** 4 hours

### South Shore Hospital

**Date/Time** May 20, 2004 7 am - 12:15 pm

#### Topics

- Promoting Healthy Bones in Children and Adolescents  
Catherine Gordon, MD, MSc
- Overuse Injuries in Children and Adolescents Lyle Micheli, MD
- Headaches David Urion, MD

#### Location

Emerson Conference Room  
55 Frogg Road, South Weymouth, Mass.

**Credits** 3 hours

### MetroWest Medical Center

**Date/Time** June 3, 2004 7:30 am - 12:30 pm

#### Topics

- Dermatology for the Primary Care Provider Stephen Gellis, MD
- Pediatric Depression Brigid Vaughan, MD
- School/Behavioral Concerns Related to Learning/Attention  
Alison Schonwald, MD
- Sports Injuries: Prevention & Treatment  
Keith Loud, MD, CM

#### Location

Perini Auditorium  
115 Lincoln Street, Framingham, Mass.

**Credits**

4 hours

*All speakers are from Children's Hospital Boston unless otherwise indicated.*

# Children's Hospital at Lexington: A "Decade of Caring"

In October, staff and employees of Children's Hospital at Lexington celebrated "A Decade of Caring" as they marked the facility's 10th birthday and honored more than 50 care providers who have worked at the site since it opened.

Launched in 1993 as a joint venture with Beth Israel Deaconess Medical Center (BIDMC), Lexington was one of Children's first full-service satellite health care centers. It offers more than 20 outpatient specialty services and 10 ancillary services. "We are proud that we have been able to bring world class medicine to families close to their homes," says Jane Venti, executive director of the Lexington satellite. "Based on our growth, it is clear that this community enjoys the access and convenience of the care we provide."

Since the site's opening, the volume of pediatric specialty care at Lexington has grown from 8,500 visits within 20 specialties to over 32,000 visits within 24 specialties. In addition, 2,300 ambulatory surgeries were performed there last year alone.

*For more information visit [www.childrenshospital.org/visiting/locate/lexingt.html](http://www.childrenshospital.org/visiting/locate/lexingt.html). To schedule an appointment, call (781) 672-2100*



At the Lexington satellite, Children's provides pediatric care and BIDMC focuses on adults. The two institutions share capital expenditures (such as real estate) and operating costs for high-tech services such as ambulatory surgery, radiology and lab services.

## PACS

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- Created a permanent, non-degradable archive that eliminates the incidence of lost film.

Direct access to the system is available throughout the hospital and its satellites, as well as to external physicians who have admitting privileges. The customer service benefits, however, will affect all patients and referring providers by reducing wait times for images and reports.

Children's is not the first to adopt a PAC system, since many comparable institutions have a similar system in place. But Dr. Treves believes Children's

### VR trims turnaround time

A second high-tech initiative in Children's Department of Radiology, implemented hand-in-hand with PACS, is a new Voice Recognition system. It has already proven its effectiveness by reducing the average turnaround time for transcribed reports from 72 hours to just four hours.

adopted PACS at a crucial point for the technology. "We were able to learn from the experience of institutions who took this road before us, while leapfrogging their abilities technologically. The timing

made it simpler for us to implement PACS, allowed us to build a more modern infrastructure, and allowed us to extend the system to any conventional PC on the network."

*For more information on the Department of Radiology visit [www.childrenshospital.org/radiology](http://www.childrenshospital.org/radiology). Referring physicians with admitting privileges to Children's and a secure ID card can gain access to PACS. For training information call (617) 355-6000 and page #7227*



## CHILDREN'S OUTLOOK – sign up today!

Children's bi-monthly newsletter will connect you to the clinical expertise of Children's specialists and subspecialists, news from our research labs, information on continuing medical education events and other useful topics. To sign up for this free service, visit [subscribe.chnews.org](http://subscribe.chnews.org)

# Pediatric PET will add to imaging capabilities



A new diagnostic imaging technology will soon be at Children's Hospital Boston. In January 2004, the Division of Nuclear Medicine will begin imaging patients in its new Positron Emission Tomography (PET) scanner. It will be one of the few such machines in the country used exclusively for pediatrics.

"This will be a tremendous benefit to our patients, because PET allows us to see functional distribution and changes in the body," says **S. Ted Treves, MD**, chief of the Division of Nuclear Medicine. A three-dimensional imaging technique that depicts the distribution of radiopharmaceuticals within the

body, PET can help diagnose disease very early. "This will complement our existing diagnostic imaging instruments, such as SPECT [Single Photon Emission

Tomography], MRI and CT. The addition of PET enhances our team's ability to obtain the highest quality studies in the safest possible way," says Dr. Treves.

"PET is an exciting technology because it provides exquisite details of regional function in the human body," says Dr. Treves. Because PET allows the assessment of chemical and physiological changes related to function and metabolism, and these alterations often take place well before physical or anatomical changes occur, PET can be a key tool for very early diagnosis of disease.

PET has already proven extremely useful to Children's Oncology, Neurology and Cardiology units. With respect to cancer, the technology can help determine whether certain tumors are active or inactive and if they have spread locally, or to distant locations from the primary tumor. In addition, images

obtained with PET are often used in conjunction with other imaging modalities such as CT and MRI to help localize changes within the body. Combining a three-dimensional PET, an MRI and a CT can help determine the precise anatomic location of active lesions and help optimize radiation oncology or surgical planning. Another important property of PET is that it allows physicians to assess the success of therapeutic interventions early, by means of serial scans.

Brain disorders such as epilepsy and brain tumors can also be evaluated using PET. Other conditions such as behavioral, learning, metabolic and cerebrovascular disorders also benefit from PET assessment. Utilizing standard diagnostic imaging procedure called SPECT along with PET, neurologists and neurosurgeons can more accurately target the origin of epileptic seizures prior to surgery.

The use of PET scans in pediatric cardiology is relatively new. PET can be used to detect whether heart muscle has been damaged in a variety of disorders.

*To schedule a PET scan appointment, or for more information, call the Division of Nuclear Medicine at (617) 355-7010 or visit [www.childrenshospital.org/nucmed](http://www.childrenshospital.org/nucmed)*

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## Autism

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cians to name the top indicators for children on the autistic spectrum, and they've all had different answers," says Dr. Ware. "The fact is, there is no magic bullet. You can't simply count the number of words a child has acquired by a given age; you have to assess the quality of the child's social interactions."

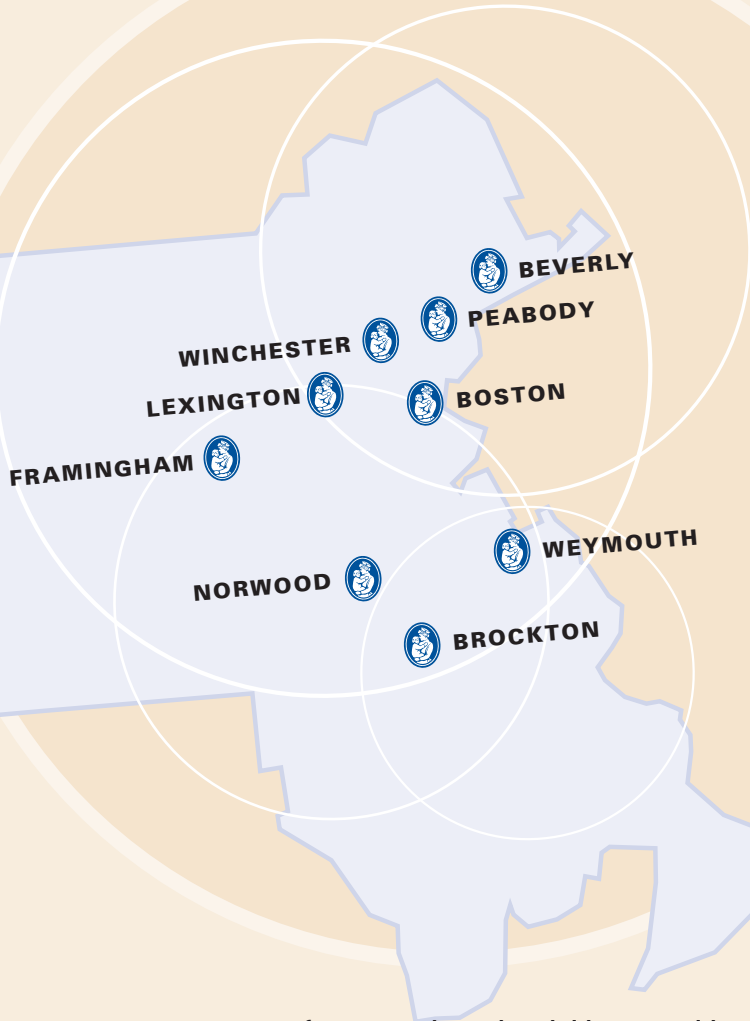
Although autism was once primarily thought of as a communication disorder, the most reliable indicators relate to a child's inability to relate socially. On balance, says Dr. Ware, there should be predominantly positive interactions—including the ability to share attention with others, spontaneous initiation of social conversation, being flexible and transitioning easily between activities. Other behavioral indicators to look for include problems establishing regular sleep patterns, not eating a

reasonable range of foods, and being late hitting language development milestones or not speaking at all.

Since evaluations are complex, time consuming and highly individualized for each patient, providers who suspect autism should refer to a developmental medicine specialist immediately. A specialist can make a diagnosis and determine what therapies—such as intensive applied behavioral analysis (ABA), relational intervention and speech pathology therapy—are appropriate for your patient.

*For more information on autistic spectrum disorders, contact Children's Developmental Medicine Center at (617) 355-7971 or visit at [www.childrenshospital.org/dmc](http://www.childrenshospital.org/dmc).*

# Children's specialists are closer than you think



Children's physicians provide multi-disciplinary pediatric specialty care at locations throughout Eastern Massachusetts. Children's specialists in cardiology, gastroenterology, neurology and other pediatric subspecialties are easily accessible to you and your patient families. Locations are right off Rte. 3, Rte. 24, Rte. 128, I-93, I-95 and the Mass Pike.

For more information about the Children's Health Network site closest to you contact Children's Call Center at (800) 355-7944, or visit our Web site at [www.childrenshospital.org/locations](http://www.childrenshospital.org/locations).

## Pediatric Views



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