Activities and Accomplishments

2011 was an exciting and productive year for the Council. One of the most important recent achievements of the PIC has been its work in pediatric NM dose reduction. During 2010 and 2011, a workgroup of pediatric NM physicians, including several Council members, developed consensus guidelines for pediatric administered radiopharmaceutical doses. This dose reduction effort resulted in a published list of 11 commonly used radiopharmaceuticals in pediatric NM practice, and can be found on the SNM PIC website and in the JNM: Gelfand MJ, Parisi, MT, Treves ST: Pediatric Radiopharmaceutical Administered Doses: 2010 North American Consensus Guidelines. JNM Feb 2011; 52(2):318-322. Ongoing efforts conjointly with the Image Gently Alliance are aimed at marketing the new recommended guidelines. This “Go with the Guidelines” marketing campaign, co-sponsored by the SNM Pediatric Imaging Council and the Image Gently Alliance, was launched November 15, 2011. Its aim is to encourage community hospitals, academic hospitals and clinics to observe the North American Consensus Guidelines for NM radiopharmaceutical doses in children. The dose recommendations, calculated on a weight basis, have been tested in children’s hospitals and yield high quality images. To foster awareness, the Campaign distributed thousands of 11 x 14-inch posters designed to remind medical practitioners to use these new guidelines for 11 frequently-performed imaging studies in children. The guidelines are available at www.snm.org, www.acr.org, www.pedrad.org, and the poster can also be downloaded at www.imagegently.org.

The Council selected Dr. Sabah Servaes as the Council’s first Pediatric Imaging Council Intern, who will serve from 2011-2013. Dr. Servaes is an Assistant Professor at the Children’s Hospital of Pennsylvania, and has been assigned a project to develop a pediatric MOC module under the leadership of Drs. Helen Nadel and Meg Parisi. Dr. Lisa States, also at the Children’s Hospital of Pennsylvania, will serve as her direct mentor.

The Pediatric Imaging Council continues to provide robust educational activities at the annual meetings, and every other year at the Mid-Winter Meetings. The Council sponsored a successful educational program at the 2011 annual SNM meeting, with 3 CME sessions and a well-attended 1-day categorical course. The scientific sessions were highlighted by Dr. Yen-Lin Lui’s scientific presentation entitled “Neuroblastic tumors (NTs) with high 18F-FDOPA avidity will show higher aromatic amino acid decarboxylase expression”, for which he received the Majd-Gilday Award, the PIC’s outstanding Young Investigator Award.
Our educational program for next year will include 4 CME sessions, but no full day
categorical course. We plan some exciting new information on Prospects for
Molecular Imaging in Children, Novel Tracers for Tumor Imaging in Children,
Pediatric Radiotherapy Applications, Advanced Hybrid imaging in Pediatrics, and our
annual Read with the Experts session.

The Pediatric Imaging Council continues to participate in the ACR Appropriateness
and performance Guidelines. Drs. Lisa States, Susan Sharp and Stephanie
Spottswood are representatives from the Pediatric Imaging Council for the evaluation
of skeletal imaging and Drs. Binkovitz and Spottswood are representatives for
gastrointestinal imaging.

Looking Forward

The pediatric radionuclide dosing recommendations will be expanded to include
lesser used tracers and possibly CT parameters.

One of our challenges for the future is to improve communication amongst our
members and with the greater NM and Molecular Imaging community. Efforts in this
regard have begun with the circulation of our first newsletter in the fall of 2011, which
we hope to publish bi-annually, to keep members abreast of new developments. Dr.
Larry Binkovitz is the current newsletter editor. The newsletter is currently available
on the PIC website. The SNM PIC website will also serve as an additional
communication tool, as it will be the reference site for PIC Board and Business
Meeting minutes and announcements for upcoming activities.

A second initiative is to improve educational content for Council members and other
interested parties. Efforts are underway to upgrade our Council webpage on the SNM
website. We have requested a “quick link” from the SNM homepage (www.snm.org)
to the PIC webpage, to allow for easy access. (Current access is via the SNM
homepage → About SNM → Councils → Pediatric Imaging Council). We have begun
to upload educational articles from the medical literature on pediatric NM topics, and
we plan to add interesting and challenging clinical cases, and a pediatric teaching
file. There is also a link to Image Gently, where readers can learn about dose
reduction in pediatric imaging. The Council plans to merge the activities of the
pednucmed.org website with the pediatric NM list-server in the near future, and
eventually consolidate these activities into the SNM PIC website.

Finally, through the e-community portal, we hope to be able to better communicate
amongst ourselves, as well as with our non-member colleagues in the international
pediatric NM community. Our hope is that the e-community will provide a forum for
posting questions about protocols, imaging problems and challenging cases, much
like what was achieved with the forums in pednucmed.org and the pediatric NM list-
server.
The PIC strives to maintain its stated mission to:
- Provide a forum for members with similar interest
- Provide expertise in the field of interest to the membership
- Foster research and education in pediatric imaging using radiopharmaceuticals
- Provide outreach to other professional organizations
- Nurture new membership into the society
- Serve as a resource to SNM leadership

**Officers of the Council**

President: Stephanie Spottswood
Secretary-Treasurer: Susan Sharp
Immediate Past President: Larry Binkovitz

Board of Directors: All Council Officers
Daniel Levin, M.D.
Gerald Mandell, M.D.
Susan E. Sharp, M.D.
Nanci Burchell, C.N.M.T.

Ex-Officio Members: Sabah Servaes (Intern)
(non-voting) Michael Gelfand, MD (Past President I)
Meg Parisi, MD (Past President II)
Helen Nadel, MD
Ted Treves, MD
Massoud Majd, MD
Mission

1. Provide a forum for members to exchange ideas, concepts, techniques and practices related to pediatric nuclear medicine
2. Provide expertise in pediatric nuclear medicine to SNM membership
3. Foster research and education in pediatric nuclear medicine
4. Provide outreach to other professionals and organizations
5. Encourage SNM membership and Pediatric Imaging Council membership in the Pediatric nuclear medicine community
6. Serve as a resource to the SNM leadership
<table>
<thead>
<tr>
<th>Radiopharmaceutical</th>
<th>Recommended Administered Activity (based on weight only)</th>
<th>Minimum Administered Activity</th>
<th>Maximum Administered Activity</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>$^{123}$I-MIBG</td>
<td>5.2 MBq/kg ($0.14 \text{ mCi/kg}$)</td>
<td>37 MBq ($1.0 \text{ mCi}$)</td>
<td>370 MBq ($10.0 \text{ mCi}$)</td>
<td>The EANM Dosage Card 2007 version administered activity may be used in patients over 10 kg.</td>
</tr>
<tr>
<td>$^{99m}$Tc-MDP</td>
<td>9.3 MBq/kg ($0.25 \text{ mCi/kg}$)</td>
<td>37 MBq ($1.0 \text{ mCi}$)</td>
<td></td>
<td>The EANM Dosage Card 2007 version administered activity may also be used.</td>
</tr>
<tr>
<td>$^{18}$F-FDG</td>
<td>body 3.7-5.2 MBq/kg ($0.10-0.14 \text{ mCi/kg}$) brain 3.7 MBq/kg ($0.10 \text{ mCi/kg}$)</td>
<td>37 MBq ($1.0 \text{ mCi}$)</td>
<td></td>
<td>The low end of the dose range should be considered for smaller patients. Administered activity may take into account patient mass and time available on the PET scanner. The EANM Dosage Card 2007 version administered activity may also be used.</td>
</tr>
<tr>
<td>$^{99m}$Tc-DMSA</td>
<td>1.85 MBq/kg ($0.05 \text{ mCi/kg}$)</td>
<td>18.5 MBq ($0.5 \text{ mCi}$)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>99mTc-MAG3</strong></td>
<td><strong>without flow study</strong>&lt;br&gt;3.7 MBq/kg&lt;br&gt;(0.10 mCi/kg)</td>
<td>37 MBq&lt;br&gt;(1.0 mCi)</td>
<td>148 MBq&lt;br&gt;(4 mCi)</td>
<td>The administered activities at left assume that image data are reframed at 1 min/image. The administered activity may be reduced if image data are reframed at a longer time per image. The EANM Dosage Card 2007 version(^1) administered activity may also be used.</td>
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<tr>
<td><strong>with flow study</strong>&lt;br&gt;5.55 MBq/kg&lt;br&gt;(0.15 mCi/kg)</td>
<td>The EANM Dosage Card 2007 version(^1) administered activity may also be used.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>99mTc-IDA</strong></td>
<td>1.85 MBq/kg&lt;br&gt;(0.05 mCi/kg)</td>
<td>18.5 MBq&lt;br&gt;(0.5 mCi)</td>
<td>A higher administered activity of 1 mCi may be considered for neonatal jaundice. The EANM Dosage Card 2007 version(^1) administered activity may also be used.</td>
<td></td>
</tr>
<tr>
<td><strong>if Tc-99m used for ventilation</strong>&lt;br&gt;2.59 MBq/kg&lt;br&gt;(0.07 mCi/kg)</td>
<td>The EANM Dosage Card 2007 version(^1) administered activity may also be used.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>no Tc-99m ventilation study</strong>&lt;br&gt;1.11 MBq/kg&lt;br&gt;(0.03 mCi/kg)</td>
<td>14.8 MBq&lt;br&gt;(0.4 mCi)</td>
<td>The EANM Dosage Card 2007 version(^1) administered activity may also be used.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>99mTc-pertechnetate (Meckel diverticulum imaging)</strong></td>
<td>1.85 MBq/kg&lt;br&gt;(0.05 mCi/kg)</td>
<td>9.25 MBq&lt;br&gt;(0.25 mCi)</td>
<td>The EANM Dose Card 2007 version(^1) administered activity may also be used.</td>
<td></td>
</tr>
</tbody>
</table>
| **18F-sodium fluoride** | 2.22 MBq/kg<br>(0.06 mCi/kg) | 18.5 MBq<br>(0.5 mCi) | }
<table>
<thead>
<tr>
<th>Radiopharmaceutical</th>
<th>Activity</th>
<th>Administration</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>99mTc</strong> (for cystography)</td>
<td>No weight-based dose</td>
<td>No more than 37 MBq (1.0 mCi) for each bladder filling cycle</td>
<td><strong>99mTc</strong>-sulfur colloid, <strong>99mTc</strong>-pertechnetate, <strong>99mTc</strong>-DTPA or possibly other <strong>99mTc</strong> radiopharmaceuticals may be used. There is a wide variety of acceptable administration techniques for <strong>99mTc</strong>, many of which will work well with lower administered activities.</td>
</tr>
<tr>
<td><strong>99mTc</strong>-sulfur colloid (for oral liquid gastric emptying)</td>
<td>No weight-based dose</td>
<td>9.25 MBq (0.25 mCi)</td>
<td>The administered activity will depend on the age of the child, the volume to be fed to the child and the time per frame used for imaging.</td>
</tr>
<tr>
<td><strong>99mTc</strong>-sulfur colloid (for solid gastric emptying)</td>
<td>No weight-based dose</td>
<td>9.25 MBq (0.25 mCi)</td>
<td>18.5 MBq (0.5 mCi)</td>
</tr>
</tbody>
</table>

(*) This information is intended as a guideline only. Local practice may vary depending on patient population, choice of collimator, and the specific requirements of clinical protocols. Administered activity may be adjusted when appropriate by order of the nuclear medicine practitioner.

For patients who weigh more than 70 kg, it is recommended that the maximum administered activity not exceed the product of the patient’s weight (kg) and the recommended weight-based administered activity. Some practitioners may choose to set a fixed maximum administered activity equal to 70 times the recommended weight-based administered activity, for example, approximately 370 MBq (10 mCi) for **18F** body imaging. The administered activities assume use of a low energy high resolution collimator for **99mTc** radiopharmaceuticals and a medium energy collimator for **123I**-MIBG.

Individual practitioners may use lower administered activities if their equipment or software permit them to do so. Higher administered activities may be required in selected patients. **No recommended dose is given for **67Ga**-citrate. Intravenous **67Ga**-citrate should be used very infrequently and only in low doses.**