



Radical Views...

from the Department of Radiology

Volume 9, Number 3
SEPTEMBER 2016



Beth Israel Deaconess
Medical Center



HARVARD MEDICAL SCHOOL
TEACHING HOSPITAL

Congratulations **Debbie Levine and her Brazilian colleagues** on having their Special Report recently published in Radiology on "**Congenital Brain Abnormalities and Zika Virus: What the Radiologist Can Expect to See Prenatally and Postnatally**" featured in the New York Times (front page), NBC News, HealthDay, Harvard Medical School In the News, and as a Top Story in AuntMinnie.com. Below is the NYT feature reformatted for Radical Views: [Brain Scans of Brazilian Babies Show Array of Zika Effects](#) By PAM BELLUCK (on-line 8/23/16).

"All the News
That's Fit to Print"

The New York Times

Late Edition

Today, sunshine, low humidity, warmer, high 87. Tonight, mainly clear, low 70. Tomorrow, clouds and sunshine, more humid, high 86. Weather map is on Page A14.

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NEW YORK, WEDNESDAY, AUGUST 24, 2016

\$2.50

Scans of Brains Show an Array Of Zika Effects

*Some Damage May Not
Be Obvious at Birth*

By PAM BELLUCK

The images tell a heartbreaking story: Zika's calamitous attack on the brains of babies — as seen from the inside.

A study of brain scans and ultrasound pictures of 45 Brazilian babies whose mothers were infected with Zika in pregnancy shows that the virus can inflict serious damage to many different parts of the fetal brain beyond microcephaly, the condition of unusually small heads that has become the sinister signature of Zika.

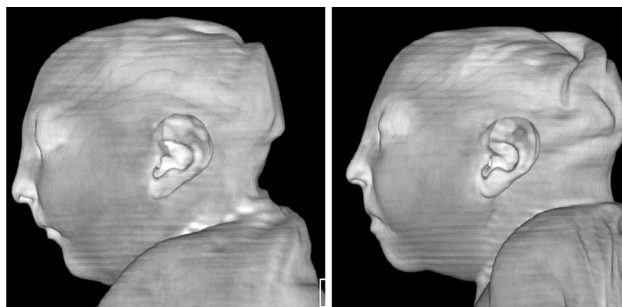
The images, published Tuesday in the journal Radiology, also suggest a grim possibility: Because some of the damage was seen in brain areas that continue to develop after birth, it may be that babies born without obvious impairment will experience problems as they grow.

"It really brings to the forefront the importance of truly understanding the impact of Zika virus and the fact that we need to follow children who not only are exposed to Zika in pregnancy, but even those who don't appear to have any complications at birth," said Dr. Catherine Y. Spong, chief of the pregnancy and perinatology branch of the Eunice Kennedy Shriver National Institute of Child

Continued on Page A12

On-line
version of this
article reformatted
for Radical Views.

See pg. 17 for free access to the original publication "**Congenital Brain Abnormalities and Zika Virus: What the Radiologist Can Expect to See Prenatally and Postnatally**" in Radiology.

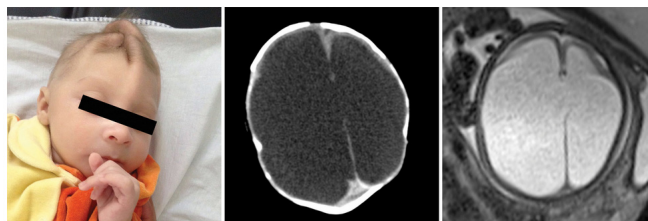


Images show the damage inflicted on the heads of twin girls born with the Zika virus. Radiology

The images tell a heartbreaking story: Zika's calamitous attack on the brains of babies — as seen from the inside.

A study of brain scans and ultrasound pictures of 45 Brazilian babies whose mothers were infected with Zika in pregnancy shows that the virus can inflict serious damage to many different parts of the fetal brain beyond microcephaly, the condition of unusually small heads that has become the sinister signature of Zika.

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Radiology

"It really brings to the forefront the importance of truly understanding the impact of Zika virus and the fact that we need to follow children who not only are exposed to Zika in pregnancy, but even those who don't appear to have any complications at birth," said Dr. Catherine Y. Spong, acting director of the Eunice Kennedy

Shriver National Institute of Child Health and Human Development, who was not involved in the study.

Most of the babies in the study were born with microcephaly, although three were not. Each also suffered other impairments, almost all of which emerge earlier than microcephaly because a smaller head is really a consequence of a brain that has failed to develop fully or has been damaged along the way, experts said.

"The brain that should be there is not there," said Dr. Deborah Levine, an author of the study and a professor of radiology at Harvard Medical School. "The abnormalities that we see in the brain suggest a very early disruption of the brain development process."

The scans show the range of Zika's brain targets, some of which experts knew about, including the corpus callosum, which facilitates communication between the two hemispheres; the cerebellum, which plays a significant role in movement, balance and speech; and the basal ganglia, which are involved in thinking and emotion.



"I think we were all aware that Zika causes brain abnormalities, but it's been more generic," said Dr. Rita Driggers, an associate professor of gynecology and obstetrics at Johns Hopkins University School of Medicine, who was not involved in the study. "Now we know more specifically what we're looking for in terms of brain abnormalities before the microcephaly occurs."

Together, the images provide a more detailed guide that might help doctors diagnose Zika-related fetal damage earlier — possibly in the second trimester at a point early enough to help women decide whether to terminate a pregnancy, said Dr. Adre du Plessis, director of the Fetal Medicine Institute of Children's National Health System, who was not involved in the study.

At the same time, the study may eventually help doctors rule out damage caused by Zika infection. "If there's any uncertainty on ultrasound, we're concerned that couples that are not risk-takers and don't want to gamble might be terminating perfectly normal babies, which is of course a concern to us," he said. "So there is a lot riding on being able to image accurately."

One finding that surprised several experts could become an especially meaningful diagnostic clue. Many infections that target the brain produce clumps of calcium, called calcification. But in Zika-infected babies, calcification often occurred in an unusual place: at the intersection of the gray matter of the outer layer of the brain, the cortex, and the white matter of the layer just below that.



That pattern could emerge as a particular stamp of Zika infection, experts said. Dr. Spong said that because the area involves two different types of blood vessels, it might suggest that Zika targets vascular areas.

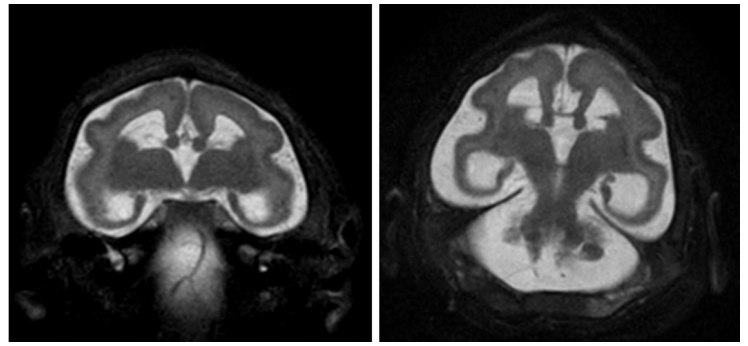
And it could signal why the virus wreaks such ruthless effects on brain development.

"That is a critical area for brain formation," Dr. du Plessis said. At the gray-white matter intersection, healthy cells "release certain chemicals that allow the neurons to find their precise destination."

"When that gets scrambled they end up in the wrong place, they don't function the way they should, and messaging and connectivity is severely deranged."

Most of the babies in the study had such damage in the cortex, which plays a crucial role in learning, memory and coordination, and also continues to develop at least through infancy, suggesting that Zika-infected babies who seemed to emerge unscathed might be vulnerable to difficulties as they

grow.



Another abnormality seen in most of the babies' brains involved the ventricles or cavities of the brain becoming so full of cerebrospinal fluid that they "blow up like a balloon," Dr. Levine said. The ventricles may be filling with fluid because Zika is obstructing their ability to drain normally, or because damage to other brain areas leaves a kind of vacuum that the enlarged ventricles fill.

The fluid-filled ventricles can make the head size seem normal earlier in pregnancy, Dr. Levine said. But as scans of one pregnancy taken at 36 weeks gestation show, the fluid can be so prominent that the scan shows what "looks like the skull and very little brain tissue inside it," she said.

At some point, these ventricles, "like a balloon, can pop," she said. And if they do, "the brain will collapse on itself."

The images come from 17 babies whose mothers had confirmed Zika infection during pregnancy and 28 without laboratory confirmation but with all indications of Zika infection. Dr. Levine worked with colleagues in Brazil, which has more than 1,800 cases of microcephaly, to analyze images from the Instituto de Pesquisa in Paraiba in the northeastern part of the country. Three of the babies died in the first three days of life, and researchers studied autopsy reports in those cases.



<http://www.nytimes.com/interactive/2016/health/what-is-zika-virus.html>

The images include scans of twin girls, who both developed microcephaly. The pictures show folds of overlapping skin and a sloping forehead, indications not only that the brain is smaller, but also that the forebrain has not developed normally, Dr. Levine said.

Images of another baby girl show contracted hands and arms, the result of another common symptom. Zika seems to damage the nerves in a developing fetus so that sometimes "muscles aren't developing normally because they don't have the nerve impulses to move normally," she said. "And then when they're born, they're stuck in this contracted position."

Dr. Levine said the images suggest that Zika is like a formidable enemy able to do damage in three ways: keeping parts of the brain from forming normally, obstructing areas of the brain, and destroying parts of the brain after they form.

With such a vicious and unpredictable virus, "it's key to realize that Zika is more than microcephaly, that there's a number of other abnormalities as they've shown in this paper, and its effects are going to be even more broad," said Dr. Spong, whose agency has begun a study of what will ultimately be 10,000 babies born in Zika epidemic areas including Brazil and Puerto Rico.

"It's going to be essential to follow them to look at their development, to look at their ability to learn, to look at hearing problems, balance problems, behavior problems, all those issues, to make sure that we don't miss anyone."

September 2016 GRAND ROUNDS:

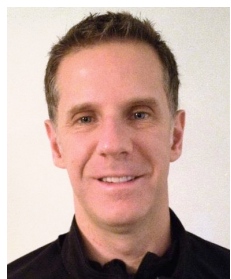


Friday, September 2, 2016: 12 noon - 1:00 PM • Rabkin Board Room, Shapiro-10

Zika virus: epidemiology and imaging of the fetus/neonate

Deborah Levine, MD - Director, Obstetric & Gynecologic Ultrasound and Vice Chair for Academic Affairs, Department of Radiology at BIDMC; Professor of Radiology, Harvard Medical School

We start our academic year with a presentation from Dr. Deborah Levine who has most recently co-authored an image-intensive publication on radiological findings of neonates infected with the Zika virus and she will be sharing her findings with us. This work has been published in Radiology and has been covered extensively in the national media including a front page article in the New York Times. The objectives of her talk include: 1) Learn about the history and spread of the Zika virus, 2) understand the problems with demonstrating the findings due to congenital Zika infection, 3) recognize the prenatal and postnatal appearance of congenital Zika infection.



Friday, September 16, 2016: 12 noon - 1:00 PM • Rabkin Board Room, Shapiro-10

Medicare Reimbursement Update: The MACRA law

Greg Nicola - Vice President of the Hackensack Radiology Group, Hackensack University Medical Center, Hackensack, New Jersey and Chair of the American College of Radiology's MACRA committee.

The Medicare Access and CHIP Reauthorization Act of 2015 (MACRA) is a US law that provides a new framework for rewarding physicians for providing higher quality care. Future physician reimbursements from the CMS will be determined by MACRA using two pathways: Merit-based Incentive Payment Systems (MIPS) and Alternative Payment Models (APM). If these acronyms are new to you: this talk is for you! This law will define how all physicians in the United States will get paid starting in 2017.

Welcome New Faculty: Lynn Kim, MD



In late August, Dr. Lynn Kim joined us as a per diem Ambulatory Care and Community Radiology staff member, currently assigned to Chestnut Hill. Dr. Kim comes to BIDMC most recently from Harvard Vanguard-Atrius Health, Boston and also devoted several years in community radiology at Brigham & Women's Hospital. She completed

fellowship training in MRI at the University of Rochester Medical Center in New York and residency at UMASS Worcester and earned her MD at Hahnemann University School of Medicine in Philadelphia.

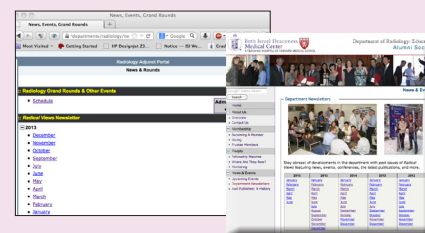
In case you missed an issue of Radical Views!

All back issues are available on the BIDMC portal under "News and Events":

<https://portal.bidmc.org/Intranets/Clinical/Radiology/news.aspx>

and **we also have an outside link on the alumni site:**

<http://radnet.bidmc.harvard.edu/education/newsletters.asp>



The portal will always have the most current/updated versions so please keep checking as needed.

Radiology Calendar SEPTEMBER 2016

Check for the most up-to-date schedule at: <https://apps.bidmc.org/departments/radiology/residency/conferences/displayMonth.asp>

Mon	Tues	Wed	Thurs	Fri
Weekly Mon Section Meetings: 3:00-4:00 ED section meeting [ED annex, WCC]		Weekly Wed Section Meetings: 11:00-12:00 MSK clinical conference 12:00-1:00 CardioThoracic, GI/GU Oncology 3:00-4:00 Mammo [TCC-484]	Weekly Thurs Section Meetings: 12:00 - 1:30 Abd [WCC-354] 12:00-1:00 MSK	* Note that as of July 2016, our 12 noon Friday Grand Rounds will now be in the Rabkin Board Room , Shapiro-10, East Campus (except when noted otherwise)
			1 7:30 - 8:15 Benign Liver Lesions (Koenraad Mortele) 8:15 - 9:00 Small group case conference (Koenraad Mortele)	2 7:30 - 8:00 Code Silver Training (Declan Carbery) 12:00 - 1:00 Grand Rounds: Zika virus: epidemiology and imaging of the fetus/neonate (Debbie Levine)
5 Labor Day Holiday	6 7:30 - 8:15 Chest (Paul Spirn) 8:15 - 9:00 Chest (Paul Spirn) 12:00 - 1:00 Neuro call prep session (Neuro fellows)	7 7:30 - 8:15 Chest (Paul Spirn) 8:15 - 9:00 Chest (Paul Spirn) 12:00 - 1:00 Neuro case conference (Neuro fellows)	8 7:30 - 9:00 History of Radiology (Ronald Eisenberg) 3:00-4:00 West MedRads - Sr Resident, West Body CT [Clouse]	9 7:30 - 9:00 12:00 - 1:00 No Grand Rounds: NERRS
12 7:30 - 8:15 MSK (TBD) 8:15 - 9:00 MSK (TBD) 12:00-1:00 MRI Meeting [Ansin 2]	13 7:30 - 8:15 MSK (TBD) 8:15 - 9:00 MSK (TBD) 10:30-11:30 NMMI meeting [GZ-103]	14 7:30 - 9:00 Neuro lecture (TBD) 12:00 - 1:00 Neuro case conference (Neuro fellows) 7:15-8:00 US meeting [WCC-304A]	15 7:30 - 8:15 MSK (TBD) 8:15 - 9:00 MSK (TBD)	16 7:30 - 9:00 12:00 - 1:00 Grand Rounds: Medicare Reimbursement Update: The MACRA law (Greg Nicola)
19 7:30 - 9:00 Career Week (TBD)	20 7:30 - 9:00 Career Week (TBD) 8:00-9:00 IR Meeting [West Recovery]	21 7:30 - 9:00 Career Week (TBD) 12:00 - 1:00 Neuro case conference (Neuro fellows)	22 7:30 - 9:00 Career Week (TBD) 3:00-4:00 West MedRads - Sr Resident, West Body CT [Clouse]	23 12:00 - 1:00 Grand Rounds: Chief Rounds
26 7:30 - 8:15 VQ scans (J. Anthony Parker) 8:15 - 9:00 Renal Scans (J. Anthony Parker)	27 7:30 - 8:15 Radiopharmacy (Jeff English) 8:15 - 9:00 Gamma Cameras (Matthew Palmer) 10:30-11:30 NMMI meeting [GZ-103]	28 7:30 - 9:00 Neuro lecture (TBD) 12:00 - 1:00 Neuro case conference (Neuro fellows)	29 7:30 - 8:15 Parathyroid (Kevin Donohoe) 8:15 - 9:00 Sentinel Node (Kevin Donohoe)	30 12:00 - 1:00 Grand Rounds: Chief Rounds

The Gallery presents
A World Travel Journal by
Aideen Snell, MSW
Globe Trotting Backpacker,
Mom & Manager, Radiology
Service Excellence Program



Please contact Donna Wolfe if you, too would like to share your photos, paintings or sculptures: dwolfe@bidmc.harvard.edu or 4-2515

REMINDER: Updated Radiology Technologist Rosters & Staff Posters are available on InfoRadiology in pdf format for viewing, downloading, and printing

Log in to the portal: <https://portal.bidmc.org/>

If you don't already have InfoRadiology displayed in **My Applications**, click on the **Applications** tab and then under **Clinical**, click on **Inforadiology**. Log into Inforadiology, click on **Staff Posters Tab** to view/download/print the most current Tech Rosters, etc.

Managers: Please contact Michael Larson at mlarson1@bidmc.harvard.edu to update rosters as needed

Faculty	Breast Techs	1101 Beacon Comments
Residents & Fellows	CT Techs	Chelsea Comments
Administrations	Dx Techs	Chestnut Hill Comments
Informatics	IR/INR Techs	Lexington Comments
Nursing	MRI Techs	Needham Comments
Support Services	Nuc Techs	
	US/VASC Techs	

2016-2017 Trainee posters is now available; and the Faculty poster, in mid-Aug 2016



FROM THE CHIEF
Jonathan B. Kruskal, MD PhD

Outstanding Faculty News

As our education program continue to expand, the administrative and regulatory needs grow in parallel. To strengthen the overall efficiency and effectiveness of our programs, I am thrilled to announce that **Priscilla Slanetz** has been promoted to be **Associate Chief of Education** and will oversee all of our education programs, including medical student, resident and fellowship training programs. This deserved honor reflects the outstanding and dedicated effort that Priscilla has put into our teaching programs over many years.

Priscilla will also take over administrative responsibility for these programs and the administrative liaisons will be reporting directly up to Priscilla. Please join me in congratulating Priscilla on this deserved honor.



Harvard Faculty Teaching Award Nominations

Mary Hochman and **Yu-Ming Chang** were nominated for this year's teaching awards at Harvard Medical School and Beth Israel Deaconess Medical Center. BIDMC faculty, house officers, and Harvard medical students nominate individuals for their contributions to teaching in all venues during the past year. I am delighted to share the comments for Dr. Hochman's and Dr. Chang's nominations:



"**Dr. Hochman** is nationally renowned for her unparalleled expertise, and locally revered for her generosity, enthusiasm, and teaching prowess. Every day she shares her passion for complex anatomy and problem-solving with medical students, residents and fellows while always

validating their contributions and guiding the next step in their learning Her example and encouragement make her one of the most important mentors I've ever had, and I know that many radiology residents feel the same way. One resident recently described her perfectly as "the hero we need."



"**Dr. Chang** is always enthusiastic in teaching the rotating residents and students in his favorite topic, neuroradiology. He is always willing to stay late to teach a struggling resident how to evaluate the intricate findings on a temporal bone study or to explain the basics of brain anatomy to a new medical student ... The topic of neuroimaging is a

complex and intimidating one, but Dr. Change helps to demystify the topic and is able to spark interest in his audience, likely due to his own infectious enthusiasm for his chosen field."

Drs. Hochman and Chang will be listed as teaching award nominees in the program for the Daniel D. Federman Teaching Awards at Harvard Medical School on September 12, 2016. The contributions of faculty such as Drs. Hochman and Chang underscore BIDMC's commitment to medical education as central to patient care, and I wanted to take this opportunity to recognize and express my gratitude for their efforts and your support for her commitment to teaching.

Richard M. Schwartzstein, M.D.
Vice President for Education
Ellen and Melvin Gordon Professor of Medicine and Medical Education

Olga Brook: 1st Radiologist to receive a Gold Humanism Award

Founded in 2013, the Gold Humanism Honor Society at BIDMC is a resident-led interprofessional society aimed at fostering a humanistic, compassionate, and patient-centered care environment. The Gold Humanism Society at BIDMC annually recognizes faculty members who exhibit and model integrity, altruism, respect, and empathy in interactions with patients as well as colleagues. Faculty members are nominated and chosen by the residents in their department. This year, the residents in the Department of Radiology selected **Dr. Olga Brook** as the recipient of the 2016 Gold Humanism Society Faculty Humanism Award.

Dr. Olga Brook M.D. demonstrates outstanding bedside manner, compassion, and dedication to her patients. Multiple patients have expressed their gratitude to her noting the importance of her care on their experience. Congratulations, Dr. Brook, this recognition is well deserved!



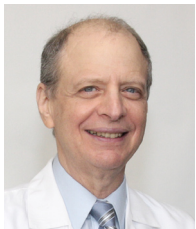
Returning from vacation, Dr. Olga Brook was surprised to be presented with the Gold Humansim award at IR rounds by 2nd yr Alexei Kudla.

SEPTEMBER'S MONTHLY TEACHING TIP

Radiology Residency Program:



Priscilla J. Slanetz,
MD, MPH, FACR,
Director



Ronald Eisenberg,
MD JD,
Associate Director



Anu Shenoy-Bhangle,
MD,
Associate Director

Mentorship

It is well known that mentoring positively influences career development and advancement. In reality, most successful academic radiologists credit multiple mentors for having an impact on their career. We are fortunate at BIDMC to have a strong mentoring program in place for our residents. Recently, all of our current second year residents self-selected a mentor through this program. However, in order to maximize success, it is important to that both the mentor and mentee make time to build and sustain a lasting relationship and follow some simple steps to ensure success (Table). By taking the time to set goals and finding a time to meet regularly, both mentor and mentee are more likely to have a more productive relationship. In addition, being engaged in a healthy mentor-mentee relationship minimizes the risk of burnout and maximizes overall career satisfaction. We are grateful to the faculty who participate in this program and look forward to great success from our trainees.

– Priscilla, Ron and Anu

Steps to Maintaining a Successful Mentor-Mentee Relationship

1. Establish specific goals for both mentee and mentor.
2. Establish ground rules for accountability, confidentiality, and boundaries up front.
3. Create a workable plan with timelines to accomplish both short-term and long-term goals.
4. Set aside time to meet at regular intervals to assess progress and provide feedback.
5. Be open to criticism, be respectful, and listen attentively to each other.
6. Regularly reflect on the relationship with regard to what is working or not working and what challenges remain to be addressed.



Adapted from: Slanetz PJ, Boiselle PM. Mentoring matters. AJR 2012;198:W11-2.

ACADEMIC MEDICINE GOAL: TEACHING TEACHERS TO TEACH

Staff Changes

Dear all,

It is with mixed emotions that we are saying goodbye to our educational manager, colleague and friend, **Katie Armstrong** who decided to leave BIDMC for an opportunity in the Department of Medicine at BWH where she will be managing a much larger and complex residency program. We will all miss Katie immensely. Her positive attitude, incredible work ethic, strong organizational skills, and exceptional knowledge base allowed her to have great impact on all of our educational programs from medical students to fellowship. Her leadership, especially during times of staff shortages, allowed our department to remain the envy of many others here at the Institution.

We wish Katie the best as she embarks on this new career opportunity. In the meantime, we are fortunate to have **Lynne Mills**, Residency Program Coordinator (7-3552) and **Love Williams**, Fellowship Programs Coordinator (7-3536) in our office and look forward to recruiting several other dynamic members to our educational team in the near future.

Priscilla

QUALITY UPDATE: Notes from the Code Silver In-Service:



Suzanne Swedeen, RN
MSN CNIV
Quality Improvement Specialist

In cooperation with the Department of Emergency Management, Betsy Grady and I have been coordinating Code Silver training throughout the department. Ongoing training will continue in September so we encourage you to take the Code Silver training on MyPath and to participate in Code Silver training in their work area. These training sessions not only give you the opportunity to ask questions but also help you to identify potential emergency exits routes and hiding spots.

Code Silver is a weapons-related threat response. This is a response to someone who is THREATENING with a weapon.

Historically weapon events occurring in a medical setting have been:

- 1) TARGETED towards a specific person(s). A targeted event is when the perpetrator targets a specific person, probably because they feel they or a loved one did not get the good care from this person so it is "revenge" situation.
- 2) MERCY killing. The "mercy killing" is when a specific patient is targeted because they are seen by the perpetrator as being in too much pain, and usually the perpetrator often takes their own life as well.
- 3) ESCAPE - a prisoner attempting an escape, perhaps by grabbing a guard's weapon.

However, in the world we live in there could be other reasons someone could mean to cause harm, but these have been the most common.

Historically most events are fast moving and over in about 10 minutes. So you should be prepared for action.

Calling in a Code Silver:

- Call 2-9911 and report a Code Silver, giving as much information as possible such as your location as well as a description of the individual. BIDMC police, Boston Police and SWAT will respond.
- Call 2-1212 and report a Code Silver, giving as much information as possible such as your location as well as a description of the individual. BIDMC police, Boston Police and SWAT will respond.
- If you call 911 from a hospital phone, you must dial 9-911. This call is to Boston Police so you need to give a description of your location including that you are calling from BIDMC, East or West campus, building, floor, etc..
- If you use your cell phone, you need to do the same, stating that you are calling from Boston at BIDMC (911 Cell phone calls may be routed to an out of state dispatcher.)

When faced with the person, can you slow them down? Are they asking to speak to someone in particular? You would want to delay them as well as alert the person they're asking for to stay away. Perhaps you could say you will page them and page them with information to call a Code Silver.

Another option if you work closely with others routinely is to have a code word or phrase to use. Maybe it's calling them by

a different name which means you need help. (e.g., Saying to Kevin, "Hey Tom, don't forget you need to call Kevin".) Talk this out with your co-workers on what you would say for a Code Silver alert.

Anything that can alert others and slow the person down will help.

However if the situation escalates you should:

RUN - Know your exits.

Perhaps there is an exit at your location you don't typically use. Take patients and others with you.

HIDE - If you can't run out of the area, then hide. Know your area. What rooms can be closed? Locked? Closets, bathrooms, locker rooms and storerooms and even cabinets. If you can't lock the door try to barricade it with desks, cabinets, chairs. Use anything that can block the door from opening. Wrap your belt around the hinge, anything. Block the windows.

Turn off the lights, and silence beepers and phones. Keep away from door windows. You want the person to think no one is there and to keep moving. If you make the room difficult to enter then the person might not waste time and will keep moving along.

FIGHT - If you can't run or hide, then fight; throw anything: pager, phone, hot coffee, computers, chairs, anything! Commit to it! By distracting and surprising the person, you could buy enough time for you or others to get away and enough time for help to arrive. Fire extinguishers are great weapons, the spray can slow someone down and you can throw the canister, too.

If the person drops their weapon kick it away and under something. (Remember, if you have the weapon when police arrive they might think you are the perpetrator and "take you out".)

ALL CLEAR

So if you are in hiding, you want to wait until you hear an "All Clear" overhead. It could take a while. Don't come out if someone tells you to, even if they say they're Boston Police. Boston Police accompanied by BIDMC Police will have keys to

FOR BOSTON MAIN CAMPUS ONLY

To Report Emergencies:

- Dial Code Line at 617-632-1212
 - State correct code or team
 - State your location & call back number
 - Code RED – Fire/Smoke
 - Code BLUE – Cardiac/Respiratory Arrest
 - Code BLUE Pedi – Pediatric Emergency
 - Code SILVER – Threat with Weapon
 - Code PURPLE – Psychiatric Emergency
 - Code PINK – Infant Abduction
 - Code STEMI – Acute MI
 - Code GRAY – Security Emergency
 - Code ORANGE – Hazardous Material Spill
 - Code OB Emergency
 - Code TRIAGE – Disaster (requires AOC activation)
 - Code Malignant Hypothermia
 - Emergent Surgical Airway
 - First Aid/Medical Emergency
- Auto Page Number: 617-632-7243



Beth Israel Deaconess
Medical Center

REVISED: 04/01/2015 Ver. 4

QUALITY UPDATE: Notes from the Code Silver In-Service: (cont'd)

all doors and will systematically sweep the environment when the event is over. Wait for them to unlock the door.

The police could ask you to place your hands on your head, lay on the floor, etc. Remember they don't know who you are and just because you are wearing scrubs or have a badge doesn't mean you're "ok".

What do I do with my patient?

OK here's the hard part...if you can't take your patient with you, then leave your patient. **YOU are the your priority.** The goal is to minimize casualties. Remember, for the most part hospital events are usually targeted, so patients are probably not the target but employees can be. It seems strange as a healthcare worker to be told it's ok to leave your patient but think of it this way - you won't be good for any patient if you become a victim.

What do I do if I hear the overhead page for Code Silver for another campus?

Do NOT report to any area where there is a Code Silver; avoid it.

What do I do if I hear the overhead page for Code Silver in my building, but not on my floor?

Again, stay clear of the floor and start preparing to evacuate. The person could move from the event floor to your area.

What do I do if I hear the overhead page for Code Silver on my floor?

Run Hide Fight.

There are people on site that can carry a weapon such as police, BIDMC police, and prison guards. However, you may have a patient who is carrying a gun, and they may be licensed to do so but the medical center's policy is for Security to secure the weapon during procedures. You can simply ask your patient to be seated and call Public Safety and tell them you have a NON THREATENING patient with a weapon that needs to be secured for you to perform their exam. You do not have to get into specifics with the patient, security will handle it.

KIP Coach TIPS

SUZANNE SWEDEEN DONS HER OTHER HAT AS KIP COACH IN RADIOLOGY:

To Print, or Not to Print, that is the Question!



Click to view the Securing PHI/PI KIP in a Minute Video:
<http://link.brightcove.com/services/player/bcpid817305526001?bckey=AQ~~,AAAAAFqngE4~,1T5CVJLfIDgH5Vlf5BfgldQPJ39fiMEk&bctid=4318186287001>
or <http://bcove.me/hn11ppvt>

Although we are moving toward a "paperless" world, whether it is online medical records, billing information, etc....it seems there will always be paper in the mix. Here are some guidelines to consider before you print patient information, or other sensitive information as part of your job:

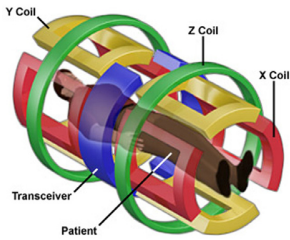
- First and foremost determine if the document really needs to be printed. Is there another option such as sending the information via email within the BIDMC network, or encrypting the information being sent outside of the BIDMC network using "#secure" in the subject line.
- If you need to travel with PHI/PI, in paper form, as part of his or her job, the documents need to be secured in a briefcase, box, secured file folder, zipped bag, etc. and must be kept with you at all times.
- Remember not to leave documents unattended whether it is at home, in the car, in public areas or areas such as a subway or café.

Remember when you no longer need the documents, they must to be disposed of in an appropriate manner. Use the designated locked shredding bins, throughout the hospital.

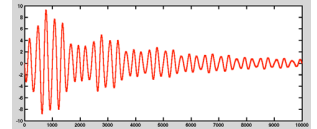


Radiology Residents & Fellows MRI Physics Course

2016-2017 Academic Year



National High Magnetic Field Laboratory



Purpose:

To provide fellows and residents with a basic understanding of MR physics, with emphasis on practical aspects of image acquisition such as protocol optimization and troubleshooting. A brief overview of fundamentals of nuclear magnetic resonance will provide an introduction to sources of image contrast in MRI. Techniques for image acquisition will be described, followed by an overview of the major families of MR pulse sequences. Topics such as accelerated imaging, fMRI, and diffusion tensor imaging will be discussed.

Format:

All sessions will be held on Wednesdays, 5-6pm at the MRI Learning Lab, Ansin 220, starting on August 31st.

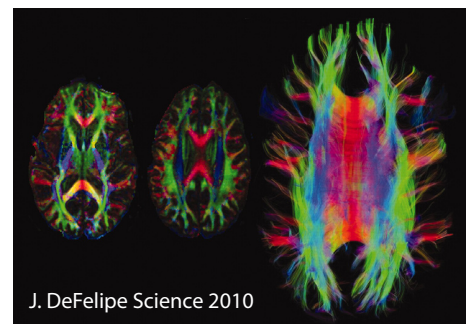
Text and Topics:

The recommended textbook is *“MRI in Practice,” 4th Edition (2011)* by Catherine Westbrook. Supplementary reading from review articles will be recommended for advanced topics.

For more information, contact Aaron Grant, PhD: 7-3265

TOPICS

1. **August 31:** The origin of the NMR signal. Nuclear magnetism. Nutation, precession, signal reception. Chemical shift. Relaxation, T1, T2. Spin dephasing, impact of gradients and magnetic field inhomogeneities.
2. **September 14:** Sources of contrast in MRI: T1 and T2 weighting, magnetization transfer, diffusion.
3. **September 21:** Overview of MR hardware, Tour of MR equipment room.
4. **September 28:** Image formation (1). Phase and frequency encoding. Basic k-space concepts.
5. **October 5:** Image formation (2), Field-of-view, and resolution. k-space sampling for given imaging parameters, and effects of undersampling (aliasing, pseudo-noise). Accelerated imaging methods.
6. **October 12:** Signal-to-Noise: Image parameters that govern SNR. Trade-offs in image optimization.
7. **October 19:** Pulse sequences. Gradient echo, spin echo, steady state, EPI. STIR/FLAIR/IR etc. Fat suppression. Spectroscopy with PRESS, STEAM, CSI.
8. **October 26:** Effects of flow and diffusion. Flow compensation, time-of-flight, phase contrast, intro to diffusion.
9. **November 2:** Contrast-enhanced MRI. Types of magnetic materials. Relaxivity and image contrast as a function of dose, TR, TE. Dynamic contrast enhanced imaging, angiography. BOLD effect, fMRI.
10. **November 9:** Accelerated imaging. Parallel imaging and compressed sensing.
11. **November 17:** Diffusion-weighted imaging and DTI in neuro applications.
12. **December 7:** Arterial spin labeling in the brain and body.
13. **December 14:** Artifacts and troubleshooting.



J. DeFelipe Science 2010

Radiology RESEARCH - Welcome New Staff



Joanna Flores - is a new Clinical Research Assistant II for Radiology Research. Currently assigned to Breast Imaging in support of several active projects in the division, Joanne spent two years as a staff assistant in Interventional Radiology at MGH before coming to BIDMC where she worked as

an administrative assistant in Hematology/Oncology before joining the Radiology Research team in mid-July.



Bridget Giarusso - is our new Research Administrator assigned by the department of Research and Academic Affairs to handle pre- and post-award processing of grants and contracts, and research intern/fellow/collaborator onboarding in the department. Bridget is a familiar face in Radiology having

served as a Clinical Research Assistant in MRI Research for the last 1.5 years. Bridget is located on Ansin 249 and can now be reached at 7-7328 or bgiaruss@bidmc.harvard.edu.



Moazzam Khan, BS - is a clinical research assistant who joined the MRI Research Team in August. He is a 2013 graduate of The University of Illinois at Chicago, where he majored in Biological Sciences. He is currently completing a Masters in Biology, with an emphasis on Neurobiology, at the Harvard Extension

School. Moazzam's interests lie in the fields of clinical and scientific research with a specific emphasis on neuroscience and public health medicine. He also hopes to help extend the reach of medical education and the accessibility of healthcare for underserved populations. Moazzam's office is in Ansin Rm. 248 and he can be reached at 7-5915.



Marc McCall, BM - is an administrative assistant supporting Vice Chair of Research Dr. Etta Pisano and Research Program Manger Elodia Cole. With a Bachelor of Music degree in piano performance from the University of Arkansas and a love of English literature, mathematics, art, architecture and film

noir, it's a small wonder that he enjoys academia and the zesty environment of research administration. He believes that music is the necessary luxury that sweetens and refines Man's existence. Marc is located on Ansin-225 and can be reached at 7-3019 or mmccall1@bidmc.harvard.edu.

What better way to bring in the new academic year than by introducing our most recent research staff members who no doubt have spent the last few weeks also getting to know our new residents, fellows and faculty/staff. Please join me in welcoming them all to the department!



Elodia B. Cole, MS
Research Program Manger



Teresa Russell, BS, BA - is a clinical research assistant from Littleton, MA and she joined the MRI Research team in mid-June. A recent graduate from The University of Rochester in NY, where she earned a BS in Neuroscience and a BA in Health, Behavior and Society, she is eager not only to delve further

into neuroscience and public health but also to pursue new disciplines to expand her knowledge base. Passionate about advancing and impacting the healthcare field, she hopes to pursue a career in medicine. Teresa's office is in Ansin Rm. 250 and she can be reached at 7-0297.



Zheng Zhang, PhD - is a new statistical collaborator available for investigators in the Department of Radiology. She joins Alex Brook in providing statistical support to the department. Dr. Zheng Zhang is an Assistant Professor in Biostatistics at Brown University who is now available to BIDMC investigators

on Thursdays to help support statistical design needs for research proposals for immediate or future grant applications. Please use Zheng's online scheduling system to setup an appointment: <http://bidmcradstat.appointy.com>.



Lujia (Steffeny) Zhou, MPH - is a data analyst in health services research. She received her undergraduate degree from Rutgers and completed an MPH from Boston University in May 2016. She has previously worked in the Department of Population Research at the Rutgers Cancer Institute analyzing large

population-based datasets from outcomes after interventional radiology procedures. Currently, Dr. Zhou is working as a Data Analyst/SAS Programmer in the lab of Dr. Ammar Sarwar on one of his Interventional Radiology Health Services Research projects.



ACR's Pisano Sees Opportunities in Cancer Moonshot

Radiologist **Etta Pisano, MD, FACR**, the American College of Radiology's senior director of research

development, and vice chair of radiology at Beth Israel Deaconess at Harvard Medical School, expressed optimism and some reservations about the Obama Administration's highly touted Cancer Moonshot after participating in the program's June 29 summit in Washington.

After introductory comments by Vice President Joe Biden, Pisano visited several breakout rooms at Howard University in Washington, DC, to help develop action plans based on the Moonshot's objectives with other distinguished cancer researchers, patient advocates, medical device and pharmaceutical industry representatives and information technology experts.

Overall, the initiative aims at doubling the rate of progress of cancer prevention, diagnosis and treatment in the next five years. President Obama announced the initiative and assigned its leadership to Biden at his final State of the Union address in January. The White House later announced \$195 million in new revenue for NIH in Fiscal Year 2016 as part of a nearly \$1 billion proposed for the Cancer Moonshot.

As a designated representative of radiology and medical imaging research, Pisano's credentials include her current work for the College and experience as vice chair of research at Beth Israel-Deaconess Medical Center, dean emerita of the Medical University of South Carolina and principal investigator of the Digital Mammographic Imaging Screening Trial (DMIST) and the upcoming Tomosynthesis Mammographic Imaging Screening Trial (TMIST). In an interview, Pisano said she is impressed by the Moonshot's audacious goals and potential for improved cancer detection, diagnosis and treatment, though more planning is needed to assure successful implementation.

"The progress toward better cancer diagnosis and treatment has always been too slow," she said. "Lots of laudable and exciting initiatives were announced at the summit, though the meeting was long on aspirations and short on how things are going to happen."

There was nearly a complete consensus at the summit in favor of a central repository for cancer research and patient data, for example. The repository would include clinical, imaging and biologic data from individual cases, clinical trials and research. They would be accessible to patients and accessible for various purposes, such as scientific research, quality assurance improvement and patient-centered aims, she said.

As a radiologist, Pisano mentioned the role and importance imaging-based cancer screening in the context of a continuum of care. She also discussed the importance of storing clinical and research images as well as biological data in the proposed repository. Technical problems with a central repository seemed soluble, and those present acknowledged obstacles exist because of the culture of academia and industry, but it became clear from Pisano's discussions with other participants that administrative, legal, and regulatory obstacles could stand in the way.

"Everyone in my breakout sessions wanted to achieve this objective, and the patient advocates argued passionately for it, but the discussion ultimately turned to what their lawyers would say," she said.

Congressional and some state legislative actions are probably needed to break through likely legal logjams, she said. Though some participants questioned whether the federal government is capable of reducing bureaucratic red tape and whether the repository should be housed under its control. Pisano believes its leadership is necessary to building necessary infrastructure, eliminating unnecessary regulation and passing enabling legislation.

The next step for Pisano is a letter to Biden to summarize her thoughts.

"I'm sure many people in radiology would like to see this happen," she said. "We are ready to roll up our sleeves to do it."

Advocacy in Action readers can contribute their research ideas for the Cancer Moonshot at the National Cancer Institute's Research Ideas webpage.

A specific subsection of the page and LINK to the site is dedicated to prevention and early detection. The submission deadline is July 1 at 11:59 p.m. EDT.

AAPM 2016 JUL 31-AUG 4



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58TH ANNUAL MEETING & EXHIBITION | WASHINGTON, DC

"I really enjoyed your talk... I think you are setting a very high standard for us all to follow."

- Xiang Li @ Cleveland Clinic, Dept. of Radiology Oncology

Program Information

Radiation Dose Monitoring and Protocol Management

All SAM Imaging Educational Course

All Sessions

Program Home

Radiation Dose Monitoring and Protocol Management	Thursday - 8/4/2016	add to vcal ical PLANNER: add heading all talks
SAM Imaging Educational Course	1:00 PM - 2:00 PM	Room: 209

Moderator: *Matthew Palmer, Beth Israel Deaconess Medical Center

1:00 PM - 2:00 PM Thursday	TH-E-209-0 : Radiation Dose Monitoring and Protocol Management B. Liu*, R. MacDougall*, D. Zhang*
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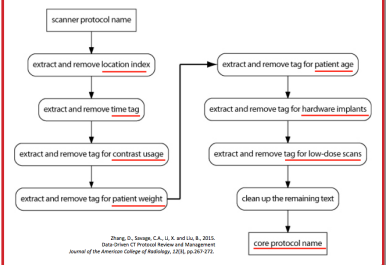
1:40 PM TH-E-209-3	Development of An In-House CT Dose Monitoring and Management System Based on Open-Source Software Resources -- Pearls and Pitfalls D. Zhang*
-----------------------	---



D Zhang

Dr. Zhang also moderated a 1.5 hr session on **CT-Calibration, QA/QC, Protocol Management** on Aug 2.

Protocol Decomposition



"I think your protocol name decomposition technique is critical for CT dose monitoring and protocol management."

- Frank Dong @ Cleveland Clinic Imaging Institute

Abstract: Radiation dose monitoring solutions have opened up new opportunities for medical physicists to be more involved in modern clinical radiology practices. In particular, with the help of comprehensive radiation dose data, data-driven protocol management and infor med case follow up are now feasible.

Significant challenges remain however and the problems faced by medical physicists are highly heterogeneous. Imaging systems from multiple vendors and a wide range of vintages co-exist in the same department and employ data communication protocols that are not fully standardized or implemented making harmonization complex.

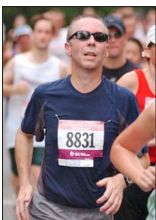
Many different solutions for radiation dose monitoring have been implemented by imaging facilities over the past few years. Such systems are based on commercial software, home-grown IT solutions, manual PACS data dumping, etc., and diverse pathways can be used to bring the data to impact clinical practice. The speakers will share their experiences with creating or tailoring radiation dose monitoring/management systems and procedures over the past few years, which vary significantly in design and scope.

Topics to cover: (1) fluoroscopic dose monitoring and high radiation event handling from a large academic hospital; (2) dose monitoring and protocol optimization in pediatric radiology; and (3) development of a home-grown IT solution and dose data analysis framework.

Learning Objectives:

1. Describe the scope and range of radiation dose monitoring and protocol management in a modern radiology practice
2. Review examples of data available from a variety of systems and how it managed and conveyed.
3. Reflect on the role of the physicist in radiation dose awareness.

Contact Email: mpalmer@bidmc.harvard.edu [BIDMC Manager of Medical Imaging Physics]



*Matt also participated in a 5K run at AAPM, but he was dropped off at the wrong starting location which required him to run an extra 5k to the correct starting line. Despite this, he ran about 4 seconds faster than at RSNA 2015 which had near ideal conditions and no pre-race run AND he still ranked 9th among hundreds of runners! But he seems to be proudest of having designed and delivered with Da Zhang the well-received talk above.

One Challenge: Clash of Terms
Synonyms, abbreviations, and typos exist in protocol names, e.g.,

- Abdomen/Pelvis, ABP, Abd/ Pel, Abd-Pel
- Cancer Follow Up, CA FU, CA-FU, CAFU, CA F/U
- Above 300 lbs, > 300 lbs, 300+ lbs, above 300
- Without contrast, I-, C-, NON-CON, W/O
- Thorax vs. Chest, etc.



KUDOS - Each month, we share the positive feedback we receive about staff members and ask you to join us in congratulating them; as always, we are especially proud to acknowledge an unprecedented constellation of staff for providing outstanding care and service!

DX



Daniel Bradley

Always looking ahead and resolving potential issues.



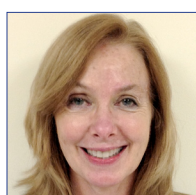
Beth Howard

Initiative to develop learning tool for other tech assistants at the East.



Dave Delpeche

Goes out of his way on a daily basis, not only for each department in Radiology but for the patients along with the ER staff, to be helpful.



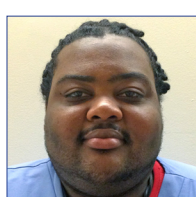
Suzanne Hunerwadel

Flexibility and staffing coverage.



Rodrique Dorcil

Helpful with difficult patient to transport to US on oversized bed. Also assisted RN on floor with the bed.



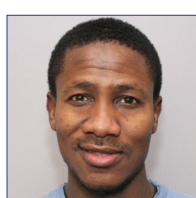
Anthony Jones

Dependable and friendly - ensure patients are cared for when transported.



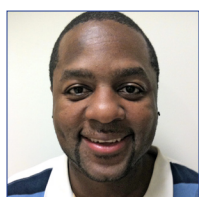
Michael Dresser

Dependability and excellence in portable coverage.



Joel Joseph

Dependable and friendly - ensure patients are cared for when transported.



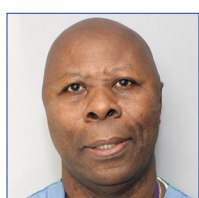
Carl Eloi

Goes out of his way on a daily basis, not only for each department in Radiology but for the patients along with the ER staff, to be helpful.



John Schembri

Working together with OR staff to ensure necessary coverage - even days in advance.



Jean Fleury

Goes out of his way on a daily basis, not only for each department in Radiology but for the patients along with the ER staff, to be helpful.



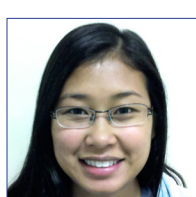
Ricardo Stewart

Goes out of his way on a daily basis to be helpful, not only to each section in Radiology but for the patients along with the ER staff.



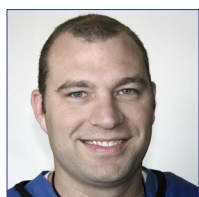
Lekisha Hamilton

Overall excellence with QC duties and supervision and coordination of staff.



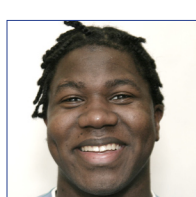
Linda Thiem

Dependability and excellence in communication.



Jeffery Heinrich

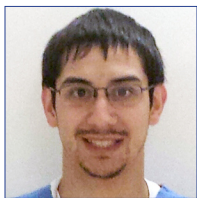
Overall excellence with supervision of evening staff and improving staff satisfaction.



Joaquin Thomas

Dependable and friendly - ensure patients are cared for when transported.

DX



Richard Thomas

Dependable and friendly - ensure patients are cared for when transported.



Alicia Zaske

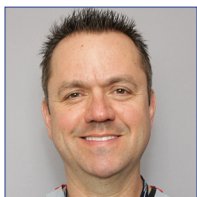
Overall excellence with supervision of weekend staff.

MRI



Marcus Bubar

Marcus was recently recognized by his peers for being a great team player, dependable, focused and his continued effort for easier workflow.



Randy Issaac

Randy was recognized by a patient for helping him get through his exam. The patient was extremely claustrophobic and had dreaded having his MRI. However, he said his exam experience went extremely

well due to the caring nature, professionalism and compassion shown to him by Randall Isaac. Randy, "took very good care of me".



Matt Boyle

During the past few months, many people are having to cover additional shifts to help keep up with the patient volume increase in MRI, and cover vacations. Matt has worked tirelessly to help keep the department

going. Matt, not only do you complete great quality work, but we have seen you help your coworkers as well. You come in early stay late and even adjust your lunch break to help pitch in and get things done where ever needed. Furthermore you do this all with a great attitude and willing disposition.



Jeff Fuller

Jeff has worked tirelessly to help keep the mobile going. He comes in early, stays late and even adjusts his lunch break if needed to help pitch in and get things

Support Services



Sheldene Hope-Spencer

Kudos from patient . Patient called in to express how compassionate and kind Sheldene was during their interaction. She was described as being compassionate and caring, a real asset to the Medical Center.



Mary Finley

During a recent visit to the department a patient had a wonderful experience in his interaction with Mary and observed her interactions with others. The patient described Mary has extremely nice during

the interaction and while he sat in the waiting area he observed how nice she was with other patients, he decided to make a generous donation in her honor to the Medical Center.



Deb Morris

Recently a patient wrote in to express her appreciation for how Deb made her feel during her visit to the Department. "I had an ultrasound last month at BI. I was about an hour early and my neck was very painful

from arthritis. I was using my purse to support my neck. The receptionist asked me if I would like a blanket. I happily replied yes! She got me a heated bath blanket which I rolled and put behind my neck. By the time staff were ready to do my test the pain in my neck was gone. The staff person was so kind and perceptive. She made a difficult time for me emotionally and physically much easier".



Danielle Warren

Patient called in to convey how happy she was with the service provided to her during the scheduling process. She felt Danielle went above and beyond during a stressful and difficult time in her life.

Department Happenings: Congratulations and Farewell!

Radiology bid MRI/Abd Admin Assoc.. **Lois Gilden** a surprise and belated Happy 75th Birthday on Fri., Aug. 19th. Thanks to Marc McCall for taking this picture and Andrea Baxter for procuring the wonderful cupcakes, drinks & meeting room. Unfortunately many of us were away on vacation, but we all enjoyed the belated surprise!

- Linda Lintz, BS, Administrative Assoc for Breast Imaging



On Fri. Aug 5th, we all said hail and farewell to Neuroradiology Admin Assoc. **Barbara Lawrence** in honor of her retirement after 18 years at BIDMC. She looks forward to moving to North Carolina (where so many retired Boston area medical folks go to enjoy their post-Boston lives) to be closer to her family.



Congratulations on being a new dad, MRI Clinical Manager Jim Zheng and welcome Minty!



"Hi everyone!
So sorry, I thought I had sent something while I was away, but must have just dreamt it in my tired stupor. Anyhoo...

Araminta Lily Zheng
Born on 7/25 at home.
8 pounds, 10 ounces, 21 inches.

Everyone is doing well now, and "Minty's" siblings are super excited!"

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Jonathan B. Kruskal, MD, PhD



David B. Larson, MD, MBA

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Jonathan B. Kruskal, MD, PhD
and David B. Larson, MD, MBA

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RADIOLOGY

QUALITY IS OUR IMAGE

Congenital Brain Abnormalities and Zika Virus: What the Radiologist Can Expect to See Prenatally and Postnatally¹

Patricia Soares de Oliveira-Szejnfeld, MD
Deborah Levine, MD
Adriana Suely de Oliveira Melo, MD, PhD
Melania Maria Ramos Amorim, MD, PhD
Alba Gean M. Batista, MD
Leila Chimelli, MD, PhD
Amilcar Tanuri, MD, PhD
Renato Santana Aguiar, PhD
Gustavo Malinger, MD, PhD
Renato Ximenes, MD
Richard Robertson, MD
Jacob Szejnfeld, MD, PhD
Fernanda Tovar-Moll, MD, PhD

¹From the Dept of Diagnostic Imaging, Federal Univ of São Paulo, São Paulo, Brazil (P.S.d.O.S., R.X., J.S.); Foundation Inst for Education and Research in Diagnostic Imaging, Dept of Diagnostic Imaging, Federal Univ of São Paulo, São Paulo, Brazil (P.S.d.O.S., J.S.); Dept of Radiology, Beth Israel Deaconess Medical Ctr, Harvard Medical School, Boston, Mass (D.L.); Instituto de Pesquisa Professor Amorim Neto, Campina Grande, PB, Brazil (A.S.d.O.M., M.M.R.A.); Instituto de Saúde Elpidio de Almeida, Campina Grande, PB, Brazil (A.S.d.O.M., M.M.R.A.); Faculdade de Ciências Médicas de Campina Grande, Campina Grande, PB, Brazil (A.S.d.O.M.); Hosp Municipal Pedro I, Serviço Municipal de Atendimento Transdisciplinar a Gestantes e Bebês com Infecção Congênita por Zika Virus, Campina Grande, PB, Brazil (A.S.d.O.M., A.G.M.B.); Universidade Federal de Campina Grande, PB, Brazil (M.M.R.A.); Laboratory of Neuropathology, State Inst of Brain, Rio de Janeiro, Brazil (L.C.); Departamento de Genética, Instituto de Biologia, Universidade Federal do Rio de Janeiro, Rio de Janeiro, Brazil (A.T., R.S.A.); Div of Ultrasound in Obstetrics & Gynecology, Lis Maternity Hosp, Tel Aviv Sourasky Medical Ctr, Sackler Faculty of Medicine, Tel Aviv Univ, Tel Aviv, Israel (G.M.); Fetal Medicine Foundation Latinamerica-FMFLA, Centrus-Fetal Medicine, Campinas, Brazil (R.X.); Boston Children's Hosp, Boston, Mass (R.R.); Inst of Biomedical Sciences and National Ctr for Structural Biology and Bioimaging, Federal Univ of Rio de Janeiro, Rio de Janeiro, Brazil (F.T.M.); and D'Or Inst for Research and Education, Rua Diniz Cordeiro 30, Botafogo, Rio de Janeiro, RJ, Brazil 22881-100 (F.T.M.). Received July 7, 2016; revision requested July 14; revision received July 22; accepted July 27; final version accepted August 3. **Address correspondence to** F.T.M. (e-mail: Fernanda.tovarmoll@idor.org).

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Purpose:

To document the imaging findings associated with congenital Zika virus infection as found in the Instituto de Pesquisa in Campina Grande State Paraíba (IPESQ) in northeastern Brazil, where the congenital infection has been particularly severe.

Materials and Methods:

From June 2015 to May 2016, 438 patients were referred to the IPESQ for rash occurring during pregnancy or for suspected fetal central nervous system abnormality. Patients who underwent imaging at IPESQ were included, as well as those with documented Zika virus infection in fluid or tissue ($n = 17$, confirmed infection cohort) or those with brain findings suspicious for Zika virus infection, with intracranial calcifications ($n = 28$, presumed infection cohort). Imaging examinations included 12 fetal magnetic resonance (MR) examinations, 42 postnatal brain computed tomographic examinations, and 11 postnatal brain MR examinations. Images were reviewed by four radiologists, with final opinion achieved by means of consensus.

Results:

Brain abnormalities seen in confirmed ($n = 17$) and presumed ($n = 28$) congenital Zika virus infections were similar, with ventriculomegaly in 16 of 17 (94%) and 27 of 28 (96%) infections, respectively; abnormalities of the corpus callosum in 16 of 17 (94%) and 22 of 28 (78%) infections, respectively; and cortical migrational abnormalities in 16 of 17 (94%) and 28 of 28 (100%) infections, respectively. Although most fetuses underwent at least one examination that showed head circumference below the 5th percentile, head circumference could be normal in the presence of severe ventriculomegaly (seen in three fetuses). Intracranial calcifications were most commonly seen at the gray matter–white matter junction, in 15 of 17 (88%) and 28 of 28 (100%) confirmed and presumed infections, respectively. The basal ganglia and/or thalamus were also commonly involved with calcifications in 11 of 17 (65%) and 18 of 28 (64%) infections, respectively. The skull frequently had a collapsed appearance with overlapping sutures and redundant skin folds and, occasionally, intracranial herniation of orbital fat and clot in the confluence of sinuses.

Conclusion:

The spectrum of findings associated with congenital Zika virus infection in the IPESQ in northeastern Brazil is illustrated to aid the radiologist in identifying Zika virus infection at imaging.

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Online supplemental material is available for this article.



We are grateful for the insightful comments by Cory M. Pfeifer [1] regarding our article that appeared in the April 2016 issue of the AJR [2]. We feel very strongly that the two most important steps toward addressing the gender discrepancy in radiology are to quantify the problem and to increase dialogue to develop meaningful solutions, both of which have found a home at the AJR.

Pfeifer addresses an excellent point regarding the clustering of men and women within certain radiology

divisions. If a primary pipeline to academic success relies on promotion within one's division, then the overrepresentation of women in specific divisions will congest the inlet and create extra competition. This may force excellent woman academicians to seek out leadership opportunities in other areas. One such area is program director, which in our study was the only leadership position that had greater than baseline representation by women. Leadership positions on a national level are another option, but the opportunities for these roles are few, and without a track record of local leadership positions are likely difficult to achieve. For women in woman-dense divisions, creativity is needed in identifying leadership opportunities.

Pfeifer also aptly points out that there are differences between making radiology an attractive field for women and promoting women as academic leaders and that efforts to do either may be at cross purposes with one another. Whereas the long-term goal is to achieve gender parity across all levels of radiology, a two-pronged approach will have the greatest likelihood of long-term success. First, as outlined in our article [1], we need to more directly delineate the benefits of a career in radiology for eligible woman medical students. To develop a sufficiently deep bench of women as potential radiology leaders, we must recruit a greater share of women to be radiologists. Second, as Pfeifer describes, woman radiologists during the formative years of residency, fellowship and the early faculty years should be exposed to the trailblazing efforts of highly successful woman radiologists. Direct mentorship and role modeling can give individuals the nudge needed to push themselves and their careers to the next level. These two efforts should go a long way toward addressing the gender discrepancy in radiology.

We hope that our study and these letters will raise awareness about the influence of gender in radiology. Through open dialogue we can start to break down the gender disparity that has been so pervasive in radiology.

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Read More: <http://www.ajronline.org/doi/full/10.2214/AJR.16.16836>

WEB—This is a web exclusive article.

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Men (and Women) in Academic Radiology: How Can We Reduce the Gender Discrepancy?

Grimm LJ, Ngo J, **Pisano ED**, Yoon S

OBJECTIVE: There is a chronic gender imbalance in academic radiology departments, which could limit our field's ability to foster creative, productive, and innovative environments. We recently reviewed 51 major academic radiology faculty rosters and discovered that 34% of academic radiologists are women, but only 25% of vice chairs and section chiefs and 9% of department chairs are women.

CONCLUSION: Active intervention is needed to correct this imbalance, which should start with awareness of the issue, exposing medical students to radiology early in their training, and implementing better mentorship programs for female radiologists.

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Larson DB, **Kruskal JB**, Krecke KN, Donnelly LF. Key Concepts of Patient Safety in Radiology. *Radiographics*. 2015 Oct;**35(6):1677-93**. PMID: 26334571.

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