What works (most of the time)  
what doesn’t work (most of the time)  
what always or never works

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DISCLOSURES
Research Support:

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<th>NIH</th>
<th>Other</th>
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<td>EB 017095</td>
<td>Mayo Discovery Translation Award</td>
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Off Label Usage  
None

If your goal is to sell newspapers  
(or scare patients)
Public response: Fear and anxiety

- Patients and family members are worried, seeking expert help before and/or after exposures
- Parents in particular calling, in tears, about “what they have allowed to be done to their child”

Being dismissive never works

- “They don’t know what they’re talking about”
- “Just trust me on this …”
- “Don’t be so silly”
- “You can’t possibly believe that garbage?”
- “What, you’re afraid of turning into Spiderman?”
All other strategies are situational

- No perfect recipe for what “always” works
- Treat individuals with respect and compassion
- They are scared, likely have other health stressors
- Identify primary concern
- Based on concern, address 2 or 3 key points
  - Stick to these primary points, phrased in different ways
  - Don’t get into an exhaustive debate of the literature
  - Don’t drill down into too many details
  - Could either be confusing or distracting
- Stick to key points

Key message: Big benefit, small (if any) risk

- Radiation does cause cancer at very high doses, but at low doses, the effects are too small to be measured, or do not exist
  - References: radiation protection organizations
- You/your family member received low doses
  - References: internal and published typical doses, and patient-specific data from medical record
- The risk (if it exists at these low doses) is negligible compared to the benefit of a necessary medical exam
  - Give examples tailored to situation, with references such as ACR appropriateness criteria

Secondary message: You are in good hands

- Our facility
  - uses age and size appropriate doses
  - tailors the exam for the diagnostic task
  - has advanced imaging devices with radiation dose management features
  - is accredited by ACR and JCAHO
  - participates in national dose registry
  - monitors our dose data closely
  - has rigorous quality testing of equipment
  - is staffed by board certified medical physicists
  - all CT technologists have additional certification in CT
Case 1: Facebook inquiry

- ... I was hoping to ease some anxiety about the conflicting information re: cancer and radiation esp in children ... 6 days old son fell off bed ... of course not being educated or told of the risks of radiation they ordered a CT scan and spinal x-ray and we obliged.
- ... The tech didn't want to do it saying it was A LOT of radiation and now those words stick with me with along with the guilt that I have given my son a cancer and death sentence.
- ... I keep reading Dr. Internet about the risk of childhood cancers like leukemia and lymphoma (which my dad had) and I am literally sick to my stomach every day with worry. He has an enlarged lymph node on his neck, this constant cough and although drs not concerned, I have convinced myself it is linked to cancer b/c of all these tests.

Case 1: Facebook inquiry

- I don't know how to make peace with [our] decision to put him through all these tests and can't convince myself that the risks outweighed the benefit esp reading that most ERs do these tests to cover their butts.
- ... I look at him all happy and playing and I fear I have caused him future harm.
- ... I wish I could turn back the hands of time and I would never have put him through all this. He was so young and is only 3 now.
- ... While I am definitely worried about the CT scan (total mAs 1301, CTDIvol 30.90, DLP (mGycm 417.50-not sure what these numbers mean) I am also worried about the possible cumulative effect of all the radiation from all the tests he has had [additional chest x-rays for difficulty breathing and a barium swallow for reflux]
Case 2: Via telephone

- Senior scientist at major aeronautics engineering firm
- Regrets his choice to allow a head and neck CT scan to be performed on him
- Looked up numbers (6 rem) and is appalled
  - “Dose” of 60 mGy ~ 6R ~ 6 rem
  - “Effective dose ~ 1-2 mSv ~ 100-200 mrem
- Chance meeting in June. He thanked me for my help, but proceeded to talk 30 minutes about his concerns that docs perform CT scans when they don’t need to
- “He could have just told me to keep taking ibuprofen”

Primary concern: Post-exam regret/fear

- Remind patient/family member that a negative exam is not an “unnecessary” exam
- Inform re: consequences of not having the exam could range from inconvenient (delayed treatment and healing) to catastrophic (death from brain bleed, paralysis from spinal cord injury due to broken vertebrae)
- Express happiness that the injury was not serious and glad that the CT could “clear them” to go home safely
- I share personal story of my daughter, where the “optional” CT prevented unnecessary emergency surgery

Education level doesn’t matter

- People with more education, esp. physicians, can be the most difficult to “re-educate”
- “Just trust me” isn’t effective
- Educated patients/family members have the skills to seek out literature on the topic (Dr. Internet?)
- People tend to seek out data to support their opinion
- Don’t argue. Don’t debate the literature.
  Do clarify misinformation (e.g. type of “dose”, units)
- Be familiar with current literature and prepared to cite a few key references to support what you are explaining
Good article for physicians

OPINION
Don’t let radiation scare trump patient care: 10 ways you can harm your patients by fear of radiation-induced cancer from diagnostic imaging
Alan S Brody,1 R Paul Guilleman2

Case 3: Via e-mail

• Please forgive if contacting you in this way is way out of line, but I am growing desperate for information from a well-informed source.
• I had a pelvic CT scan with a gastrogravin enema ... I felt so bad when I got home, about an hour and a half later, that I laid down and fell asleep for two hours (something I very rarely do). I awoke with a splitting headache, primarily in the eyes, and then, about seven hours after the procedure, I began to throw up violently.

Case 3: Via e-mail

• I guess this could have been a reaction to the gastrogravin, but I called the facility that did the procedure to find out if that could be the case and to determine what my radiation dose had been. They said the gastrogravin could not have such an effect
• They gave a Dose Length Product figure of 102.57 mGY. I was later given a 1.9 millesievert figure … but the tech could not tell me how the two figures relate or anything else about the procedure, except that one can’t even get radiation sickness from a medical procedure, which brought little in the way of consolation.
Primary concern: Radiation poisoning

- Could you possibly tell me whether the 102.57 mGY DLP is high (I'm a 105lb. female)?
- I really need to know whether to seek treatment of any kind.

Provide reassurance and logical explanation

- Did not start with “you can’t possibly have radiation poisoning”
- Emails, facebook, other written communication allows time to do your homework
  - Checked drug information and spoke with a GI radiologist
- Offering a clear, logical explanation of “what caused this” erased the radiation poisoning fear
- Reassured her that the dose numbers were very reasonable/good and (then) assured her that her dose (all imaging doses) was 100-1000 times below the level where radiation poisoning occurs
Case 4:

- 84 y.o. male
- Abdominal aortic aneurysm
- Pre-surgical CT Angiogram ordered
- NEJM article of dangers of CT is published
- Leaves message for physician “requesting that his CT with the cancer-causing stuff” be changed to an ultrasound
- Physician requests that I contact patient so that he will have the CT, as it is essential for surgical planning

Primary concern: Refusing needed exam

- Explaining the CT exam and the information that the doctor needs from it is a strong start
  - Use 3D images if possible
  - Explain stent graphs and how they are custom fit
  - CT let’s doctor “take his measurements”
  - US can’t do this with same accuracy (show US image)
  - US can’t see tiny arteries that are critical to avoid
Benefit, benefit, benefit

Secondary messages about safety of our practice were also helpful.