Communicating Benefit to Risk Ratio From Radiology Exams to the Patient and Provider

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7:30 am
TU-AB-304-0
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RITENOUR’S FIVE RULES FOR:

COMMUNICATING

BENEFIT TO RISK RATIO

TO PATIENTS AND PROVIDERS
Rule # 1

EMPLOY E.I. SKILLS

Emotional Intelligence

Daniel Goleman’s five elements:

- Self-awareness.
- Self-regulation.
- Motivation.
- Empathy.
- Social skills.
Empathy

✓ Understand* the questioner’s
✓ Background knowledge
✓ Fears
✓ Biases
✓ Desired outcome

* You don’t have to “feel” or “share” but you should understand. (sympathy) (empathy)
Rule # 1

EMPLOY E.I. SKILLS
A Questioner is not a “Vacant Lot”
A Questioner arrives with a “Knowledge Structure”

You may find their “Knowledge Structure” to be bizarre and convoluted
A Questioner arrives with a “Knowledge Structure”

You may find their “Knowledge Structure” to be sensible and in agreement with your own

* Well, Duuuh ... it’s sensible if it’s in agreement with your’s
You have to add to the existing structure in a way that is compatible.
Rule # 1

**EMPLOY E.I. SKILLS**

There are Two Analogies here

Patient or Provider has a:

1. Puzzle they want to solve
2. Knowledge Structure already in place

**Empathy** will help in both situations
Rule # 1

**EMPLOY E.I. SKILLS**

Terminology

**Communicating with the Patient:**

**Not:** Subject, Case, Individual(s)

**Use:** Person, Patient, Other People

**Communicating with the Provider:**

**Maybe Not:** Subjects, Cases, Individuals

**Should Use:** Your patient, Patients, Others, Refer to them by name
Rule # 2

DON'T MISREPRESENT YOURSELF

Don’t give medical advice specific to that Patient.

Malpractice insurance?

Suggested opener:

“I’m calling from ______ Radiology. You had some questions about radiation exposure?”

Don’t offer too much detail on medical physics.
Rule #3

**HAVE CONCISE INFORMATION AT HAND**

“I know so much that I don’t know where to begin”
Rule #3

**HAVE CONCISE INFORMATION AT HAND**

- Keep up to date
  - Popular Press, CNN, Web
  - SAMS, Reading, Listening
- Help them with Quantities and Units?
- Separate Dx into:
  - Low: Dental, chest, extremities
  - Medium: Fluoro, CT
  - High: Interventional
- Compare to other risks in life
- Compare to other risks in medicine
- Compare to background dose
  - Be clear: background “noise”
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Dental: $E \ll 0.1 \text{ mSv}$
Mammography: E <0.1 mSv
Abd / Pel X-ray: $E \approx 0.7 \text{ mSv}$
CT: $E \sim 7\text{ -}15\text{ mSv}$
Interventional Radiology: $E \sim 9 \text{ mSv}$
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## Risks That Increase Chances of Death by 1 in a Million

<table>
<thead>
<tr>
<th>Risk</th>
<th>Cause of Death</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 chest film</td>
<td>Cancer</td>
</tr>
<tr>
<td>40 tablespoons of peanutbutter</td>
<td>Liver Cancer (Aflatoxin B)</td>
</tr>
<tr>
<td>100 charcoal broiled steaks</td>
<td>Cancer (Benzopyrene)</td>
</tr>
</tbody>
</table>

*Source: Wilson, Pochin*
Risks That Increase Chances of Death by 1 in a million

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<thead>
<tr>
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<tbody>
<tr>
<td>Smoking 1.4 cigarettes</td>
<td>Ca, heart disease</td>
</tr>
<tr>
<td>Spending 1 hr in a coal mine</td>
<td>Black lung disease</td>
</tr>
<tr>
<td>Travelling 60 miles by car</td>
<td>Accident</td>
</tr>
<tr>
<td>Travelling 400 miles by jet</td>
<td>Accident</td>
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</tbody>
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Think It Through: Managing the Benefits and Risks of Medicines

For many people, taking medication is a regular part of their daily routine, and those medicines can help prevent or treat disease and improve health. Although medicines can make you feel better and help you get well, it's important to know that all medicines, both prescription and over-the-counter, have risks as well as benefits.

The benefits of medicines are the helpful effects you get when you use them, such as lowering blood pressure, curing infections, or relieving pain. The risks of medicines are the chances that something unwanted, or unexpected, could happen to you when you use them. Risks could be less serious things, such as an upset stomach, or more serious things, such as liver damage. Here are some tips from the Food and Drug Administration and one of its public health partners to help you weigh the risks and benefits when you make decisions about the medicines you use.

Managing Risk

When a medicine’s benefits outweigh its known risks, the FDA considers it safe enough to

Medical Risk Information

FDA


https://www.ncbi.nlm.nih.gov/pmc/articles/PMC200818/
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FLYING IN AIRPLANE ABOVE 33,000 FT.

(0.005 - 0.010 mSv/hr)

(THREE HIGHER YOU ARE AND THE FURTHER NORTH YOU GO, THE HIGHER THE EXPOSURE LEVEL.)
Rule #4

DON'T JUST MINIMIZE RISK

✓ Compare risk and benefit
✓ Screening vs. Diagnosis vs. Intervention
Overall

Risk of Fatal Ca = \frac{160,000}{\text{million}} = 16\% \pm ?\%

Estimated Radiogenic Risk of Chest x-ray = \frac{8}{\text{million}} = 0.0008\%
Rule #5

THE GOAL IS NOT TO GET THEM TO AGREE WITH YOU

RIGHT?

The goal is to transfer the RIGHT AMOUNT of the RIGHT INFORMATION at just the RIGHT TIME
Rule #1 - EMPLOY E.I. SKILLS

Rule #2 - DON'T MISREPRESENT YOURSELF

Rule #3 - HAVE CONCISE INFORMATION AT HAND

Rule #4 - DON'T JUST MINIMIZE RISK

Rule #5 - THE GOAL IS NOT TO GET THEM TO AGREE WITH YOU
The (Happy) End

RIGHT !!!
Chest CT ~ 350 chest x-rays
Chest CT ~ 7 mSv

1 chest CT = how many chest x-ray examinations?
Typical annual doses (mSv) of exposed workers in **diagnostic radiology**

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Dose Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>CT technologists</td>
<td>0.05 - 0.3</td>
</tr>
<tr>
<td>General radiographers</td>
<td>0.05 - 0.5</td>
</tr>
<tr>
<td>Fluoroscopy technologists</td>
<td>2.0 – 4.0</td>
</tr>
<tr>
<td>Radiologists</td>
<td>1.5 – 2.5</td>
</tr>
<tr>
<td>Nurses</td>
<td>1.80 - 2.24</td>
</tr>
<tr>
<td>RT interns</td>
<td>0.40 - 0.7</td>
</tr>
</tbody>
</table>

Legal limit for radiation workers in the US - 50 mSv / year