Part II How to Be an Effective Risk Communicator

At the 1995 annual meeting of the Society of Nuclear Medicine, the special committee on radiobiological effects of ionizing radiation (REIR) held a session focused on the importance of tailoring risk communication to best meet the needs of adversarial groups, government officials, patients and broad-based coalitions. Kevin J. Donohoe, MD, A. Bertrand Brill, MD, PhD, David R. Brill, MD, James J. Conway, MD, Edward B. Silberstein, MD, and Chris Whipple, PhD, presented part I of the highlights of the session in the June issue of *Newsline*, which explored the issues of communicating risk to patients and government officials. Part II explores communication with adversarial groups and broad-based coalitions.

Communicating Risk to Adversarial Groups

It is likely that at least one faction involved in a debate or policy decision will be affected negatively. As a result, adversarial groups often form. The protesters' agenda may spread quickly, causing the target of their dissent—which could be an otherwise well-reasoned position—to be rejected by the public. Members of an adversarial group may become so steadfast in their beliefs that they can become closed to any discussion.

Communicating with an adversarial public with reinforced antagonistic opinions can be one of the greatest challenges for physicians, health physicists or other radiation workers [1]. When the two sides of the debate meet, opponents on both sides react in a variety of ways, from lending an understanding ear, to the more familiar raucous finger pointing and name calling. Each side believes it possesses the truth and thinks the problem lies with the opposition. Lack of skillful communication by both sides may be the greatest barrier to conflict resolution.

Scientists and physicians who use radiation often consider those who are vehemently opposed to all radiation exposure to be irrational or fanatical.

It is easy for us to dismiss emotional, seemingly unyielding arguments that are not based on peer-reviewed literature as unimportant. The concerns or opinions of adversaries should not be discounted, however, until they are fully considered [2,3]. Both sides must listen with an open mind to achieve any constructive dialogue or problem resolution. Although consumer or environmental activist groups may not speak for the majority of the general public, they can be very influential as a vocal minority. Thus, their opinions are indeed important[4].

Fearing bias, adversarial groups may not accept the opinion of experts or government officials as truth[5]. Political and financial agendas interjected into projects that should not have been politicized have resulted in inappropriate priorities on the part of some experts and government officials. Previous acts of elitism or disregard for the law have caused damage that extends beyond the incident itself[2]. As a result, the public may fear that decisions are being made by an uncaring government that does not consider public safety its highest priority.

Even if a well-reasoned decision is made, public suspicions alone may prevent acceptance of the decision. Experts no longer enjoy the unchallenged trust they received in the past.

Engaging in Public Debates

Expectations of what an expert is to accomplish in front of an adversarial group should be realistic. Opinions on both sides of the debate are usually formed prior to the encounter. Many attendees are present, not to listen to the opposition, but to make their own opinions heard and to lend support to their colleagues. It is unrealistic to expect to convert a significant number, if any, of opponents during the course of a debate. It is possible, however, to convey some information about the magnitude of risk involved. Even if the information does not cause a number of people to convert to the nuclear physician's opinions in a debate, it might provide reassurance about specific concerns and open the door for further discussion.

Communication strategy should include scientific data presented by independent experts. Many adversaries are up to date with the pertinent scientific literature, but some opponents may be misinformed and may base their opposition on the misinformation[6]. Factual information from independent experts will be more readily accepted and more likely to correct inaccurate perceptions, particularly if the expert has already established credibility with the audience. Such an expert may be found through local newspaper resources, the Sierra Club, a nearby university or perhaps through a community organization that is respected by the meeting audience.

Scientific data may include cost-benefit, cost-effectiveness and comparative risk analyses. The magnitude of risk can be presented through examples comparing various unfamiliar risks with the familiar, such as riding a bicycle, or through comparing them with acceptable risks, such as fossil-fuel power plant emissions. This approach can be informative, particularly when the risk is thought to be much higher than it actually is.

However, special care must be taken to avoid interjecting value judgement about what level of risk is acceptable and not acceptable.

To help assure that any comparisons are acceptable, risk comparisons should be made in the setting of a dialogue. It is more acceptable to compare risks with similar characteristics, such as comparing emissions from a nuclear plant with those from a fossil-fuel burning plant, or the radiation dose from a nuclear plant versus that from radon in the home[7,8]. It is usually not acceptable to compare involuntary risks (exposure to a low-level waste dump) to voluntary risks (riding a bicycle). Acceptability should also not be approached through risk tradeoff. Justifying a smaller risk by trading it for a larger risk will result in most opponents protesting that they prefer no risk.

Predicting the acceptability of a specific risk is difficult. Physicians or scientists might think that risk acceptability is ranked

corresponding to the level of hazard. However, ranking risk by acceptability will not produce the same order as risks ranked by hazard [7-9]. For example, the public may prefer a fossil-fuel power plant over a nuclear power plant, even though the risks and health consequences of a fossil-fuel plant are greater.

There may be several possible reasons for the public's preference of a more hazardous risk over a less hazardous one: The public may not believe the risk estimates, or they may be concerned that unforeseen consequences are not included in the risk estimates. In addition, the data may be more certain for one risk than another. Emotions may also be a factor due to unfounded fears (fear that the power plant might explode like a nuclear bomb) or emotional issues. Environmental or political considerations, such as the location of a toxic waste dump, may anger the public to the extent that they consider riskier alternatives to be more acceptable[7]. Risk analysis data are therefore not acceptable or important to all groups.

Data can be effective with technical and regulatory audiences, but they may be less important or even unacceptable to some members of the general public[4]. Cost-effectiveness data are unacceptable when there are identifiable victims, particularly if a risk has potential catastrophic consequences. For example, cancer is a catastrophic consequence that may be caused by radiation exposure.

For those who are skeptical about the handling and regulation of radioactivity, a discussion of the requirements for licensing and the regulations for maintaining licensure may be reassuring. This discussion will not put opponents who lack faith in governmental supervision at ease; however, those who are under the false assumption that regulations are minimal or nonexistent may become aware of the substantial effort made to minimize risk to the public.

Several features of risks are known to make a particular risk less acceptable. A risk that is perceived as imposed upon the public involuntarily is often the source of the greatest outrage. This imposition decreases the likelihood that the risk will be considered a viable option, no matter how small the level of risk [10]. If the risk is new and involves some scientific uncertainty, it is more anxiety provoking because citizens may feel as though they are functioning as test subjects, or "guinea pigs," providing data on the risk.

The use of risk data to describe the level of risk, if used improperly, can also decrease the acceptibility of a risk. If risk data are used, they should include numbers from multiple perspectives, including from the average individual, a highly exposed individual and a large population. Presenting only data on exposure of an average individual, while hiding less acceptable data fromindividual exposures will eventually be discovered, resulting in a loss of credibility.

Any discussion should include risks of alternatives, the risk of doing nothing and the benefits of accepting the risk. For example, a discussion of the risks associated with medical and industrial uses of radiation would be incomplete without mentioning the many ways these uses have improved our standard of living and our health. Local benefits should also be considered, such as employment opportunities and financial gains to the community.

Once risk estimates have been presented, the quality of the data used to obtain those estimates should be discussed, including the limitations and purposes for the data collection. When all data are presented as infallible, credibility will again be lost among those that understand the errors inherent in data collection. During a presentation to an adversarial group, protection of credibility is of great importance. This includes quoting credible sources and allowing the appropriate authorities to discuss their fields of expertise. Engineers should not discuss medical issues, and physicians should not discuss plant engineering.

When discussing the advantages of using radioactive substances, it is important to emphasize how easily radioactivity can be identified and measured. People are wary of radiation because it is perceived as invisible and undetectable. However, simple instrumentation can detect activity levels down to background levels which allows efficient control of radioactive material. In contrast, many chemical contaminants can be detected only with elaborate equipment that cannot always detect small quantities of a contaminant.

Communicating with a Broad-Based Coalition

Communicating risk to a broad-based coalition does not allow for the focused approach that can be used when communicating with groups that have specific concerns. The risk communicator often must address a variety of concerns at the same time. For example, when an issue such as radioactive waste is considered in front of a management board, the board members may vary from biased to impartial and be composed of every opinion from vehemently against to blindly protagonistic.

When speaking to a broad-based coalition, the speaker should be aware that strong opposition may be encountered. If the speaker becomes angry, proponents of all positions may lose respect or feel alienated from the speaker. The communicator should approach the task not as though he or she has infallible information, but rather the data presented will contribute to the overall discussion.

When any expert is called upon to discuss risk within a coalition, he or she should identify, as clearly as possible, what the risk is, who is carrying the risk and who stands to benefit from the risk. Few will quietly accept any level of additional risk in their life if they see no benefit to them or to their constituents. If at the same time those generating the risk are seen to reap a substantial benefit while accepting no risk, the situation is most likely to be intolerable.

An advantage of speaking to a broad-based coalition, as opposed to an adversarial group, is that it is more likely that several members will be open-minded. These people will be courted by coalition members that have already established a position. Group members with as yet unformed opinions more likely will respect anyone that helps them understand the technical material, behaves in a reasonable fashion and maintains their integrity.

As with adversarial groups, some opponents in a coalition will never believe anyone with an opposing viewpoint. These people are better considered rivals than enemies. They should be thought of as people rather than antagonists.

This attitude can only lead to improved dialogue and better understanding of the opposing view.

General Considerations

The point of this two-part commentary was to discuss facets of risk communication specific to lawmakers, patients, adversarial groups and broad-based coalitions. It was not intended to comprehensively consider risk communication in general. Some general considerations, however, deserve to be reiterated.

Concern and compassion for an opposing view is an effective strategy to help convince opponents that they are being heard. Fear of cancer and of the radiation that may cause it is a real fear. If that fear is acknowledged in a compassionate manner, a defensive posture on either side may be prevented, allowing both sides to be open to ideas not previously considered. Despite open dialogue, a speaker should no more expect to convert an entire audience to one side of an issue than he/she expects to be converted by the opposition. If a speaker listens to the concerns of the opposition and addresses those concerns honestly and accurately, an opportunity to educate the opposition and to open doors to further dialog will be created.

Communicating risk that is associated with exposure to ionizing radiation is a difficult task. It is one often faced by physicians and physicists who work with radioactive materials. Distrust, inflexibility and anger on both sides of the discussion can be formidable barriers to open dialogue. Communication must be maintained, however, if any progress toward the intelligent use of radioactive materials is to be achieved.

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Kevin J. Donohoe, MD, is an instructor in radiology at Harvard Medical School in Boston, MA.

A. Bertrand Brill, MD, PhD, is a professor of nuclear medicine at the University of Massachusetts Medical Center in Amherst.

David R. Brill, MD, is the assistant director of special imaging in radiology and chief of nuclear medicine at the Geisinger Medical Center in Danville, PA.

James J. Conway, MD, is a professor of radiology at Northwestern University Medical School in Chicago, IL.

Edward B. Silberstein, MD, is a professor of Radiology and professor of medicine at the University of Cincinnati Medical Center in Cincinnati, OH.

Chris Whipple, PhD, is the vice president of ICF Kaiser in Oakland, CA.

Brain SPECT *(Continued from page 14N)*

"We need to interact with other specialists and demonstrate that we appreciate the clinical problems they're up against and then participate in joint studies with them to gauge the effectiveness of our tools in these situations."

Grading System for SPECT Indications

Tikofsky said nuclear physicians can use the findings of the Neurology expert panel to educate their colleagues on the benefits of brain SPECT compared to other imaging modalities such as CT. Using a four-tiered rating system, the panel graded and evaluated the effectiveness of SPECT in diagnosing and guiding treatment for brain disorders ranging from stroke, to epilepsy, to HIV encephalopathy. (See chart on page 14N) For each SPECT application in the current peer-reviewed literature study, the panel reviewed SPECT's effectiveness and graded its utility as either doubtful, investigational, promising, or established. Most of the brain SPECT applications received an "investigational" rating. Several other applications, including the differentiation and grading of gliomas, the determination of seizure subtype, the prognosis of recovery from stroke, the evaluation of transient ischemic attacks, and the diagnosis of Huntington's chorea, were judged to be investigationally "promising" by the panel. Assessment of brain death, determination of stroke subtypes, and the diagnosis of vasospasm following subarachnoid hemorrhage were found to be among the most promising applications of SPECT. The technology's ability to detect acute ischemia, presurgical ictal detection of seizure focus and confirm a clinical diagnosis of Alzheimer's disease rank among its most dependable applications, concluded the panel. With regards to Alzheimer's disease, the panel wrote, "SPECT's established accuracy in detecting decreased perfusion in the association cortex of the parietal lobe has led to sensitivity rates as high as 95% for the disease." As a member of the expert panel, Tikofsky maintained that the review is a "significant step" forward in demonstrating the effectiveness of the technology to other medical practitioners.

He did, however, feel that the panel was too strict in its evaluation of head trauma; he would have liked to see it rated "promising" rather than "investigational". Waxman saw a few problems with the study as well. "It should have listed some of the areas where SPECT is abused and misused," he said. "This would have brought attention to researchers who attribute unsubstantiated abnormalities to vague clinical problems such as general behavioral changes." Tikofsky and Waxman both hope that the study will bring increased attention to the nuclear physician's ability to aid the referring neurologist. They also agree that there is a significant need for outcome studies to differentiate the neurological conditions that are best evaluated using SPECT versus CT—both in terms of clinical effectiveness and in terms of cost.

—Brendan M. Peter