

Cases for Teaching Responsible Communication of Science

Vaccine stories: Role play version

A local TV station has decided to do an extended segment on vaccination against Human Papilloma Virus (HPV). But the station is in a bind: the news director remembers that just a couple of years ago, national television journalist Katie Couric got into big trouble with her HPV reporting. Journalism is about telling a good story, and so Couric had included both stories and information about vaccine effectiveness and alleged vaccine side-effects. She had to partially apologize after criticism that she had spent too much time on anti-vaccination stories—but she never apologized for including them at all.

So the news director faces three questions:

1. What roles can story-telling usefully play in science news reporting?
2. How should the segment handle rare vaccine side effects? In specific, should the segment include *any* stories of alleged vaccine harms?
3. Is there a way to use the power of story-telling to reinforce the importance of vaccination?

She's invited three friends to coffee to talk these questions through.

Your task in this case study is to take on an assigned position during the conversation. You will be put in a group which will role-play one of four character positions. All characters will be participating in a conversation to decide the above questions. During the conversation, you will be responsible for making the best possible case for your character's positions. You should include as many different arguments as you can and aim to make your case persuasive to other participants.

The specific background materials for each of the four character positions includes viewpoints that you will need to support. But there may be other issues that need to be addressed before decisions can appropriately be made. Do not let the issues identified limit your imagination. Arguments associated with each character are suggested and may be helpful as you formulate your arguments. But again, you are in no way limited to these arguments. Use your creativity to formulate arguments of your own and to adopt fully the perspective of the character you have been assigned to role-play.

A note about realism: The background of this case is based on actual events. The characters in the case, however, do not represent real individuals. In this case packet, statements from various sources have been recombined to produce four divergent positions. Your in-class debate is therefore likely to be more vigorous than might occur in real life.

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Class Procedure: What to Expect

1. Set-up (~10-15 minutes, to be done in class). Your class will be divided into four groups. Each group will be assigned to represent one of the four character positions in the case. Make sure that you and your group members understand your task and your role.

2. Individual preparation (~60 minutes, to be done outside class as homework). Read the general background information explaining the context for the situation and the introduction to the four character positions. Read the specific background materials on the character position you represent to find the perspectives that should be explored in the class debate. You may want to read the specific background materials for the other character positions, too, to see what they are going to argue. You should also do some Internet research to build additional arguments not present in the case study itself. Your instructor may have assigned additional homework and readings.

Use all this information to prepare one to three arguments that support your position that can be used in your group debate. Arguments may be prepared in “bullet point” style, but should have enough detail that other group members can read and understand.

3. Group preparation (~10-15 minutes, to be done in class). Work with your group to synthesize the individual arguments each student created and discuss how they can work together to give strong support for your character's perspective. Create a 5-minute opening statement where your group will introduce its major arguments. During this planning process, you might decide who will speak in what order or which group member will present which arguments. Note that all group members should be actively involved in the group presentation, and every group member should present some part of the argument.

4. The mock conference call (~40-60 minutes). Each group will be given 5 minutes for its opening statement followed by 5-10 minutes to respond to questions from the other groups. The News Director group will go first to outline “her” initial thoughts on the questions. The remaining groups will go in the order they are listed and present their arguments. Finally, the News Director group will take the floor again to ask advice or clarifying questions from the other groups about the decisions “she” must make. Then the News Director group will receive a few minutes to discuss among themselves before announcing and justifying “her” decisions about what to do.

5. Debriefing (~15-20 minutes). After the News Director announces “her” decisions, you are divorced from your assigned role and the instructor will lead the group in a discussion of what you really think after the debate.

General Background Information

HPV and the vaccine. Human papillomavirus (HPV) causes genital warts; it also is estimated to cause over 25,000 diagnosed cancers per year in the U.S. HPV vaccines (e.g., Gardasil) were introduced in the US starting in 2006, and were added to the recommended vaccine schedule soon thereafter, first for girls and then boys. The HPV vaccine is generally not required for school attendance, however. It is relatively expensive, and requires multiple shots spread out over six months. By 2014, only approximately 60% of teenage girls had been vaccinated, and 40% of teenage boys—far below the vaccination rates for diseases like measles. But vaccination rates vary widely, with one state being below 20%, while another was above 75%. Assume that the place where the station is located has a relatively low vaccination rate.

Like all vaccinations, the HPV vaccination can have side effects. Studies both before and after the vaccine was approved show that they are rare. The most common are the standard vaccine side-effects: pain and irritation at the injection site, or even less frequently headaches, fever, dizziness or fainting. A few parents have claimed that the HPV vaccine has caused more serious illness in their children, and in at least one case death. It is easy to find on the internet alarming claims about the harmfulness of the HPV vaccine. Responding to concerns like these, Japan has temporarily removed HPV vaccination from its recommended vaccination schedule; no other country has.

Vaccines and public opinion. In the 1990s, a bogus study alleged a tie between vaccination and autism, and many commentators predicted a crisis of public confidence in vaccination that would result in the resurgence of now-rare diseases such as measles and mumps. In fact, vaccination rates in the U.S. remain high, and a substantial majority of the public understand that vaccines are safe, trust their doctors and follows the advice to vaccinate. In a few specific localities, however, vaccination rates against childhood diseases have sunk to dangerously low levels. Some parents decline to vaccinate their children at all ("vaccine resistance"), while others delay or alter the recommended schedule ("vaccine hesitance"). Individuals appear to have a variety of reasons for these responses:

- concerns about possible adverse effects of vaccination; for example, about the combined impact of the three dozen vaccinations recommended in a child's first twelve years
- confidence that the diseases prevented are rare, mild or that their child would be protected by herd immunity
- the inconvenience, pain or expense of the current vaccine schedule
- distrust of the pharmaceutical industry which both sells vaccines and supervises their safety testing
- a belief that purported "natural" immunity is better than the "artificial" immunity vaccines provide
- distrust of the medical establishment, driven in part by its tendency to close ranks against doubts.
- religious beliefs

Katie Couric had been working as a television journalist for over 35 years at the time of the HPV report, anchoring morning and evening news/talk shows on several networks. She had a strong record of health reporting, driven in part by the deaths of family members due to cancer.

Her on-air colonoscopy in 2000 has been credited with raising awareness about colorectal cancer and increasing colonoscopy rates. She has received several awards for this work.

Couric's episode: Some segments of the HPV episode of *Katie* are still available on YouTube through a search on "Couric HPV". Here is an outline of the whole:

- *Title:* The HPV Vaccine Controversy
- *Teaser-trailer:* "The next Katie: The HPV Vaccine Controversy. It's considered a cancer preventer--but is it potentially dangerous for some girls? One mom who says her daughter died after being vaccinated. [Woman:] 'In 18 days, she was found dead in her bed.' It's our Big Conversation."
- *Opener:* Couric says, "I had my two daughters vaccinated and so did millions of other parents, but some say the risks may outweigh the benefits. There are claims it could be dangerous in a handful of cases -- even deadly--but nearly 80 million Americans have HPV and there are 14 million new cases reported every year. We want to keep our kids safe, but is the vaccine the way to go? That's what we're asking as today's Big Question."
- *Segment [3 minutes]:* Voice-over explains the dangers of HPV and the efficacy of the vaccine. Says that there have been claims of serious side effects, including the death of one young woman.
- *Segment [7 minutes]* The mother of the dead girl tells her story. A statement about vaccine safety from the pharmaceutical company that manufactures the vaccine is read. Doctor #1, a leading HPV researcher, explains that Gardasil is indeed one option, but that regular PAP screening is just as effective at detecting and curing cervical cancer. Doctor #1 also says [in a claim that's been sharply disputed] that the vaccine's protection lasts only 5 years.
- *Segment [5 minutes]:* A mother and daughter tell the story of the painful and debilitating illness that the daughter went through after having the HPV vaccine; the mother claims that one doctor told them that this was a "vaccine injury". Doctor 1 is asked to comment, and says that serious side effects are "highly unusual."
- *Segment [5 minutes]:* Doctor #2 discusses the serious threat of HPV-related cancers and the safety and efficacy of the HPV vaccine. A mother and daughter explain that they decided to get the vaccine.
- *Closing:* Both doctors are invited to comment; Doctor #1 says to remember PAP smears, Doctor #2 encourages a decision to vaccinate. Then Couric turns to interview a celebrity.

Responses to the episode:

- The LA Times accused Couric of "promoting the anti-vaccine movement" by "injecting doubt and emotionalism into important medical discussions and removing science from the arena."
- USA Today asked "Is Katie Couric taking [anti-vaccine advocate] Jenny McCarthy's place as the latest celebrity vaccine denier?"--and then answered "yes," suggesting that the show created a "fake controversy just to boost their ratings."
- Seth Mnookin, a science journalist who has written extensively about vaccines, called the coverage "incredibly irresponsible," adding that "The danger of saying we are going to present both sides of an issue, when all of the facts line up on one side, is that as far as the audience is concerned, you are giving these sides equal weight. It presents a false impression that there is a legitimate debate here."

- Forbes noted that Couric had "stacked the deck against the HPV vaccine," in part by telling "moving stories about vaccine risks using live interviews with people who said they had been harmed, [while] defenses of Gardasil were offered in dry platitudes" from experts.
- In the assessment of Dr. Arthur Caplan, a noted medical ethicist, it was not "appropriate to juxtapose the anecdotal stories with the medical evidence. He had hoped more weight would be given to the scientific evidence of the vaccine's safety profile and effectiveness at preventing cervical cancer."

Couric's apology is available at http://www.huffingtonpost.com/katie-couric/vaccine-hpv-furthering-conversation_b_4418568.html?1386687305.

In her statement, Couric explained that "our goal in doing this show was to help parents make an informed decision about the HPV vaccine, not cause irrational fear. Right now, science is telling us that the benefits far outweigh the risks and that adverse reactions are exceptionally rare events." She admitted that some of the criticism of the show as "anti-vaccine and anti-science" was valid. She explained: "We simply spent too much time on the serious adverse events that have been reported in very rare cases following the vaccine. More emphasis should have been given to the safety and efficacy of the HPV vaccines. As someone who has spent the last 15 years relaying important medical information with the goal of improving public health, it is critical to me that people know the facts." In particular, the time spent "telling these stories [of alleged vaccine injuries] was disproportionate." However, Couric also asserted that "as a journalist, I felt that we couldn't simply ignore ... reports" of serious side-effects.

The power of narratives. Communication research finds that narratives are the default mode of human thought. While we can reason logically and generalize from evidence to more abstract principles, this type of thinking takes mental energy and is only used with conscious effort. Without this effort, humans slip back into narrative thinking. This biological bias makes narrative information more memorable and more powerful on shaping our beliefs, attitudes and behaviors than other formats for information. This bias remains even when contradictory information is present in the same message. For instance, a news story that uses statistics to present information in one direction but then also describes a specific character who experienced the issue in the other direction may appear to tell both sides, but a person who reads that story will be more likely to accept the story portion as a more trustworthy account of the way the world works rather than the more generalizable, but harder to mentally process, statistics.

Introduction to the Four Character Positions

The News Director

- You are responsible for overall supervision of the TV station's newsroom. You have final say in selecting stories, and oversee the final products.
- What roles can story-telling play in science news reporting? Should you put on stories of alleged vaccine harms? Is there a way to tell a story to reinforce the importance of vaccination?—Those are the questions you need to answer!

The Anchor

- You work as an anchor for another television station in the area; you've been friends with the News Director for years.
- Roles for stories in science news reporting? They are vital to attract the public.
- Stories of vaccine harms? Yes, indeed: conflict sells.
- A pro-vaccine story? Sure—you'll have to think about how to do that.

The Doctor

- You are a local pediatrician who has lost patience with vaccine hesitant parents. You know that the research shows the HPV vaccine to be safe and effective, and you think it's vital for all teens to be vaccinated.
- Roles for stories in science news reporting? Limited; anecdotes aren't evidence, and the most important thing is to make sure the public is properly informed.
- Stories of vaccine harms? No way. Media must avoid inflaming people's already irrational beliefs about vaccines.
- A pro-vaccine story? Sure—you'll have to think about how to do that.

Neighbor

- You are a college-educated parent of two tween daughters. You are of course concerned about their health. You expect news media to give you a comprehensive, balanced overview of important health issues.
- Roles for stories in science news reporting? Yes—stories help you understand information and see how it is relevant to your life.
- Stories of vaccine harms? Yes—you need to know the full picture on vaccines, not just one biased side.
- A pro-vaccine story? Sure—you'll have to think about how to do that.

Specific Background Materials for the News Director Group

After a twenty year career as a television news report and anchor, you are now the director of all news operations for a local station. You are proud of your station's record at balanced coverage of important local issues. You've had a particularly good record at science news; working with faculty at the state university in town, you've helped keep your fellow citizens up to date on innovations in science, technology and medicine. Taking complex information and conveying it in a way that ordinary people can understand is a tough job, but vital.

Your philosophy is pretty well summed up in this essay by longtime science journalist Tom Siegfried, "Science Journalism from First Principles,"

http://www.sciencenoise.org/uploads/Science_Journalism_from_First_Principles.pdf

You are concerned about the low rate of HPV vaccination in your area. You understand why—the HPV vaccine puts "sex" and "teenagers" together, which is something parents want to avoid. But you also know that the HPV vaccine has been around for close to ten years now, and that studies have found no increase in sexual activity among vaccinated teens. Therefore you've decided to do a segment on the HPV vaccine, to encourage parents to make informed choices.

You're facing three questions:

1. What roles can story-telling usefully play in science news reporting?
2. How should the segment handle rare vaccine side effects? In specific, should the segment include *any* stories of alleged vaccine harms?
3. Is there a way to use the power of story-telling to reinforce the importance of vaccination?

You've heard a lot of different points of view on each question. Your answers are your own.

You'll start the conversation by sharing your initial thoughts. You'll close the conversation by announcing your decision on these three questions and—most importantly—the justification for those decisions.

Specific Background Materials for the Anchor

You are another television journalist in the area, and an old friend of the News Director. You think that the HPV vaccine—like virtually any topic—could be worked up into a vivid, important news story worthy of the audience’s attention. Your answers to the questions:

1. What roles can story-telling usefully play in science news reporting? They are vital to attract the public.
2. How should the segment handle rare vaccine side effects? In specific, should the segment include *any* stories of alleged vaccine harms? Yes, indeed, both pro and con stories should be included: conflict sells.
3. Is there a way to use the power of story-telling to reinforce the importance of vaccination? Sure—you’ll have to think about how to do that.

Here are some arguments to consider—use your internet research and your imagination to add more.

Our society is saturated by information, good and bad. The only way for news organizations like our own is to compete for eyeballs. If we don’t, we go out of business, and the public will only have the noisy, crowded, anonymous internet to go to for information. So our first duty to the public is to survive. And to survive, we have to continue to tell good stories. We know how to do this—as summarized for example in What makes a good story?

(<https://www.americanpressinstitute.org/journalism-essentials/makes-good-story/>), including the links at the bottom:

Creating a good story means finding and verifying important or interesting information and then presenting it in a way that engages the audience. Good stories are part of what make journalism different, and more valuable, than other content in the media universe.

Research proves two things about good stories:

Treatment trumps topic. How a story is told is more important to the audience than its topic, what it is about. The best story is a well-told tale about something the reader feels is relevant or significant.

The best stories are more complete and more comprehensive. They contain more verified information from more sources with more viewpoints and expertise. They exhibit more enterprise, more reportorial effort.

Good stories have strong central characters; they make information personally relevant by showing how it affects real people; and they portray the conflicts and tensions that makes information interesting. These ideas apply to all journalists, including science journalists; science can’t help anyone if no one watches.

Science journalists are also responsible for exploring multiple perspectives. The *Code of Ethics* says that we are supposed to “boldly tell the story of the diversity and magnitude of the human experience. Seek sources whose voices we seldom hear” (<http://www.spj.org/ethicscode.asp>). The Medical Establishment is quick to reject any questions about the safety of their products. It’s our job to poke around and make sure that alternative voices get heard. Plus let’s remember—conflict sells.

Specific Background Materials for the Doctor Group

You are a local pediatrician who has worked with the television station on medical issues before. You recommend all your patients use the standard vaccine schedule, which includes three rounds of HPV vaccine for girls and boys aged 11-12. Increasingly you are seeing parents who have gotten misinformation online and are now asking for their children's vaccines to be delayed or even skipped. After several recent outbreaks of easily preventable diseases, you have finally gotten to the point of refusing to work with families who refuse vaccines. You think it's a great idea for the television station to raise awareness of the HPV vaccine, but are appalled at the idea that baseless stories of falsely alleged vaccine harms would be included. Your answers to the questions:

1. What roles can story-telling usefully play in science news reporting? Limited; anecdotes aren't evidence, and the most important thing is to make sure the public is properly informed.
2. How should the segment handle rare vaccine side effects? In specific, should the segment include any stories of alleged vaccine harms? No way. Media must avoid inflaming people's already irrational beliefs about vaccines.
3. Is there a way to use the power of story-telling to reinforce the importance of vaccination? Sure—you'll have to think about how to do that.

Here are some arguments to consider—use your internet research and your imagination to add more.

Journalistic story-telling fundamentally distorts science by seeking sensationalism instead. In pursuit of a good story, journalists squeeze science into one of three basic formats, according to well-known debunker Ben Goldacre in *Don't Dumb Me Down* (<https://www.theguardian.com/science/2005/sep/08/badscience.research>): wacky stories, like those focused on unbelievable diets, scare stories about the dangers of ordinary life, and “breakthrough” stories that hype the normal, incremental process of science. Along the way, the scientific evidence goes unreported and unexamined, leaving the reader unable to critically assess the strength of the results. A good story selects some facts and conceals others, spins those facts to make them fit the narrative, and then presents them as vividly as possible. None of this helps the public understand and make use of sound science.

Public confidence in vaccines has already been damaged by journalists' endless search for sensationalism and their insistence on false balance—giving equal time to the scientific consensus and to unscientific anti-vaxxers. Repeatedly over the past twenty years media has used story-telling to keep the anti-vaccine movement alive; that's been documented in the report *Sticking with the Truth* (http://www.cjr.org/feature/sticking_with_the_truth.php). When the scientific results that show that the HPV vaccine is safe and effective are mixed in with emotion-laden but baseless anecdotes about dead teenagers, which do you think are going to win? Such fact-free, over-emotional reporting on medical issues leads directly to illness and death.

There aren't two sides to this question. The only side-effect of the HPV vaccine that is at all frequent is syncope—i.e., fainting. It would be fine to include in the reporting a mention of this plus the basic instruction of how to avoid it: sit down for fifteen minutes after the shot! Beyond this, however, alleged “side effects” should not even be mentioned, much less narrated.

Specific Background Materials for the Neighbor Group

You are a college-educated parent of two tween daughters who lives next door to the News Director and talks with him about job concerns often. Your answers to the questions:

1. Roles for stories in science news reporting? Yes—stories help you understand information and see how it is relevant to your life.
2. Stories of vaccine harms? Yes—you need to know the full picture on vaccines, not just one biased side.
3. A pro-vaccine story? Sure—you'll have to think about how to do that.

It's hard to be a parent nowadays. There are so many threats to our children's well-being, and so little we can do about them. *We* make many of those threats—the same technologies that make our lives comfortable can also destroy them. That's what I think about when I think about vaccinating my children. Author and mother Eula Biss captured it well in her poetic book *On immunity: An inoculation*:

“The imperiled ‘immune system,’” the physician Michael Fitzpatrick observes, “is a metaphor for the prevailing sense of the vulnerability of the human individual in a hostile world.”...The immune system also gathered significance from the emergence of systems theory in the natural and social sciences. Systems theory... has become a pervasive model for how we think about both our environment and our bodies. Where the machine with its distinct components was once the most available metaphor for the body, we now tend to think of the body as a complex system—a sensitive, nonlinear field with elaborate regulatory mechanisms. “What are some of the possible or likely consequences of thinking of the body as a complex system?” Martin asks. “The first consequence might be described as the paradox of feeling responsible for everything and powerless at the same time, a kind of empowered powerlessness.” If one feels at least partly responsible for one's own health, she explains, but understands one's body as a complex system linked to other complex systems, including the community and the environment, the task of controlling all the factors that might affect one's health becomes overwhelming.

What I need from the press is accurate, relevant information presented in a way that I can understand. Stories help me do that: I can understand the science best when it's presented from a personal point of view. Eula Biss's book is a great example—she told her own story, while also including information. You can get a taste of her writing at *Sentimental Medicine* (<http://harpers.org/archive/2013/01/sentimental-medicine/>).

I get suspicious, though, when only one side of a story is presented. That's a basic principle of critical thinking, like those outlined in *How to Detect Media Bias* (<http://libguides.bgsu.edu/c.php?g=227340&p=1506727>). I know the media defer to authorities like doctors; that makes their job easier. I know that the media reflect the perspectives of important people—not necessarily mothers like me. I know that they tilt coverage against parents with questions, labeling all of us “anti-vax” without really listening to our concerns. I want to see in-depth coverage that asks the questions I'm worried about and that brings in both sides of the question. That will allow me to make up my own mind.