Everything should be made as simple as possible, but not simpler. — Albert Einstein

Einstein’s directive was simple advice indeed, but a daunting challenge nonetheless. And perhaps nowhere is this truer than in medical communications, where complexity is the rule, not the exception.

One of the biggest challenges for communicating effectively about pharmaceutical compounds is that the science surrounding the drug can be extremely complex on multiple levels. There’s the complex science of the disease itself and the complex science of the compound—including its mechanism of action and pharmacokinetic profile—which are interwoven with the complexities of scientifically differentiating the compound from its competitors.

Exacerbating this multilayered challenge of “scientific complexity” is the fact that target audiences are time-constrained and often have short attention spans. Whether healthcare professionals, investors or internal company stakeholders, they might find the science uninteresting and not relevant, even though it frequently is. And their scientific knowledge might be limited, making it even more difficult to communicate complex scientific concepts. Plus, they’re subject to information overload, whether it’s trying to keep up-to-date with the latest medical literature or with other compounds under investigation.

Quite simply, if key stakeholders, especially physicians, can’t easily understand the science of your compound—how and why it works and why it’s more effective than alternatives—they won’t be able to differentiate it from other drugs currently on the market or from those approaching approval. They won’t get excited about it. And they won’t be compelled to prescribe it appropriately.

One thing is certain: When something is scientifically complex, it’s harder to understand and to communicate. Given this—on top of the extraordinary amount of time and cost required to get a drug through regulatory approval and to market—one would expect that pharmaceutical companies would do whatever it takes to communicate the excitement and benefits of their new drug in the most powerful way possible. Yet it’s surprising how so many communication programs on the science behind these assets are sleep-inducing affairs that miss the mark.

So, what is the optimal approach to communicating new and complex science in a way that is compelling, intuitive and unforgettable?

The answer doesn’t lie in some new-fangled high-tech approach. In fact, it’s one of the oldest communication tools ever—STORY.
When most people hear “story,” they think of fictional tales, anecdotes and childhood fables that are often used to convey moral messages. But when crafted properly, non-fiction stories — including scientific stories — can be just as powerful and memorable.

At its simplest, a story is a report of connected events. Telling stories has been one of mankind’s most fundamental forms of communication, and storytelling is a universal feature of nearly every culture. Before humans could write, they told stories, verbally and through pictures, as the 25,000-year-old Chauvet Cave drawings in southern France show. It was how we learned, how information got passed from one generation to the next.

Why do stories have such an impact on our learning? Because in its most basic form, a story is a connection of cause and effect, and that’s how we think, how our brains are wired.

In their landmark paper in the book Knowledge and Memory: The Real Story, Roger Schank of Northwestern University and Robert Abelson of Yale University suggest that virtually all human knowledge is based on stories constructed around past experiences, that new experiences are interpreted in terms of old stories, and that “storytelling and understanding are functionally the same thing.” “Stories,” they conclude, “are the basis of human understanding.”

Why is story so hot? Because it works.

Neuroscientists and psychologists have found that storytelling has specific and powerful effects on the brain. Specifically, our brains react differently when we are told a story than when we are presented lists of dry facts or data. During conventional presentations, the two parts of the cerebral cortex linked to speech — Broca’s area and Wernicke’s area — are activated, decoding words into meaning. However, when we are told a story, other areas in our brain that we would use when experiencing the events of the story, in the left temporal cortex, are also activated. In fact, scientists have found that the brains of people listening to a story are activated similarly to those of the person telling the story, almost as if they were experiencing the event themselves. (See sidebar: “The Neurobiology of Story”)
Neuroscientists have found that the brains of people being told a story are activated similarly to those of the person telling the story, almost as if they were experiencing the event themselves.

A study published in the Proceedings of the National Academy of Sciences in 2010 showed an intimate connection between the brain activity of speakers and listeners in conversation. In that study, researchers at Princeton University used functional MRI (fMRI) to record the brain activity of a speaker telling an unrehearsed real-life story and the brain activity of a person listening to that story. They found that during successful communications, speakers’ and listeners’ brains exhibited joint, temporally coupled response patterns, demonstrating that story communication is a shared activity resulting in a transfer of information across brains and, quite amazingly, that the brain activity patterns of the story listener often almost duplicate that of the story teller!

Other neurobiological research using fMRI has shown that there is greater brain activity associated with reading or hearing stories than with a straight presentation of facts. Interestingly, while most research has focused on brain activity during the act of reading, story-induced brain activity also occurs after hearing or reading a story.

For example, in a study published in the journal Brain Connectivity, researchers at Emory University showed heightened connectivity in the left temporal cortex on the mornings after the subjects read story-laden assignments. The authors referred to this heightened connectivity as “a shadow activity, almost like a muscle memory.”

In short, our brains react differently when they receive a story than when they receive straight facts and data. And it’s not only the brain that reacts differently. In a 2009 study led by Paul Zak at the Center for Neuroeconomics Studies at Claremont Graduate University, researchers had student subjects watch a video about a father talking about his experiences with his terminally ill son. Blood samples of the subjects showed a 47% increase in oxytocin — often called the human bonding chemical — in subjects’ bloodstreams after they watched the video. At the end of the study, the subjects were also given the opportunity to donate money to a charity for sick children. And the higher the oxytocin levels, the more the subjects donated to charity, suggesting that stories can actually change brain chemistry — and with it, behavior.

References:
A Big Idea

More Than Just the MOA

For a story to be compelling and memorable, it must be developed around a single “big idea” — a major theme that is easy to understand and around which the story is developed.

While the mechanism of action (MOA) is clearly a key element of a compound’s story, it’s not the only, or even the most compelling, part. Although the MOA provides critical science that supports the compound, it doesn’t necessarily address the science behind the disease process itself. A drug presentation that focuses mostly on the MOA is often not optimally effective because it lacks not only the appropriate background and context, but also the tension that is a critical element of a compelling, powerful and memorable story.

On the flip side of providing too little information is providing too much. For instance, while the “scientific platform” — which contains essentially everything that is known about the drug and disease science — is a critical internal document, it’s not a useful asset for communicating a concise, compelling, powerful story to your target audiences because: a) it lacks story structure; and b) it overwhelms audiences with too much information. As Jan D’Arcy says in her book *Technically Speaking: A Guide for Communicating Complex Information*, “The mind is only capable of absorbing so much information before it shuts down.”

So over-simplify, and you provide too little information— the presentation loses necessary detail, richness and, most importantly, credibility. Over-complicate, and your audience is flooded with too much detail, resulting in confusion, boredom and loss of differentiation. In either case, you’ll likely weaken or lose the story arc, which is a critical part of a compelling presentation.

But even the perfect balance of words, in terms of both content and length, isn’t enough to present a compelling story. That’s because while most scientific presentations rely heavily on words alone, most human learning — more than three-quarters, according to some studies —occurs visually. (See sidebar: “Every Picture Tells a Story”)

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**Mechanism of Action**

- **No Core Story Concept**
- **Limited Information**
- **Lacks Story Flow and Structure**
- **Limited Impact**

**MEDSTORY®**

- **Communicates Core Story Concept**
- **Comprehensive Information**
- **Optimized Story Flow and Structure**
- **Maximum Utility**
- **Integrates MOA Into Story**

**Scientific Platform**

- **No Core Story Concept**
- **Comprehensive Information**
- **Lacks Story Flow and Structure**
- **Limited Utility**

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Every Picture Tells a Story

A major challenge for pharmaceutical presentations is that in the scientific world, communication relies too heavily on words alone. And therein lies a critical problem, because most human learning occurs visually.

According to the dual-coding cognitive theory, learning and memory are a function of new information being incorporated into the brain through two channels: the verbal channel and the visual channel. The dual-coding theory explains the “picture superiority effect”: new concepts are much more likely to be learned and remembered if they are presented through both channels simultaneously. This is not just a theory — studies consistently back this up.

For instance, one study found that more than three-quarters of human learning — as much as 83% — occurs visually, with only 11% occurring through hearing and the remainder through the other senses. In fact, people retain more than three times as much information from a visual presentation than from an oral presentation (35% vs. 10%), and nearly twice as much from a visual-oral presentation than from a visual presentation alone (65% vs. 35%). So the key is not just to tell them or show them, but to show them what you’re telling them. In fact, visualization of scientific ideas improves not only their comprehension but also their memorability.

But visuals alone are also not the answer. To get their optimal effect with audiences, visuals need to be integrated into the story. When story structure and flow are combined with carefully designed visuals, you get the full power of story.

A compelling story also requires the right structure, one that creates tension at the beginning of the story and relieves it at the end. A simple way to think of this is first presenting the problem, and then presenting the solution.

As basic as this sounds, it’s shocking how often pharmaceutical presentations don’t take the time to communicate the “problem” side of the story. Rather, many jump immediately to the solution, i.e., the benefits of their drug. They assume, often incorrectly, that the audience already knows what the problem is and that this problem is fully appreciated. A compelling story arc requires that dramatic tension be developed first by vividly portraying the problem. When the solution is presented as a perfect fit that solves that problem, tension is relieved, resulting in a compelling and memorable story experience.

Of course, communicating the benefits of a pharmaceutical compound seems very different from telling an exciting or emotional story. But part of the reason for this is that the way in which many presenters discuss their compounds lacks a clear and cohesive story, with a simple, powerful theme; dramatic tension; and the relief of that tension, which is a critical element of storytelling.

Gustav Freytag, a 19th century German playwright, structured dramatic stories in five sequential parts: (1) exposition, or the setup; (2) rising action; (3) climax; (4) falling action; and (5) denouement, or resolution. This is called the Freytag pyramid, because when visualized as a function of rising and falling tension, it appears as shown below.

Freytag’s point is that the power of storytelling comes from the creation, and then the release, of dramatic tension, because human beings experience emotional satisfaction, even joy, when psychic tension is relieved. This applies equally to all types of stories, including scientific ones. And it’s this tension that is sorely lacking in many pharmaceutical communication programs.
Story: The Best Remedy

What, then, is the optimal way to communicate a compound’s story, including its scientific complexity, in a way that has maximum impact? It’s what we call a MEDSTORY®.

A MEDSTORY...

- Communicates the big idea that serves as the “moral of the story” — what we call the Core Story Concept
- Has a meticulously crafted logical and captivating story flow that includes the creation and release of tension
- Identifies the problem that the compound solves, with sufficient scientific detail to educate, but not so much as to overwhelm and cause “cognitive overload”
- Presents the compound’s MOA in a simple and elegant manner that is tightly integrated into the story flow
- Contains clear, intuitive, memorable visualizations that help solidify understanding of critical scientific messages and, most importantly, the Core Story Concept.

Achieving this is not as easy as it might seem. It requires synthesizing and simplifying large amounts of information, including the view of internal and external experts. As Chip and Dan Heath say in their best-selling book *Made to Stick: Why Some Ideas Survive and Others Die*, “The hardest part of using stories effectively is making sure they’re simple—that they reflect your core message.”

Communicating and promoting a new compound is no easy task, as crafting a clean, cohesive narrative from volumes of complex scientific data and information requires tremendous focus and skill. Yet with the increasing number of drugs targeted to specific diseases, it’s more important than ever to explain and differentiate yours in the most compelling and memorable way possible. And there’s no better or more effective way to do this than with story.

Steve Denning, an award-winning author and former knowledge management program director at the World Bank, said it best: “When it comes to inspiring people to embrace some new change in behavior, storytelling isn’t just better than the other tools. It’s the only thing that works.”

“The hardest part of using stories effectively is making sure they’re simple—that they reflect your core message.”
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References


If you’d like to find out more about our methodology and MEDSTORY® or see case studies, please contact

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