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LEADERSHIP PERSPECTIVES

COMMUNICATING SCIENCE
TO
PATIENTS, PROFESSIONALS, AND THE PUBLIC

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In this third in a series of commentaries, three leaders at academic health centers from around the world provide perspectives and guidance to meet two critical challenges: effectively communicating inherently complex scientific concepts and the prevalence of medical misinformation. The commentaries provide important insights to overcoming these hurdles, such as prioritizing and integrating comprehensive communication skills training for health care professionals; taking advantage of diverse modes of communication, and intentionally contextualizing and tailoring information to best meet the medical sophistication level of an audience; and collaborating with trusted community leaders as communication messengers.

Featured Commentaries

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Communication as a Cornerstone of Science

In the medical and biomedical professions, effective communication is a cornerstone of success. It creates the essential link between scientific discovery and its comprehension by a variety of audiences. However, the path to clear communication is often riddled with challenges.

The inherent complexity of medical and scientific concepts presents the first significant hurdle. Converting this complexity into an accessible language requires a delicate balance between maintaining scientific accuracy and ensuring understandability. Furthermore, with the pace of scientific advancements growing exponentially, it has become increasingly difficult to keep both professionals and the public updated. Ensuring these developments are conveyed accurately, in a timely fashion, and without causing unnecessary alarm or providing false hope is a significant challenge.

Another important issue in our current digital era is the prevalence of misinformation. Providing accurate, trustworthy information amid sensationalism and hype is a considerable task that all professionals in our field face.

Recognizing these challenges underscores the necessity of integrating comprehensive communication skills training into academic programs. Leveraging the controlled environments of simulation centers and immersive learning methodologies allows

students to practice complex scenarios in a risk-free setting. By doing so, they gain invaluable experience in articulating complex ideas clearly, responding accurately to emerging scientific developments, and offering reliable, evidence-based information to the public.

The incorporation of novel technologies can also significantly enhance our ability to communicate. Advanced visualization techniques, AI-powered editing tools, and interactive platforms can be instrumental in breaking down intricate concepts, ensuring technical accuracy, and facilitating real-time, interactive learning experiences.

The long-term effects of effective communication training are profound. First and foremost, it enhances patient care. Clear, empathetic communication fosters patient understanding and promotes trust, leading to better adherence to treatment plans and improved health outcomes. Second, effective communication is critical in interdisciplinary collaboration, contributing to more robust research findings and innovations. It also plays a significant role in public health by ensuring that important information is disseminated clearly and accurately.

Fostering effective communication is of paramount importance to the advancement of the medical and biomedical professions. By prioritizing this skill in our academic curriculums

and harnessing the potential of novel technologies, we ensure our invaluable work is conducted with precision, quality, and integrity and is communicated with equal competence. The long-term impact of these efforts will resonate in improved patient outcomes, more effective collaborations, and a better-informed public.

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Archana Chatterjee, MD, PhD

Dean, Chicago Medical School

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Communicating Science to Patients, Professionals, and the Public

Communicating complex scientific concepts can be challenging—even with audiences of professionals, let alone patients and the public. The communication strategies for each of these groups need to be tailored to have maximal effect on them. Additionally, modes of communication need to be adjusted based on the audience's preference. For example, a medical student, resident, or fellow might prefer communication by text, while their faculty may prefer to use email. Similarly, younger patients might prefer electronic communication over older patients who may respond better to phone calls. Understanding the best method to communicate our messages with our audiences is the key to effective communication.

Another aspect of communication is that it is a two-way street. Leadership training programs emphasize the importance of listening to understand and be effective and respected leaders. New leaders are advised to and often embark on “listening tours” to understand their roles better. As the new dean of a medical school who came from another institution and started three weeks into the pandemic, I found this to be a particularly difficult challenge. There were crises on multiple fronts that needed to be addressed while I was trying to establish myself in this new

role. Frequent and diverse modes of communication, including emails, phone calls, texts, and online meetings enabled me to cope, restore confidence in my leadership team, and lead our school through this turbulent time.

Much has been written about the importance of trust and transparency in communication. My take on it is that to develop the trust of those we are attempting to lead, we must have the humility to publicly acknowledge what we do and do not know, as well as what we believe we can and cannot do. This was particularly important in communications with the public during the pandemic. As an expert in infectious diseases and vaccines, I was frequently called on to speak to various audiences about emerging information on COVID-19 and measures to control it. In addition to my regular job responsibilities (which are considerable!), I spoke to any individual or group who requested an interview with me. This resulted in numerous local, national, and international media interviews, as well as discussions with local groups and individuals. It became clear to me that with certain groups, while I was the technical expert, I was not necessarily the person who was most trusted to deliver the message. Thus, I partnered with community leaders who were trusted by the audience to support and augment my message.

Another aspect of communication strategy is how we connect with our students. While email is the formal method of communication, during the pandemic, it became evident that our students were feeling isolated and overwhelmed. They needed the human contact that was lacking in the first few months of the pandemic. We instituted regular virtual town halls with our students, which were so successful that we continued them even after the students were able to return to classes and their clinical training sites. The town halls occur in various formats including a separate one for each class (at the request of the students). Some are student-led, while others are led by our Student Affairs office. Based on surveys and focus group feedback from our students, we believe that town halls are an effective tool of communication with our students.

When reaching out to professionals, we found webinars to be an effective means of communication during the pandemic years. With a fast-moving pandemic, it was important to keep health care professionals regularly updated on the progress of the pandemic, as well as on the most recent diagnostic, preventative, and therapeutic modalities available to them. I participated as a technical expert on numerous virtual webinars geared toward diverse audiences ranging from public health personnel and primary care physicians to nurses, pharmacists, and other health care professionals. Many of these webinars were sponsored by local, regional, national, and international public health agencies, as well as professional societies. Regardless of the sponsor, understanding the audience is important to supplying up-to-date, accurate information in a digestible format. Often, presubmitted questions allowed us to provide targeted information that the audience needed. Webinar evaluations helped us learn from our experience and improve future offerings.

When communicating complex scientific concepts, academic health center leaders should be mindful of the make-up and level of sophistication of the audience and their preferred mode of interaction, collaborate with trusted individuals to deliver the message, provide opportunities for two-way communication, and seek feedback to adjust and improve.

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Communicating About COVID Vaccines: A Major Challenge!

Even the best scientific communicators can find themselves in situations where it is difficult to get their point across. This can occur if one believes that their point is so grounded in scientific evidence that it is indisputable. This was very well illustrated during the COVID pandemic. During the rapid phase of vaccine discovery and development, science was continually correcting itself, and beliefs about COVID, COVID vaccination, and societal priorities became intertwined with political ideologies, social beliefs, and fear.

Even in the best of times, the ability to convey complex scientific concepts in a clear, concise, and engaging manner is crucial to understanding, trust, and informed decision-making. In the worst of times, communication efforts compete with unsubstantiated beliefs, misinformation campaigns, and frequent changes in knowledge, data, and evidence. This can be and has been used to illustrate that science itself is a flimsy notion.

For many of us who work in the field of vaccinology, the rapid deployment of mRNA technology for making COVID vaccines was a scientific breakthrough worthy of a Nobel prize. The rapid “real world” clinical trials enabled by the pandemic provided us with better data on

efficacy and safety of COVID vaccines than previously experienced with other vaccines. So, in a difficult time, COVID vaccination provided the medical fraternity with a much-needed solution. Explaining concepts about mRNA technology, vaccine efficacy, and herd immunity in simple terms, however, is challenging. It is also true that the COVID vaccines have potential severe side effects, although statistically many fewer than those of COVID infection itself (in most age groups). This was also concurrent with research findings that were constantly being updated, frequently changing guidelines, and the steady appearance of emerging variants. Distrust occurred not only in our patients, but also, surprisingly, in our students and staff, and sometimes among our own friends.

Some of the approaches that the UNSW Faculty of Medicine and Health applied to communicate in this context (and bear in mind that vaccination rates in Australia were among the highest in the world) include:

- Communicating externally and engaging the public frequently through various mediums, such as public-facing webinars, websites, podcasts, social media, and visuals, along with addressing common misconceptions. Where possible, engaging trusted messengers was also helpful.

- Communicating internally with staff, students, and the broader medical community using the same formats, while adding more in-depth educational materials and opportunities for dialogue (including conferences and peer-reviewed journals). For both internal and external communication, information needs to be concise, with details at a level appropriate to the specific audience.
- Contextualizing and tailoring the information — ensuring that the audience understood it to be the best available information at that time.
- Being open to questions and concerns of all types and addressing them empathetically.
- Meeting vaccine reluctance and fear with understanding and empathy rather than aggression or dismissal. Only by doing so, could we build trust.
- Trying not to judge or close doors on communication channels. Beliefs about COVID vaccination had the potential to become very polarizing, so it was very important to allow ongoing discussion, even if beliefs seemed to be worlds apart.

“In the worst of times, communication efforts compete with unsubstantiated beliefs, misinformation campaigns, and frequent changes in knowledge, data, and evidence.”

Reflecting on this, the communication challenge that COVID vaccination presented can be viewed as a unique opportunity to better ourselves as doctors and communicators. Through effective communication of science, we can improve vaccine acceptance, control the spread and impact of the virus, and, ultimately, save lives.