

How to Present, Summarize, and Defend Your Poster at the Meeting

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For many people public speaking induces stress and fear, but with adequate planning, practice, and understanding of the “dos and don’ts” you can deliver presentations that will communicate your research clearly, succinctly, and with a professional and confident demeanor. This article provides a guide for the novice researcher to develop the skills to deliver several types of presentation and to minimize (and even make use of) the stress and fear. Planning and practice are the key to success.

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Be interesting. . . Be enthusiastic. . . and don’t talk too much.

—Norman Vincent Peale

Introduction

Research is an important component of medicine in that it is required for the continued development of medical science, from new drugs and devices to the way we practice. One of the most important aspects of medical research is communication of the results. Two common methods of sharing research findings are through publication of manuscripts in scientific journals and by presentation of the findings at scientific meetings. Undoubtedly, the most

time-efficient method of communicating research results is through presentation at regional, national, or international conferences. These presentations typically require submission of an abstract that leads to a poster and/or oral presentation at the selected conference. Most medical professionals and researchers have acquired or have access to advanced technical writing skills. However, the skills and abilities required to successfully deliver a presentation publicly are not typically a component of formal medical training programs. Public speaking, for many, induces stress and fear, but with proper planning, hard work, and practice, you can deliver superior presentations that will better represent your research and leave a lasting impression on the audience. This article provides a framework for practitioners to develop the skills and attributes needed to deliver professional and polished presentations and to minimize the stress and fear.

Planning

Proper preparation is key to ensuring a successful presentation. To quote John Wooden, “Failure to prepare is preparing to fail.” Planning a successful research presentation should start at the onset of the research project, even

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prior to any data collection. First, choose a topic or question that you are interested in and enthusiastic about. The presentation will be at least 6 months and potentially 18 months after the start of the project, so it is important that you maintain a level of excitement about the research through the entire process. You must clearly define and write down the research question, including the rationale and expected findings, before designing the study or collecting data. Be sure you know important dates such as abstract deadlines and meeting dates, so as to set realistic timelines for the project. Select a primary target meeting based on the chosen topic and expected audience. Be sure you thoroughly understand the emphasis of any meeting to which you consider sending an abstract, so that you don't, for instance, send an abstract about long-term ventilator weaning strategies to a meeting that is primarily about emergency medicine. If unsure, contact the sponsoring organization regarding session format and participation. Typically, the goal is to present your research to your peers, as they will best understand and benefit from the presentation.

Abstract deadlines are typically at least 4 months, and often 6 months, prior to the meeting, because the process of judging and selecting abstracts is done by a group of reviewers. Notification of acceptance is usually made 2–3 months in advance of the meeting. Do not trivialize the importance of those dates. There are numerous potential pitfalls between abstract submission and the presentation. At the time of abstract submission, your data collection is done, your results are organized and analyzed, you have drawn preliminary conclusions, and you have written a draft of your paper. You'll feel an appropriate sense of accomplishment and relief on the day you submit the abstract, but that euphoria should not be accepted as "completion" of the project; it is only the passing of a milestone. Keep the project fresh in your mind (even as you take on new projects) by reviewing your data, thinking about your study question and rationale, and re-reading the abstract you submitted once a week. This will avoid having to relearn your own data once the abstract is accepted and you begin preparing the poster or presentation. Remember that acceptance of the abstract is not a validation of your research findings. Less than 25% of the abstracts submitted to most major medical conferences are rejected, and that is not because 75% of the research was of excellent quality; rather, it is because the meeting organizers want to generate interaction and information exchange at the meeting, and to increase attendance. The poster presentation may be the first forum at which to communicate your research findings, but it is also an opportunity to have your research scrutinized (thus the phrase "poster defense"), and that conference feedback can be a great asset when you are preparing your manuscript for a scientific journal.

Along with the acceptance letter, presenters receive a packet of information that assists in preparing the poster presentation.

Three important facts to determine are: the format of the presentation, the expected composition of the audience, and the time allotted for the presentation. The presentation format may be an open poster session, a poster symposium, or an oral presentation. It is important to know the expected audience during your presentation preparations, because that knowledge will influence how much time you devote to discussing background information versus methodology, results, or conclusions. Remember that all research presentations are supposed to be persuasive in nature, whether introducing new ideas and technology or attempting to change existing paradigms. The main focus should concentrate on "being true to the data" and allowing the results to support your conclusions and "take-home messages." Determining the knowledge and interest level of the expected audience will lead to a more "targeted" presentation. A more specialized audience will allow or require a more detailed presentation. This may facilitate making several "take home points," whereas the goal for a general audience may be to make only the most important point.

It is important that the time allotted for the presentation be determined in advance of the meeting; the presenter should *never violate the time limit*, which is, without question, the most common mistake made by novice presenters and is sure to raise the ire of the moderator and may lose the audience's interest. The first rule of public speaking mandates that you "say what you have to say" and absolutely "don't talk too much."

Outlining and Organizing

Initially, you may wonder whether you have enough material to make a presentation. In fact, you probably have too much data and you'll have to decide what makes the "final cut" and where in the presentation it is to be presented. Outlining a presentation will allow prioritization and organization of the presented material. As early as possible, identify each issue that you want to present, and write each one on an index card. Prioritize the cards based on their importance to the topic, the results, and providing clarity for the audience. You must then diligently eliminate any nonessential material. The time constraint severely limits the number of points you can make. It may be beneficial to first construct a single sentence that clearly states the conclusion(s) and then add the supporting material into the body of the presentation. This "reverse organization" is an easy and efficient method to outline a presentation and eliminate unnecessary information.

Preparation

Now that you have a general idea of what you want to say, you'll have to decide how to say it. A poster presentation is a one-shot attempt to deliver your points to an audience in a way that will be meaningful and memorable. This is in contrast to a written manuscript, with which readers can digest the information at their own pace and reread it to improve their understanding. A poster presentation must be well organized and follow a logical sequence for the audience to follow along and stay interested. This requires concentrated preparation, and it is never too soon to get started. The most important aspect of preparing a presentation is *rehearsal*. Practice may not lead to a perfect presentation, but lack of practice will certainly lead to a sub-par presentation. In this regard, poster presentations are similar to golf. Lee Trevino once said, "Luck is a very important aspect of golf; and the more I practice, the luckier I get." Do not rely on luck to carry your presentation: it is too important an event and your reputation is at stake. Even the most veteran and polished presenters spend a substantial amount of time preparing and practicing each presentation. Initial practice sessions should be conducted privately. Though these sessions should be considered "rough drafts," they should be taken seriously. Try to mimic the expected conditions as closely as possible, in order to train and become comfortable with your body movements, voice projection, and timing. You may begin by performing individual components of the presentation or even individual sentences and then work to flow the information together. By the end of a 30–60 min practice session you should have delivered the presentation in its entirety a minimum of 5 times. Use a stopwatch to assure that the presentation stays within the allotted time and to develop a feel for the pace of the presentation. Nothing should happen for the first time during the actual presentation, including mistakes. Do not stop in the middle of your practice presentation if you make a mistake. This will prepare you to handle any situation and train you to remain calm in the event of a mishap during the actual presentation.

Now you are ready for a trial run in front of an invited audience. Present the entire presentation to a relative or close friend who will give you objective feedback on your performance. Again, do not stop in the event of a miscue; force yourself to continue the presentation so that you are trained and comfortable with any "hiccup" that may occur. Ask your audience for critique not only of the research, but of your performance, including body language, pace of speech, vocal projection and intonation, timing, articulation, attitude, and confidence. This audience should not contribute comments regarding the content. The next step is making your presentation to an invited peer group that is at least somewhat knowledgeable on your topic. Run the

session exactly as you expect the format to be at the meeting, adhering to the time limit and allowing time for questions and discussions. Encourage this audience to challenge you so that you become comfortable fielding questions and have a general expectation as to what questions will be asked at the meeting. You should be very comfortable with your data and presentation prior to getting on the plane to go to the meeting. Proper preparation will make you more confident and relaxed, and will allow you to enjoy the meeting more.

Poster Presentation Formats

Presenters should be keenly aware of the presentation format prior to arrival at the meeting, as each practice session should have duplicated the environment of the actual presentation as closely as possible. A description of the previously mentioned presentation formats is offered here so that each presenter can arrive with a minimum expectation and develop a "do" and "do not do" list. The 3 basic formats for presenting research at a scientific meeting are: open poster session, dedicated poster symposium, and oral presentation.

In an open poster session, posters with various topics are set up in a large area, usually adjacent to the exhibition hall. Posters may be grouped categorically and further grouped into specialty sections (eg, pulmonary group, mechanical ventilation section, weaning sub-specialty). At some meetings the poster is posted on the first day and remains on display for the entire meeting. There is usually a poster opening session, which may include a social reception during the first evening. It is important to be at your poster during this event, to be available for questions and discussion. It is surprising how many presenters simply do not show up at their posters during this dedicated viewing time. This leaves interested visitors with a negative impression and is unacceptable. Realizing that many presenters may have multiple posters or other commitments during these meetings, some alternative should be considered if there is a conflict. The best alternative is to have a co-author be at the poster at times the primary author cannot; at a minimum, 8.5×14-inch copies of the poster (that include contact information) should be available at the poster.

You may want to view other posters and talk with other researchers, but during the open poster session you should stay beside your poster. Set up your poster early and use the remainder of the set-up time to go view others' posters, but do not engage other presenters in a way that slows or stalls their setting up their own posters; either help them set up as you discuss their work or arrange a separate meeting time for discussion. Presenters should treat the open session as *work*, even though the attendees may act as if it is a "social hour." The poster is one of the reasons

presenters are at the meeting, and you must have the discipline to stay at your poster, ready to discuss your research.

There may be a formal “poster rounds” session scheduled during the meeting, in which a moderator visits some (10–12) posters about related topics. In such “rounds,” the presenter is expected to provide a quick (≤ 5 min) overview of the study and results, followed by a 5–10 min open discussion.

Poster symposia are held in a dedicated room at a scheduled time period (2–3 h) and usually involve a grouping of related posters. This is the format for the OPEN FORUM sessions at the International Respiratory Congress of the American Association for Respiratory Care. These sessions are organized by a moderator who is chosen for his or her experience and expertise in the subject. These sessions begin with a short, informal poster viewing period, in which the presenter is expected to facilitate discussion and answer questions from interested individuals and small groups at the poster. Make a point of meeting the moderator during this time and give him or her a quick overview of your study. Doing so will help him or her develop a few standby questions to initiate the discussion period and will help you anticipate the types of questions you will be asked. During the last half of the session the moderator invites each presenter to the stage to give a brief overview of his or her study and its importance to the audience. This presentation should be ≤ 5 min, to allow up to 10 minutes for questions and discussion.

Oral presentations of original research are offered by few scientific organizations and they are limited to the very best submissions, usually $< 5\%$ of the total number of abstracts accepted. To be selected to present orally is an accomplishment. The presenter is expected to present the research with a slide show lasting no more than 15 min. This session is also moderated by a recognized expert in the related field. Because there is no forum to meet the moderator prior to the presentation, it is acceptable to contact him via telephone or e-mail in advance of the meeting to discuss the research and presentation.

Delivering Your Presentation: The “Moment of Truth”

Although there are only 3 presentation *formats*, presenters may prepare up to 5 distinct presentations prior to arrival at the meeting. I will give preparation and delivery tips for each of the presentation formats.

Three presentations should be prepared for delivery at the poster: one for an observer with a general knowledge of the topic, a second for those with an advanced understanding, and a third for a group with diverse interests and understanding. Take the time to introduce yourself to each viewer as they approach the poster and use that as an

opportunity to learn his or her position and knowledge of the topic.

Presentations to viewers with a general knowledge should be less than 1 min, with 45 seconds given to describing the background and 15 seconds dedicated to the take-home message. Details are generally lost on such viewers and should only be given if a specific question is asked. Never read the poster to the viewer. Refer to the poster only if data presented in tables or graphs will make the results clearer.

Presentations to viewers with advanced knowledge of the topic are the best and may last 5–10 min. Limit the presentation to 3–5 min to allow more time for discussion. With advanced viewers you may not need to give background information and instead you can concentrate on the methodology and results. Use the same 15-second concluding remarks. If the results are clearly stated, the viewers will already know the take-home message. Relish advanced viewers and use them as both learning sources and critics of your work. During these presentations, do not allow new visitors approaching the poster to interrupt you or cause you to start over; they will benefit by eavesdropping on the current discussion, making a full presentation to them unnecessary.

Presenting to a small group at the poster combines the previous 2 presentations. This should be limited to 2–3 min, with single statements regarding the background and methods, heavy concentration on the results (using the poster graphics and tables), and a similar short conclusion.

The poster-side presentation provides a low-stress introduction into public speaking; the audience is small, generally focused and interested, professional, and respectful. You are in close quarters with viewers, which offers a less formal atmosphere, and the tone can be conversational. You should be enthusiastic and confident in your approach; after all, no one in the room knows more about your research than you. Allow your knowledge and experience to shine, but don't force it by overstating your results or the overall importance of your project to the subject in general. Do not be overbearing on viewers either; if traffic is slow, introduce yourself and state your availability to answer questions while allowing them to view the poster at their own pace. Remember that the abstract is little more than an advertisement for your poster, which is really a mini-manuscript. If you follow Shelledy's guidelines for making a great poster,¹ there may be few questions to address. These poster-side discussions are absolutely the best way to exchange pertinent information and are the highlight of the meeting for both presenters and attendees.

The final 2 planned presentations are to be used for presentations from the podium, whether for an oral presentation or during a poster symposium. The final portion of a poster symposium is dedicated to each presenter giving a short synopsis of his or her poster. There will prob-

ably be a seated audience, but be prepared for some movement and activity in the rear of the room around the posters. The moderator will invite you to the podium, introduce you, and give the title of your poster. I recommend that you attend an earlier poster session to become comfortable with the format. Pay special attention to other presenters' styles that you find successful. Breathe deeply as you approach the podium to calm your nerves, but don't sigh, and don't be afraid to smile when your name is called.

It is imperative that you abide by the time limit given by the moderator. Many public speakers begin their talks with a joke or anecdote to ease their nerves and build a relationship with the audience. Do not be tempted to do that at this forum, because doing so cuts into your very limited time and will probably detract from your presentation. Start by thanking the moderator and association for accepting your work, and state why you think it is important. Then simply tell the audience what you did and what you found. Use the discussions generated during poster-side viewing to address any issues that were perceived as important by the viewers. In terms of delivery, your pace and tone should be conversational and comfortable. Keep your head up and make eye contact with audience members in all corners of the room. Avoid looking at the moderator: you are presenting to the audience. If possible, avoid taking any support materials to the podium such as index cards or a written speech or outline, and do not look at or refer to your poster. Reference to those aids gives the audience the impression that you are not sure of what you are saying.

Keep in mind that most audience members viewed your poster, so simply rehashing that information is redundant. This talk will be very similar to your prepared poster discussion for small groups, but you now have the advantage of adapting that presentation based on the poster-side feedback you received. Be enthusiastic and don't be afraid to let your personality come out during the talk. Never backtrack or restate information; if you suddenly realize that you have skipped an important component of your talk, bring it into the discussion following the formal presentation. Although this part of the presentation is more formal, do not preach to the audience; rather speak to them. Speaking at a rate of 100 words per minute is the goal at this type of forum.

Choose your language carefully and be sure that adjectives such as "significant," "always," "never," "best," and "optimal" are supported by the data and results. Usually words such as "relevant," "often," "may," "advantageous," and "beneficial" are more appropriate during poster presentations. Stand still and erect and avoid making nervous body movements that distract the audience. Once your concluding statement is made, look to the moderator to cue

him that you are finished and ready to address any questions. Remember and take comfort in the fact that the moderator is your friend and wants you to be comfortable and successful. Expect a lull as the moderator asks the audience for questions. Use this moment to review your statements and prepare your responses to the impending questions. Fight any sense of relief that you are finished, as the discussion period is likely to be the most lively and potentially "dangerous" time.

Addressing questions is an "art form" that requires discipline and concentration. First and foremost, make certain that you understand the question. If you are unsure of the point of the question, ask for clarification. You may also repeat or reword the question to make sure your interpretation is correct and that the entire audience heard and understands the question. Use this moment to compose the content and method of your response.

Rule number one in responding to questions is, "If you don't know, say so." If that is the case, commend the questioner on his question and either promise to find out and let them know or suggest this as a topic for future research. Do not become defensive during this period; it is better to appear excited to have the opportunity to clarify any issues. It is okay to disagree if it means being true to your data. Defending your research methods is difficult and may be an opportunity for you to demonstrate your knowledge of the literature. Occasionally, you may have to admit that there is a weakness in your methods or results. Be as gracious as possible and learn from the experience so that your next project is more thorough.

Summary

Very few people have a natural talent for giving a successful presentation. Giving a successful presentation requires choosing the proper topic, question, and methods, but the most important keys to success are proper preparation and practice. Rehearsing and giving practice presentations will help overcome public speaking anxiety. It is okay to be nervous. Learn to use nervousness to add a certain "freshness" or "excitement" to your talk. My 2 final recommendations to help you prepare for a positive experience are: (1) find a mentor or coach and (2) use the Internet. A Google search for "poster presentations" yields over 300,000 Web sites, the most helpful of which have ".edu" in the address. Be courageous: you may be scared to death before your first presentation, but almost everyone ends up wanting to do another.

REFERENCES

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