

The 10-minute talk: Organization, slides, writing, and delivery

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Several times each year, a few weeks before each of the national meetings, a group of our faculty and trainees gather for a ritual. This has some of the characteristics of cannibalism: The nonparticipants enjoy the ritual somewhat more than the direct participant. The ritual is otherwise known as, "preparation for giving the 10-minute talk" (Fig. 1). Through the years, several practical concepts have emerged, and these are set forth here. We hope that this will benefit not only the novice who has never given a 10-minute talk but also the "seasoned" lecturer whose talks are preceded by a mass exodus of half of the audience.

ORGANIZATION OF THE TALK

The best 10-minute talk begins with a good abstract. It does not always follow that abstracts accepted for presentation are well written. Therefore, review your abstract to be sure that there are one or two introductory sentences, a stated purpose of the study, methods, results, and conclusions. If there are, they should be the basis for the organization of your 10-minute talk.

With your abstract in hand, you now have two choices. You can either write the talk first and make the slides later or you can make the slides first and then write the talk as you speak from the slides. It is preferable to make the slides first so that you speak from the slides. In this way, the talk is given as an

explanation of your slides rather than the slides illustrating your talk.

In planning your slides, the usual time allotted is 1 minute per slide. There are certain exceptions to this general rule. If there is a new technique which must be explained or a new way of presenting data (for example, in a three dimensional format), it may be wise to allow for 1½ to 2 minutes for this particular slide. On the other hand, in the presentation of data with the same format (several bar graphs in a row or several chest radiographs in a row), 30 seconds should be allowed for these types of slides. In either event, there should probably not be more than 13 or 14 slides in a 10-minute talk. Each section of the talk has its own suggested length as well as its own suggested content.

Introduction (one to two slides): "What made me think of this?" The reason for having an introduction is so that everyone in the audience is on the same wave length that you were when you thought up the project in the first place. It is to bring all of the people in front of you along so that they know what you were thinking and what you knew at the time you designed your study. While you should not review the world literature, it is much better to *overexplain* than to attempt to "dazzle" them with unexplained terms. In the introduction, if you are going to quote prior work, the preferable format is to say, "Dr. X and his or her colleagues" rather than "in work by Dr. X et al." If you show someone else's data, be sure to put the name of the first author, journal, and year at the bottom of the slide. Be sure that every bit of the data is absolutely correct as quoted in the paper. Also make triply certain that you spell the author's name right. He may be sitting in the audience. Of course, the amount of introduction depends upon your audience. If you are speaking to a very specialized group of people, then a prolonged introduction may not be necessary. However, in the majority of instances, the audience is

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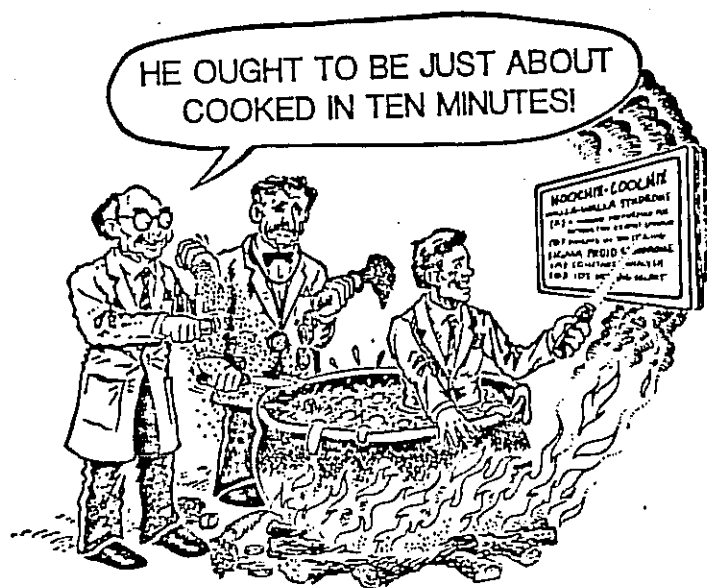


Fig. 1. Ritual preparation for the 10-minute talk.

heterogeneous and a good proportion of those present will require some explanation. It is best to end the introduction with a statement such as, "the previous data have taken us thus far." This then allows the next slide to describe the purpose.

Purpose (one slide): "Why did I do it?" In this section you tell the audience why you did what you did. In general, you do things to answer questions. In the introduction, you have set up the question saying that, for example, "it would be valuable to know the relationship of left ventricular-aortic gradient to ST segment change." The purpose of your study can be put in the form of a hypothesis; for example, "It was the purpose of this study to determine the relationship of ST segment changes to left ventricular aortic gradient. It was our hypothesis that the degree of ST segment depression was correlated with the value of the left ventricular aortic gradient." If there is more than one purpose or hypothesis, they should be numbered. Generally, there is one purpose, but if there is more than one do not have more than three. Once the purpose of the study is stated, the next section is the methods.

Material and methods (one to three slides): "How did I do it?" In this section, you explain how you answered the questions. You should begin with your "materials." If you use patients, you should describe the patient selection criteria used for inclusion in the study. You should certainly make note of who was excluded and why. Include whether the study was prospective or retrospective. If there were animals involved, what were the ages, breed, etc., and perhaps the justification for this particular animal.

For example, in a study of ventricular arrhythmias, one would not want to use sheep since the T wave of sheep is entirely different from the T wave of humans.

You should next describe your methods. The amount of description again depends upon the audience. If there is a specialized group, it may be important to be very specific with details of the methods so that the results could be reproduced by others. On the other hand, if there is a general audience, it may be sufficient to state what you did but in somewhat less exhaustive detail. If there is an apparatus, it is best to show a picture or a diagram rather than attempt to explain it in words. If your study involves a review of patient records, it is not necessary to list every variable recorded; rather, it is appropriate to summarize such as "hemodynamic variables" or "cardiac catheterization variables." It is also not necessary to tell everything that you did (for example, "the first 53 dogs died with the use of this technique so we developed another method that will be reported here"). There is not enough time for this. However, be sure that for every result reported, it is clear in the methods section how that result was obtained.

It is usually preferable to give all of the methods before the results. The one exception is, if there are a lot of data and many comparisons were made, it is not necessary to list all of the comparisons in the methods section; rather, the important comparisons should only be mentioned in the results section.

Results (three to four slides): "What did I find?" It is best to present the results in a standard format, that

is, bar graphs, pie charts, regression lines, or tables. If there are similar *types* of results, it is best to use the same format; that is, if the right atrial pressure is compared with the cardiac output and the left atrial pressure is compared with cardiac output, do not use bar graphs for one and pie graphs for another. On the other hand, if there are different types of results, then it is perfectly appropriate to use different formats. This may add interest to the presentation.

Do not give groups of data numbers or letters (i.e., group A, group B, or group C or group 1, 2, or 3). It is difficult for the audience to remember what "group A" refers to. It is much better to give these groups names, for example, "the Pulmonary Hypertension group" and label it PH.

If you are giving numeric data, usually give the mean, range, and either the standard deviation or standard error. If you are describing a population, use the standard deviation. The reason for this is that the audience can mentally add or subtract two standard deviations to the mean of the population and calculate that 95% of the population falls within these bounds. On the other hand, if you are comparing two groups for a statistical difference between them, it is best to use the standard error. It is best not to use the median unless it is absolutely necessary. This brings up a point that is important in giving a 10-minute talk: "Do not do anything to distract your audience." We usually do not think in terms of the median as a statistic. Therefore, if you use this in a 10-minute talk, it causes the audience to stop and wonder why you decided to use the median. By this time they have missed your next several statements. If there is a good reason for using the median, then it should be explained at the time so the audience is not left wondering.

Summary (one slide). This is an optional section. A summary slide should be included only if there are a great deal of data that all relate to a similar conclusion. One way to decide if a summary slide is necessary is to determine if your conclusions are going to be obvious on the basis of the data as presented. If something is needed to tie the data together, then perhaps a summary slide should be included.

Conclusions (one to two slides): "What did I learn?" The conclusions are best related back to the purpose and hypothesis. If you had two purposes for the investigation, there should be at least two conclusions. The questions proposed in the hypothesis should be answered in the conclusions. The statements and the conclusions should be based *only* on the data that have been presented in the results

IT

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ABSOLUTELY

INEXCUSABLE

T O S A Y

"YOU PROBABLY CANNOT

READ EVERYTHING I HAVE ON THIS SLIDE ETC..."

Fig. 2. Guide for size of type.

section. Do not say, "based upon data I did not have time to show, we also concluded . . ." Do not speculate in this section. In general, it is best to number the conclusions.

There generally is not a "discussion" in a 10-minute talk. Your results are usually not compared to previous studies. However, if this is necessary, after each conclusion it is possible to say a few sentences such as, "this conclusion contradicts the data of Dr. X who said . . ." and "a possible reason for this is . . ."

Significance (speculation) (one slide): "What does it all mean?" This is an optional section. The possible importance of the findings is discussed. Be careful. It may create undue controversy and distract from the good data.

Recommendations (one slide). This is an optional slide. If the study has strong implications for patient care management, this could be included in this section.

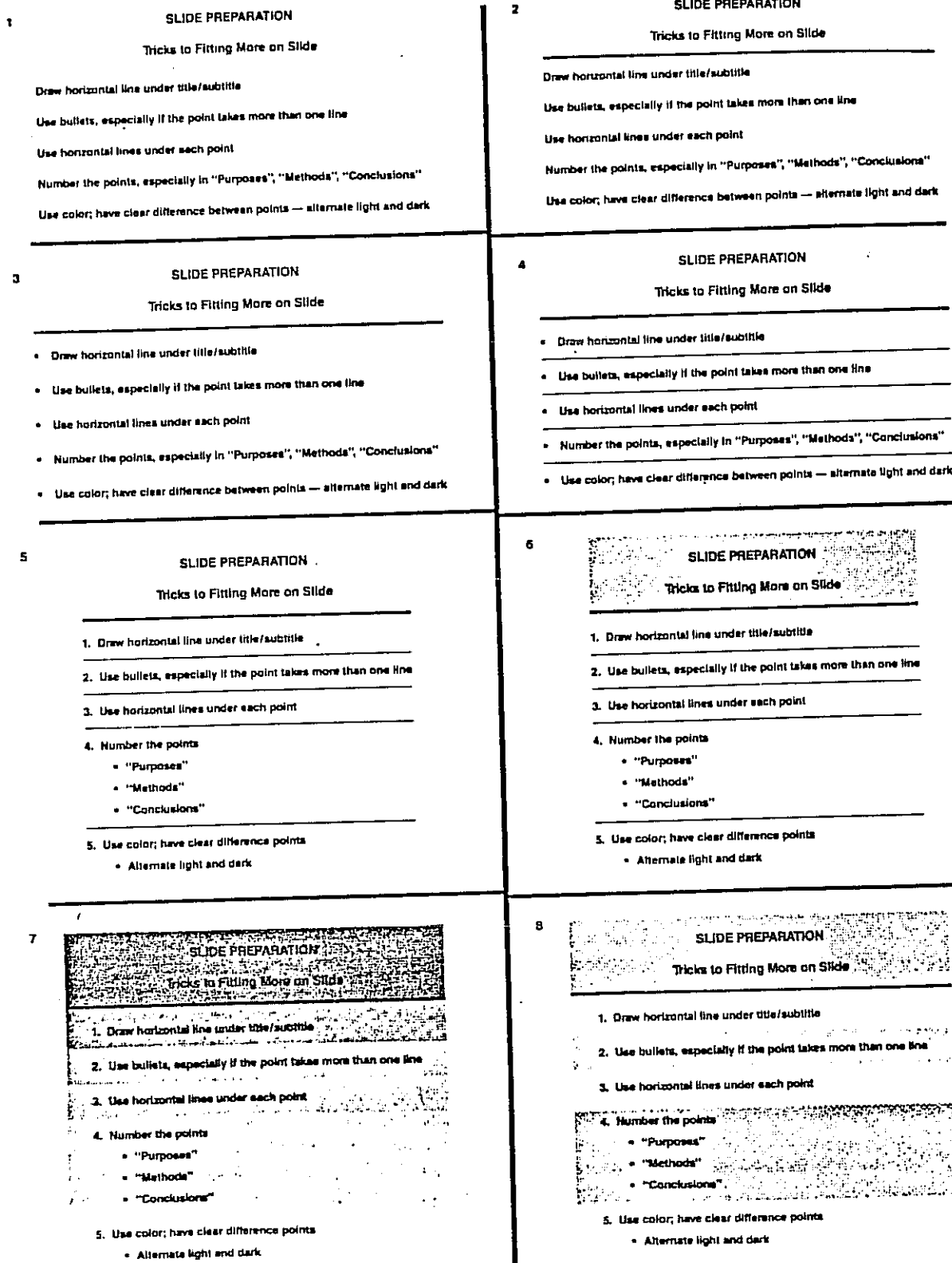


Fig. 3. 1, Sample slide with too much information. 2, Add horizontal line under Title/Subtitle. 3, Add "bullets." 4, Add horizontal lines beneath each "point." 5, Add numbers. 6, Add color to Title/Subtitle. 7, Add color to body of slide. In this example, the gradation of color is too subtle to be helpful. 8, Add meaningful color separation.

RESPONSE OF TACHYCARDIA TO DRUGS

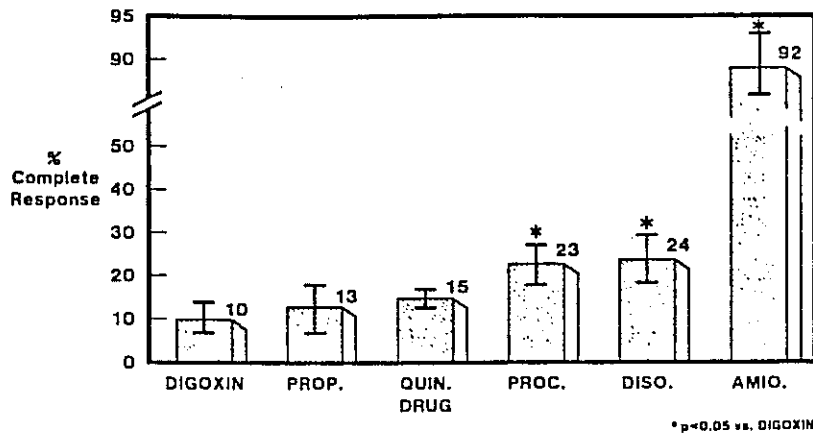


Fig. 4. Bar graph of single bars demonstrating correct format.

Extra slides. If there are more data which were obtained from the study than time allowed for during the formal presentation, these data may be placed on extra slides. If, *and only if*, a question is asked from the audience that is remotely pertinent to one of the extra slides, it is then permissible to ask for the projectionist to show one or two extra slides providing the chairman/moderator agrees to it. These should be referred to, for the projectionist, by the number of the extra slide; for example, "my third extra slide." This is, in general, frowned upon and it is probably better not to waste everybody's time showing an extra slide. It is preferable to give the data from memory. It is not at all permissible to show extra slides unless a pertinent question has been asked.

SLIDE PREPARATION

General. Most slides should have a title. This quickly orients the audience to your slide. The introduction slide may have the title of the talk or no title. However, "methods" (including "patient population"), "conclusions", "speculation," and "recommendations" should be so titled. The results are generally titled with the type of result, for example, "hemodynamic data."

The type should be upper and lower case, except for the title. Do not hyphenate at the end of a line; keep the entire word on the same line. Try to keep phrases on the same line (e.g., do *not* put "measurements were" on one line and "taken every 30 minutes" on the next line). Slides should almost always be horizontal in format. The proportions are five across by four down. The problem with vertical

slides is that screens are horizontal and the slide image may extend above or below the screen.

Word slides. The most common fault of scientific speakers is presentation of slides with too much writing or too much data, or with type too small to be seen by the audience. As a general rule, you should be able to read the text of your slide without magnification when the slide is held at arm's length (with your glasses on). It is *absolutely inexcusable* to say, "I know there is too much on this slide . . ." or "you probably cannot see this . . ." If your audience cannot see the slide from the back of the room do not show it (Fig. 2).

In general, there should be no more than seven lines of material per slide, including the title and subtitle. The individual lines should be no more than seven words in width. Upper and lower case letters are better than all capitals. These rules were originally made for black and white or diazo (white writing on blue background) slides.

There are certain "tricks" to putting more data on a readable slide (Fig. 3, 1 to 8). (1) Draw a horizontal line completely across the slide under the title/subtitle. (2) Use "bullets." These are little "periods" before each major point. This helps especially if your point on the slide takes more than one line. You may be able to fit five "points" on a slide (in addition to the title and subtitle), although there may be actually, for example, eight lines. (3) Use horizontal lines beneath each "point." (4) Number the "points." This is especially helpful in the purpose, methods, and conclusion slides. (5) Use color. Use of different background and word colors, while adding a certain amount of "flair" to a presentation, also has the use

RESPONSE OF TACHYCARDIA TO DRUG AND DOSE

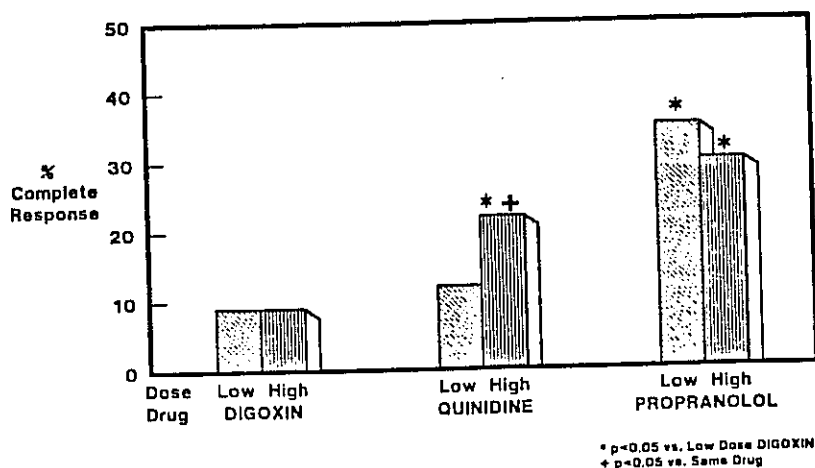


Fig. 5. Bar graph of pairs of bars demonstrating correct format.

of allowing more data per word slide. The background behind the title and subtitle can be one color (e.g., blue), the title words can be another color (e.g. yellow capitals), and subtitles can be different letters (white lower case). Then the body of the slide can be another color (e.g., green). For each of the "points" on the slide, the background shade of green could change. Since the colors are used to accentuate the points, it is best to have an obvious difference between adjacent shades. The current slide manufacturers are fond of beginning with a light shade at the top of the slide and progressing darker. While very pretty this is not helpful, since the shades blend so well. It is better to alternate lighter and darker shades. Even with all the "tricks," it is probably best to have only four or five "points" on an individual slide.

The content of the word slides depends upon the section of the talk. In all sections except the conclusions, speculation, and recommendations, it is best to use phrases rather than complete sentences; for example, "LV aortic pressure gradient 45 mm Hg" rather than "the left ventricular aortic pressure gradient was 45 mm Hg." Try to avoid footnotes, that is, do not insert "***" in the body of the slide and then force the audience to look at the bottom of the slide to tell what the "***" means.

If an abbreviation is to be used, it should be apparent in the text of your talk what it stands for. However, it is best to identify in your talk all abbreviations on the slide by saying something like, "the aortic pressure, abbreviated on the slide as

AOP" Do not overuse abbreviations. If they are necessary, try to abbreviate only the standard words. For example, "V. Func. abnl in 2/26 F. Pts" might have been better written "ventricular function abnormal in 2 of 26 females."

In international meetings, it is best to use absolutely no abbreviations. Those members of the audience who barely understand English are having enough trouble with the words without attempting to read abbreviations. One other reason is that the abbreviations in different languages are not the same. For example, "right ventricle" in English is abbreviated "RV," while the same structure in French is "ventricule droite," and the abbreviation is "VD."

In the last three sections of the talk (beginning with "conclusions"), you may want to have complete sentences on your word slides, such as "(1) Premature ventricular contractions were related to abnormal hemodynamics." This adds a bit of strength to the presentation rather than the abbreviations "PVC related-abnl hemodynamics."

Tables. Tables are especially effective if percentages are used for comparison (for example, 54% vs 26% response). If percentages are used, the total number of patients must be shown for the comparison, either heading the column or the row. Make sure that the percentages total 100%.

In general, too much data are presented in the average table slide. Much of it may not be necessary. For a two-column table, the maximum should be four rows. This may be stretched to five rows if

SIDE EFFECTS OF DRUGS

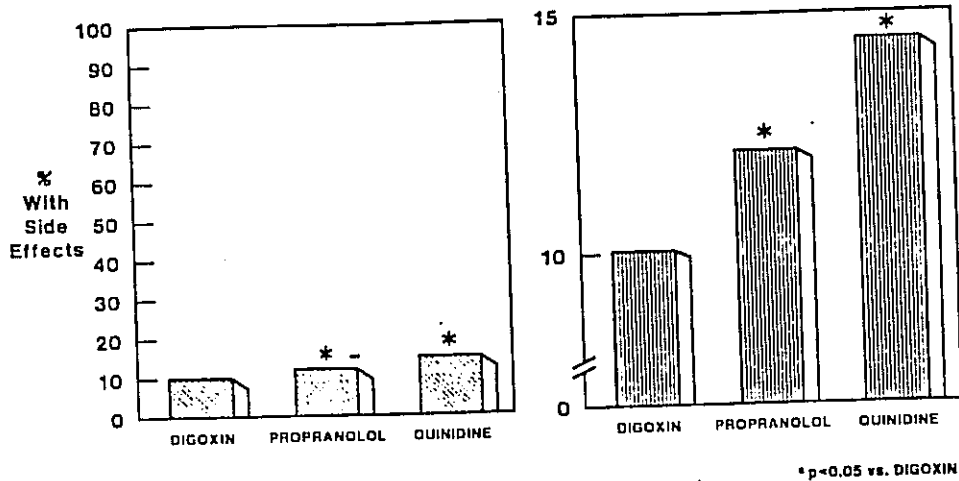


Fig. 6. *Left*, Bar graph with expanded Y axis making statistical difference between bars difficult to distinguish. *Right*, Contracted axis demonstrating difference.

absolutely necessary. For a three-column table, the maximum should be three rows. A table larger than this is impossible to read. If the data are to be discussed in a comparison of groups that appear in columns and the individual data are presented in rows, then draw heavy lines under each row, since each row will be discussed completely before moving to the next row. If color is used, in this situation, the rows should be different colors.

If a column of statistical significance is added, it is headed "up." Values greater than 0.05 are labeled "NS" and for those that are significant, the value is shown; for example, <0.01 or <0.025, etc. All decimal points on slides should have a preceding zero.

Tables photographed directly from journal articles usually do not meet these constraints and are better retyped. It is these tables that most often result in the statement, "I know there are too much data on this slide but I would only like you to concentrate on the fourteenth column." This is absolutely unacceptable.

Bar graphs. Bar graphs are used to compare the responses of different groups to different treatments. There should not be more than eight (preferably six) bars per slide. If only one parameter is compared, up to eight separate bars can be used, arranged in a sensible order, with the highest to the lowest percentage response or vice versa (Fig. 4). However, if a pair of parameters is compared, then only three drugs should be shown per slide (Fig. 5). If a side by side comparison such as this is made, the

bars should not be subdivided from top to bottom. However, if the bars are single, then they may be subdivided vertically and then up to three (preferably two) parts. Certainly, different comparison groups can be enhanced with the use of color.

If only one type of bar is shown, the meaning of the bar is clear from the labeling of the vertical axis; for example, "percentage of patients responding to drug." However, if a side by side comparison is made, then the meaning for each of the different types of bars must be printed on the slide. It is preferable to put the meaning of the bar either directly on the bar or directly below it. It is less preferable to have a key for the meaning in a different part of the slide in a small box. If the exact value of the bar is important, it is sometimes helpful to write the number at the top of the bar. If the value of the bar is a mean value, then the standard error can be shown with error bars extending above and/or below the mean.

In a bar graph, the origin of the Y axis is usually zero. This should be labeled. Select the limits of the Y axis so the height of the bars tells the story (i.e., if there is no significant difference between bars, expand the axis so the heights of the bars look the same; if there is a difference, contract the axis so that the heights of the bars look different) (Fig. 6). If there is a break required because of a high value, then there should be a break in the axis as well as a break in the bar. Statistical differences between bars are preferably shown by the probability printed

SURVIVAL IN CARDIOMYOPATHY

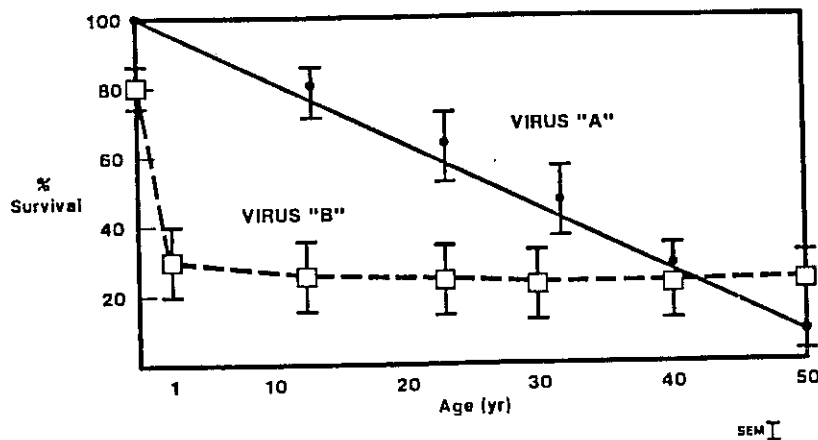


Fig. 7. Line graph demonstrating correct format.

directly over the bar or, alternatively, by asterisks. If asterisks are used, as key must be shown in another part of the slide; for example, $* = p < 0.05$; $** = p < 0.01$.

Pie graphs. Pie graphs are used to indicate how an entire population is distributed. Since this denotes a percentage of the whole, it is helpful to print the numeric percentage on the corresponding part of the pie. As with any other instance when percentages are used, the absolute number should be included on the slide, perhaps as a subtitle.

Line graphs. Line graphs are used to show a relationship between continuous variables. There should be a zero origin for each axis. If you think that the data between each of your data points should fall on a line between your data points, then your data points should be connected by a line. For example, if you infused a drug at four different dosages and the intermediate dosages are likely to have the same relationship, then all of your points may be connected by a line. On the other hand, if the effects of the drug are different at high and at low dose and you only have one point in the high-dose range, it may be preferable not to connect the last dot. You should probably *not* include the formula for the line on the slide. This distracts, and no one is going to use it that day anyway.

On the slide, the data points should, if possible, differ in shape as well as density; for example, a solid line should connect solid squares whereas if there is another line on the same slide, it should be a dotted line connecting open circles (Fig. 7). It is preferable to indicate the dispersion of the points by means of either standard deviation (if there is one curve) or

standard error (if there is more than one curve being compared with another) with bars both above and below the points. However, if this becomes cluttered, either the top half or the bottom half of the error bar can be omitted.

WRITING THE TALK

Each word that you are planning to say should be written down. At the very beginning of the talk, you should address the moderators. One of them will have introduced you. If Dr. X introduces you, then you write down and say, "thank you Dr. X; Dr. Y, ladies, and gentlemen." Then, you can either begin with a few introductory sentences before the first slide or begin immediately with, "may I have my first slide please." Being creatures of habit, most of us are used to looking at slides while someone is talking, and it is likely that people may pay less attention to your words before the first slide. Therefore, it is probably preferable to ask for your first slide and then begin talking.

At this point in writing your talk, you then take what you have designed for your first slide and write down what you want to say about that slide. Since this is an introductory slide, the first line on the slide should say something similar to your first few written sentences. This orients the audience. You should *always* use the same words in writing as you have used on the slide, although you will want to fill in some words in writing. For example, if the slide says, "all sudden death outside hospital," you might write, "all sudden deaths occurred outside the hospital." However, you would *not* write, "all patients who died suddenly, did so outside the medical

center." Since the introduction may be a paragraph long, but there may be only four or five lines on the slide, you need to keep the audience oriented to your slide by pausing before the next line on the slide and by using the exact words on each line. It may be helpful either to use numbers on the different lines on the slide so that you can say, "second, . . ." or say something like, "the *next* thing that was observed . . ." The point is to tell the audience verbally where they should be reading on the slide. It is certainly preferable to point to the slide with a pointer, but it takes a fair amount of polish to read your paper and point at the same time.

This process should be repeated for every slide. The words "next slide please" should be typed into your manuscript along with the number of the slide (for example, "next slide please—number 7"). The reason for this is so if the projectionist gets behind or drops a slide, you can tell him or her which number slide you want to see.

In the actual typing of the manuscript, it is best not to put the words "next slide please" at the top of a page. The reason for this is that it takes a second or two during the delivery of your talk to turn the page. If you have turned the page and the first thing that you say is "next slide please," it wastes time and is distracting. Therefore, change slides either in the middle or at the bottom of a page.

In the presentation of nonword slides, it is most important to orient the audience. Always begin with a sentence that describes the overall point of the slide. For example, "this is a photograph of the heart taken from the front; the patient's head is toward the top of the screen." Always describe the screen from the audience's perspective. This is important to remember since we usually describe patients as if we are looking at them. When you are giving a talk describe the screen, that is, "the left of the screen" or "the right of the screen." Then describe the slide guiding the audience's eyes with your words: "Beginning in the upper left of the screen if you move to the right and down you will see the aneurysm; that is the grey bulge in the middle of the screen."

For graphic presentations, after an introductory statement describing what is to be related, begin with the axes. ("This slide shows the relationship of death rate to age. On the horizontal, or X axis, is the patient's age in years and on the vertical, or Y axis, is the death rate in percent.") Then describe the points and lines if they refer to different groups. ("The solid squares and solid line refer to New York Heart Association class 1, whereas the hollow circles and dashed line refer to New York Heart Association class 2.") Next, describe each line separately.

("The New York Heart Association class 1 patients increased from _____% to _____% and the New York Heart Association class 2 patients increased from _____% to _____%.") Finally, compare the two lines. ("But the increase in class 1 is much greater than the increase in Class 2.")

If the data in your presentation are different from those in the abstract, but they are basically similar with only a difference in sample size, give the data on the larger sample size in your presentation with only a brief reference to the abstract; for example, "as you can see, the numbers on this slide are greater than those reported in the abstract."

Be sure to talk about *everything* on the slide. On the other hand, do not include large segments of methods or any numeric data in the written text that are not at least referred to on a data slide. If a slide has a graph of New York Heart Association classes 1 and 2, but classes 3 and 4 were not included on the slide, then they should not be mentioned numerically. For example, after you describe classes 1 and 2 on the slide, you should not say, "the death rate for class 3 was 10% at 1 year, etc." If these data were important enough to be mentioned numerically, they should have been presented on a slide. However, general mention is certainly permissible ("class 3 paralleled the responses of classes 1 and 2").

With respect to writing the conclusions, if you use complete sentences on the slide, be sure to use the *exact* same words in the text without additional words. This should be the first sentence of each conclusion. If you have more to say about a conclusion than one sentence, it is permissible to elaborate, but make sure that when you are finished with your first conclusion and go on to the second conclusion that you again reorient the audience to your slide. Either refer to it by number, "our second conclusion is . . ." or "the next conclusion is . . ."

By means of the same principle as for the beginning, you should finish your talk at the end of the last slide, that is, do *not* turn the lights on after the last slide and then keep talking to give a few final sentences. People may have automatically stopped listening. It is equally distracting to turn the slides off and the lights on in the middle of a 10-minute talk. If you prepare the written text as a description of slides (rather than the slides as a description of the talk), this problem will not occur.

Always end the talk with a pause and then "thank you." This tells the projectionist to turn the lights on and the crowd to start applauding. It is not sufficient to say "lights on," because people may think you still have more to say. For a 10-minute

talk, the entire text should probably be less than seven double-spaced typed pages. This will vary with the speed of delivery, but it should not exceed nine pages.

PRODUCING THE SLIDES

Do not attempt to produce the slides (i.e., have pictures taken) until the text is written. The reason for this is that when you sit down to write the text, you may realize that you forgot to include something on the slide or the wording in the slide could have been improved.

Begin with black and white typed slides and roughly drawn line drawings. Check the spelling and use these to practice for yourself. Once you and your colleagues are satisfied with the slides, then have them made into diazo or color slides. Allow 2 weeks for final slides. You will find at least one mistake (yours or theirs). The final slides should be numbered 1 through 10 on the plastic part of the slide. This is so that you can put them in the carousel in the correct order and also so that if anything goes wrong during your presentation you can refer to the slide by number for the projectionist.

Get an extra set of the final slides made and give them (along with a copy of the manuscript) to a colleague to take to the meeting in case you leave your briefcase on the bus. Neither of you should ever pack slides in your suitcase since they may get broken or even sent to the wrong city.

THE DELIVERY

First, you must practice the talk, by yourself, several times. Make sure it is consistently less than 9 minutes and 30 seconds. You always go longer during the real talk either because you lose your place or because the projectionist is slow, etc. When you practice, give the talk *slowly*. The greatest mistake is to talk too quickly. With every comma, pause to say (to yourself) the word "one." At the end of each sentence, pause "one, two." With each paragraph, "one, two, three." Do not mumble. Enunciate.

Allow the audience time to read your slide along with you. The audience cannot read one line on a slide while you are talking about another. Do not distract the audience with your delivery. Do not fidget or change your position dramatically every few minutes. Do not wave the flashlight pointer around. Point to what you need and then turn the flashlight off.

The more familiar you are with the talk, the more confidence you will have. After giving the talk several times, you can then begin to look up at the

audience. You may eventually know the talk well enough so that you can use the pointer and point to your slides. This is difficult. One hint is to draw large arrows on the manuscript with the words "out" and "back" in the margin so that you know that between these two, you are supposed to say what is in the manuscript but have this well enough memorized so that you begin to point to the slide at the word "out" and then when you return from pointing, the word "back" reorients you to your manuscript and you can begin reading again.

When you are actually giving the talk, you should always turn around and look at each slide to be sure that it is the slide you think it is. There is nothing worse than spending 45 seconds talking about the wrong slide. Once you have checked to be sure it is the correct slide, then you can begin reading.

After you have practiced for yourself, you need to practice with an audience of your colleagues. It is preferable to do this in a large auditorium where you can determine if your slides are readable from the back of the room. Your colleagues can also time you to be sure you are within the proper time limit. If your talk is too long (it invariably is, the first time you give it for them), they can help you decide how to make it shorter. Reading your talk in front of your colleagues also gives the feeling of being at a podium with a microphone, pointer, and the carousel slide changer. Usually, you will change your own slides during the actual presentation.

Listen to the comments of your colleagues. Try not to be defensive. Just remember that your colleagues will have to go through the same grueling experience standing in front, while you are in the audience next time. Have your colleagues make up questions for you and practice answering them. The question period is actually the most stressful part of the talk and it helps to be prepared.

THE DAY OF THE TALK

Before. Go check out the room. See how big it is. See if there is a timer with lights on it. If there is, the moderator sets the timer at the beginning for 10 minutes. It stays green for 7 minutes, yellow for 2 minutes, and red for 1 minute. After the 10 minutes, it begins to flash red. Will the screen be to your left or right? Determine how you get to the podium. Some stages can only be entered by stairs from the left or the right.

You need to load your own slides into a carousel. If you have "extra slides," they are separated from the main body of the talk by one space. It is best *not* to let the projectionist load your slides. At many meetings, there is a "slide ready room" where you

can check to see that all your slides are right side up and in the correct order. If there is not a "slide ready room," go to the projectionist at the break before you are due to talk (i.e., if you talk at 10:45 and there is a coffee break from 10:00 to 10:30, this is when you deliver your slides, *not* at 8:00 at the beginning of the first session). The projectionist will usually have masking tape and a magic marker to label your carousel. Put your name and the time you are supposed to speak on a piece of masking tape and stick this to the outside of the carousel.

Expect to be nervous. You may want to use the restroom during the break preceding your talk. Expect your mouth to go dry. Bring some Life Savers or chewing gum to help just before you speak, but do not attempt to actually give your talk while chewing on a Life Saver or gum. At the beginning of your session, go sit down on the aisle near the front of the auditorium.

During. When you arrive at the podium, check to be sure that the microphone is working (tap it); make sure the electronic pointer is in focus (point it at the screen and twist the end until the blob becomes an arrow); put your finger on the slide advance button.

There are several things that can go wrong during a presentation. (1) The microphone can stop working. Try to play with it. If it still does not work, raise your voice and ask if you can be heard in the back of the room. If the answer is yes, proceed. If not, ask the moderator whether you should stop. (2) The moderator stops you because the audience cannot hear you. Speak louder and pay attention to the microphone. (3) Someone else's slides are on. Stop. *Be nice to the projectionist* (if you are not, he will find some other way to destroy your presentation). Tell him that those are not your slides. Your name is _____ and you are scheduled for _____. Do not start until your slides are on. (4) Your slides are out of order or upside down. *Stop*. Get the projectionist to put these in the correct order. Do not attempt to go forward and backward yourself. (5) Your slide has a pool of moisture on it. The moisture will evaporate. Go on. (6) Your slide has a misspelling. Do not point it out unless it changes the meaning of the slide. This is distracting. (7) You lose your place. Pause. Say, "excuse me just a minute," and attempt to find your place. If you cannot find where you were say "next slide please" and look for the new place. (8) Your voice gets hoarse and/or you begin to cough. Relax. You know more than they do. Attempt

to go on. If you cannot, ask for a glass of water (refocus the electric pointer; this helps to get your confidence back. You know that you can do that and go on. (9) The red light begins to flash. You have gone too long. If you are on the last slide, go on. If you are not, get to the last slide quickly. If your second to last slide is short, give that slide. If not, skip to the last slide. After 11 minutes, you will get many dirty looks, but the moderator will rarely ever stop you.

After: The question period. It is important to recognize the question period for what it is. Usually, people get up to: show their own data, make a point that you did not think of, thus making themselves look good, or ask a question (this is the rarest). Relax. You may actually learn something. Be calm, be professional, and try not to get defensive. If you do not know the answer to a question, say that you do not know. Do not guess at the additional data requested unless you are absolutely sure of your data. If you are not sure, say so. Try not to refer to your senior author sitting in the front row (i.e., "Well, maybe Dr. Blank can help us out"), it makes you look more junior. Do not argue. Try not to disagree unless the point being made by the questioner is terribly important to the meaning of the talk and you are absolutely sure that he or she is wrong. Be brief. Do not explain yourself over and over. You get into much more trouble by saying too much than too little. Be appreciative. If somebody makes a very good point, tell him so; however, it is probably unnecessary to say "thank you for that interesting question" to everyone.

The watchword of the question period is "do unto others." If you have been polite in your questions to previous speakers, they will usually be polite to you. Unless your question is absolutely burning to you, it is probably best not to ask too many questions in a session *before* you present your own paper. This may cause your audience to think that you really enjoy the question and answer period. You may then get a large volume of questions yourself. While this can be interesting and informative, a great number of questions also increases the likelihood that you will be stumped.

With these caveats, try and enjoy the question period, since it does provide for some very interesting interactions.

Do not forget to pick up your slides.
Congratulations, you made it!