

Prioritization

INTRODUCTION

A critical component of the Part I and Part II APEXPH processes occurs at the point where identified issues are prioritized. Prioritizing issues allows the health department and community to direct resources, time, and energy to those issues that are deemed most critical and practical to address.



The APEXPH workbook mentions several different methods of prioritizing and many have found those methods highly useful. The APEXPH workbook particularly describes how the Hanlon method can be used in both Part I

and Part II (pp. 23-24 and Appendix E). Techniques, such as the Nominal Group Planning Method, the Simplex Method, and the Criteria Weighting Method, are mentioned but not described in detail. This section is designed to describe these methods in greater detail and also offers additional options.

BACKGROUND

Before delving into the “how to,” we will address some basic issues concerning prioritization:

What is prioritization? Prioritization is a process whereby an individual or group places a number of items in rank order based on their perceived or measured importance or significance. In conducting APEXPH, prioritization is generally a group process whereby organizational or health issues are ordered by perceived significance or importance. Prioritizing issues is an important process, in that it assists an organization in identifying the issues on which it should focus its limited resources.

Who is doing the prioritizing? All participants usually have input into the prioritization process. Members of the prioritizing group need to be mindful that their own perceptions may be different from those around them. Often there is no clear right or wrong order to prioritizing, thus creating more difficulty in the prioritization process. This is especially true when trying to prioritize options that are unrelated or whose solutions are very different.

Which method should be used? This section describes prioritization methods and the strengths and weaknesses of each. Some methods rely heavily on group participation, whereas other methods are less participatory and are more focused on baseline data for the health issues. It is important to remember that no one method is best all of the time. Moreover, each method can be adapted to suit the particular needs of a given community or group.



EXAMPLES OF
PRIORITIZATION TECHNIQUES
AND HOW THEY MAY BE
IMPLEMENTED

SIMPLEX METHOD

Several prioritization methods are described in the following pages. A step-by-step process for implementing each is described, as well as ideas for customizing each method. They are displayed in no certain order. A chart near the end of this section summarizes the strengths, weaknesses, and optimal group size for each process.

With the Simplex Method, group perceptions are obtained by the use of questionnaires. The method assists a decision-making group to analyze problems more efficiently. The answers to the questionnaires are scored and ranked and the issues with the highest scores are given the highest priority.

An added feature of the Simplex method is that particular problems can be given more weight, thus raising its priority level. However, this method relies heavily on the way in which the questionnaire presents the problems and questions. A customized exercise using the Simplex method follows this section.

Step-by-Step for Simplex:

1. Develop a simplex questionnaire. The questionnaire should have a series of questions about each particular option being prioritized. Close-ended questions should be used rather than open-ended, due to the ease in comparing responses to close-ended questions. The answer to each question should have a corresponding score with the higher scores reflecting a higher priority. While the questionnaire can ask as many questions as desired, fewer questions permit quicker responses and diminish the chance that questions overlap each other or cause other distortions. For example, questions such as the following could be asked for each health issue being prioritized:
 - A. This health issue affects:
 - a) very few people
 - b) less than half of the people
 - c) half the people
 - d) a majority
 - e) everybody
 - B. The pain, discomfort, and/or inconvenience caused by this health issue is:
 - a) none
 - b) little
 - c) appreciable
 - d) serious
 - e) very serious

SIMPLEX METHOD
(continued)

Each issue being prioritized needs its own set of questions, and in order to compare the responses and place the answers in rank order, the questions need to be comparable for each health issue. At a minimum, each problem needs to have the same number of possible answers.

2. Before the questionnaire is distributed, respondents need to understand the issues being presented, its impact, other information and data related to the problem, and potential interventions.
3. Respondents then fill out the questionnaire.
4. Answers to the questions relating to each issue are averaged. The issues are then ranked in order, from most important to least important.
5. The issues, having been placed in rank order, can be selected in one of two ways: priority issues can be all those above a cutoff point (e.g., those with scores ≥ 60); or a specified number of the top issues can be selected (e.g., the top six issues).

Ideas for Customizing Simplex:

- Groups may choose to place additional weights to certain questions if they are deemed particularly important.

NOMINAL GROUP PLANNING

Nominal Group Planning was developed for situations where individual judgments must be tapped and combined to arrive at decisions which cannot be determined by one person. This strategy is best used for problem exploration, knowledge exploration, priority development, program development, and program evaluation.

In the APEXPH process, nominal group planning can be used to:

- determine what community issues are of greatest concern;
- decide on a strategy for dealing with the identified issues; and
- design improved community services or programs.

The model is used in basically the same way for each application. This method involves little math and is based more on group discussion and information exchange.

Group members generate a list of ideas or concerns surrounding the topic being discussed. This list becomes decision-making criteria and the prioritization is the ultimate result of consensus and a vote to rank order the criteria.



NOMINAL GROUP PLANNING
(continued)



Step-by-Step for Nominal Group Technique:

1. First, it is important to establish the group structure. Decide whether or not the group should be broken down into subgroups. A more complicated problem is often better handled by being broken down into components that can be addressed by smaller subgroups. The minimum suggested size for the process is 6 to 10. This method often works well for larger groups, and consensus can be reached with as many as 15 to 20 participants.
2. The group should then determine the leader or facilitator. The leader explains the process and question being considered.
3. Before initiating discussion, the participants should silently write down all of their ideas and recommendations. There is no discussion at this stage. This stage should take approximately four to eight minutes.
4. The leader works with the group to list items from each group member in a round-robin fashion. Each member is asked to briefly state one item on his or her list until all ideas have been presented. The group leader records these items, using the members' own words, on a flip chart in full view of the group. Members should state their items in a phrase or brief sentence. This step may be lengthy, especially in large groups, but may be shortened by limiting each member to a specific number of items.
5. Once a list has been compiled, the group then reviews, organizes, clarifies, and simplifies the material. Some items may be combined or grouped logically. Each item is read aloud in sequence. No discussion, except for clarification, is allowed at this point. This stage should generally take approximately two minutes per item, but may be shortened by allowing less time per item.
6. Each member of the group then individually places all the options at hand in rank order from one to ten on a notecard (a community may choose to alter this number from ten). The group members' rankings are collected and tallied.
7. By tallying the rankings, each item is given a total score. The results are posted on a flip-chart or through some other means whereby the group can see the results. The group leader then works with the group to discuss the preliminary results. At this point, criteria for evaluation, such as equity, proportion of the community affected, and cost of intervention, can be discussed for each item.

NOMINAL GROUP PLANNING
(continued)

8. After the discussion, the group may re-rank their choices. The process is then re-done and the new ranking is the final product.

Ideas for Customizing Nominal Group Technique:

- Criteria used in the discussion of the issue ranking can be selected by the community.
- Subgroups can be used to discuss issues (e.g., a subgroup can prioritize all of the environmental health issues, to come up with the priority issue to be addressed).

CRITERIA WEIGHTING METHOD

The Criteria Weighting Method is a mathematical process whereby participants establish a relevant set of criteria and assign a priority ranking to issues based on how they measure against the criteria. The calculated values do not necessarily dictate the final policy decision, but offer a means by which choices can be ordered. An example exercise follows this section, entitled "Priority Setting Exercise: A Customization of the Criteria Weighting Method."

Step-by-Step for Criteria Weighting Method:

1. The group first needs to start with criteria to consider about each issue. Criteria could include the following:
 - Magnitude of the problem: How much of a burden is placed on the community, in terms of financial losses, years of potential life lost, potential worsening of the problem, etc.?
 - Seriousness of the consequences of the problem: What benefits would accrue from correcting the problem? Would other problems be reduced in magnitude if the problem were corrected?
 - Feasibility of correcting the problem: Can the problem be addressed with existing technology, knowledge, and resources? How resource-intensive are the interventions?

Other criteria might include whether the problem is perceived as serious by the community and whether incentives exist to intervene. The criteria can be derived through a variety of means, but the Nominal Group Technique (described above) is particularly suited to help in this process.

2. The group then has the task of determining the relative significance of each criteria. This is done through these steps:

CRITERIA WEIGHTING
METHOD (continued)

- a) The criteria are discussed to assure that the group understands each criteria and its appropriateness and validity.
 - b) Each group member places a value on each criteria, such as 1 to 5.
 - c) These values are averaged and these averages become the weights that will be used in the final ranking process.
3. Next, members of the group individually rank each issue according to the criteria. A scoring system of -10 to +10 permits a more acute measure of individual issues. For example, if an issue is nearly impossible to address with current resources, it could be assigned a -8 in "feasibility of correcting the problem", but may receive a score of +8 in "magnitude of the problem." Once each member scores the issues, the scores are then averaged.
 4. Then, determine the significance levels of the criteria by multiplying each issue rating by the criteria weight. The product of this is the "significance level."
 5. The significance level scores for each issue are then summed and divided by the number of criteria. The totals are then placed in rank order with the issues with the highest number being of the highest priority.
 6. Once the issues are then ranked, the group can then make final decisions about prioritization.

Ideas for Customizing Criteria Weighting:

- Some groups may want to leave the issues in the order in which they are calculated.
- Others may want to make the final prioritization decision based on discussion using the results as a starting place.
- Each community needs to determine their own criteria- this allows for consideration of many factors in the community.

A "QUICK AND COLORFUL"
APPROACH

Some health departments and communities may want to adopt a quick, easy, and perhaps more entertaining approach to prioritizing. This technique uses a means whereby individual group members vote to prioritize each health problem. A secret ballot method or open method can be used.

Step-by-Step for a "Quick and Colorful" Approach:

1. Determine if the vote should be open or by secret ballot. If it is by

**A "QUICK AND COLORFUL"
APPROACH (continued)**

secret ballot, set up labeled ballot boxes for each problem to be prioritized. The boxes should be constructed so that "voters" cannot see the ballot placed by the previous voter. If it is open, place flip charts around the room with the health issues written on them.

2. All members of the group should be provided with tokens with which to vote. These can be colored poker chips or pieces of cardboard, numbered pieces of paper, or a similar item that indicates a relative rank (i.e., red indicates top rating, yellow-medium, green- low). If the process is by open voting, colored stickers can be used. The number of ranks can be chosen by the group, but five or fewer simplifies the process.
3. Group members are given an overview of each of the health issues, and are instructed to consider all of the issues and to prioritize these by voting their relative rank.
4. Members place one token in each box, if by secret ballot, or place a colored sticker next to the written health issue on the flip chart, if by open voting.
5. Votes are tallied for each health issue and the overall scores are then rank ordered.
6. At this point, the group can accept the prioritizing that resulted from the rank order or choose to discuss the order and re-rank the health issues. Before the process begins, it is often a good idea to decide what will be done after the result of the first vote and if it is decided to vote again following a discussion, it is a good idea to decide how many times this will be done.

Ideas for Customizing a "Quick and Colorful" Approach:

- The group can decide to place weights on particular problems if they are deemed more important.
- The number of colored tokens or stickers that each member receives can be controlled (e.g., distribute only two red stickers).

**COMPARISON OF
PRIORITIZATION TECHNIQUES**

Given the many different techniques for prioritization, health planners may wonder how to determine which method to use. Different techniques are suited to different types of decisions, groups, and data. Perhaps most importantly, most of these methods permit individual tailoring so that it can best meet the needs of a particular community. The chart below provides a summary of the techniques described here and the strengths and weaknesses of each.

SUMMARY OF PRIORITIZATION TECHNIQUES

	Strengths	Weaknesses	Optimal size of group
SIMPLEX	Efficient and quick to use, once questionnaire is constructed. Can be used with any size group. Allows for weighting of problems.	Requires the development of a questionnaire. Relies heavily on how questions are asked.	Any size.
NOMINAL GROUP PLANNING	Motivates and gets all participants involved. Can be used to identify areas for further discussion and can be used as part of other techniques (e.g., to help develop a Simplex questionnaire.) Allows for many ideas in a short period of time Stimulates creative thinking and dialogue. Uses a democratic process.	Vocal and persuasive group members can affect others. A biased or strong-minded facilitator can affect the process. Can be difficult with larger groups (more than 20-25). May be overlap of ideas due to unclear wording or inadequate discussion.	10-15 (larger groups can be broken down into subgroups.) Not less than six.
CRITERIA WEIGHTING	Offers numerical criteria with which to prioritize. Mathematical process (this is a weakness for some). Objective; may be best in situations where this is competition among the issues. Allows group to weight criteria differently.	Can become complicated. Requires pre-determining criteria.	Any size.
HANLON (DESCRIBED IN THE APEXPH WORKBOOK, PP 23-24 AND APPENDIX E)	PEARL component can be useful feature. Offers relatively quantitative answers that are appealing for many. Baseline data for issues can be used for parts; this can be appealing due to the objectivity of the data.	The process offers the lowest priorities for those issues where solution requires additional resources or legal changes which may be problematic. Very complicated.	Any size.

SUMMARY OF PRIORITIZATION TECHNIQUES (Continued)

A "QUICK AND COLORFUL" APPROACH

Strengths	Weaknesses	Optimal size of group
Simple. Well-suited to customizing. Blinded responses prevent individuals influencing others. Less time intensive.	Less sophisticated. Doesn't offer the ability to eliminate options that may be difficult to address given current laws and resources. If open voting is used, participants may be influenced by others' votes.	Any size.

CONCLUSION

There are many different techniques which local health departments, community health committees, and others can use to identify and prioritize issues. By using formalized techniques, such as those described here, groups have a structured mechanism that can facilitate an orderly process. Such a process also offers a common starting point that groups can alter to suit their own specific needs. Whatever technique is used, it is important to keep in mind that the reason prioritization is undertaken is to include input from all interest groups. Therefore, it is vitally important to include the community when defining criteria.

Attached are two prioritization exercises which the Thurston County Community Health Task Force used during their APEXPH process. The first is an adaptation of the Criteria Weighting Method, the second is a varied form of the Simplex Method.

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OTHER RESOURCES

Centers for Disease Control and Prevention, Public Health Practice Program Office. *Program Management: A Guide for Establishing Public Health Priorities*. Atlanta, GA: Centers for Disease Control and Prevention, Public Health Practice Program Office, 1988.

Delbecq, Andre L., Andrew H. Van de Ven, and David H. Gustafson. *Group Techniques for Program Planning: A Guide to Nominal Group and Delphi Processes*. Glenview, IL: Scott, Foresman, and Company, 1975.

Moore, Carl M. *Group Techniques for Idea Building*. Applied Social Research Methods Series, Volume 9. Beverly Hills, CA: Sage Publications, 1987.

Spiegel, Allen D. and Herbert Harvey Hyman. *Basic Health Planning Methods*. Germantown, MD: Aspen Systems Corp., 1978.

Priority Setting Exercise

(A Customization of the Simplex Method)

When comparing health problems consider, by major topic area, the following:

- Size of the problem: if more people are affected, it may be of higher priority.
- Seriousness of the problem: a problem with a high death rate may be of higher priority than a problem with no life-threatening consequences.
- Are there effective interventions available to address the health problem? Can the intervention be implemented quickly and simply for an effective outcome?
- Can the problem be addressed through a health program? Are there other systems that are more effective for intervention?
- Does it make economic sense to address the problem? Are there economic consequences if a program is not carried out?
- Will the community accept a program? Is it wanted? Is funding available or potentially available for a program?
- Do current laws allow program activities to be implemented?

HOW TO USE THE FOLLOWING TOOL

1. Beginning at the top of each column on worksheet #1, compare each pair of health problems listed while asking yourself, "If I could choose only one health problem, on which should our county focus first?" For instance, under column 1, problems 1-2, should "chronic disease" have priority over "substance abuse"? Circle the number corresponding to your choice.
2. Continuing down each column, compare issues and choose one of the two options noted.
3. Count the number of times each number was circled on worksheet #1, and fill in the blanks next to the corresponding number on worksheet #2.

**This exercise was adapted from the Thurston County Public Health and Social Services Department, WA. To customize this worksheet to your jurisdiction, please substitute the issues identified in your community on Worksheet #2. Then alter the number of issues on Worksheet #1 to correspond to the number your community has identified.*

WORKSHEET #1
CIRCLE THE NUMBER CORRESPONDING
TO YOUR FIRST CHOICE IN EACH PAIR

	Col 1	Col 2	Col 3	Col 4	Col 5	Col 6	Col 7	Col 8	Col 9	Col 10	Col 11	Col 12	Col 13	Col 14
	1-2													
	1-3	2-3												
	1-4	2-4	3-4											
	1-5	2-5	3-5	4-5										
	1-6	2-6	3-6	4-6	5-6									
	1-7	2-7	3-7	4-7	5-7	6-7								
	1-8	2-8	3-8	4-8	5-8	6-8	7-8							
	1-9	2-9	3-9	4-9	5-9	6-9	7-9	8-9						
	1-10	2-10	3-10	4-1	5-10	6-10	7-10	8-10	9-10					
B-30	1-11	2-11	3-11	4-11	5-11	6-11	7-11	8-11	9-11	10-11				
	1-12	2-12	3-12	4-12	5-12	6-12	7-12	8-12	9-12	10-12	11-12			
	1-13	2-13	3-13	4-13	5-13	6-13	7-13	8-13	9-13	10-13	11-13	12-13		
	1-14	2-14	3-14	4-14	5-14	6-14	7-14	8-14	9-14	10-14	11-14	12-14	13-14	
	1-15	2-15	3-15	4-15	5-15	6-15	7-15	8-15	9-15	10-15	11-15	12-15	13-15	14-15

WORKSHEET #2

TOTAL THE NUMBER OF TIMES EACH NUMBER IS CIRCLED

- ___ #1. Chronic Disease
- ___ #2. Substance Dependence
- ___ #3. Mental Health
- ___ #4. Dental
- ___ #5. Infectious Diseases
- ___ #6. Prenatal Care
- ___ #7. Teenage Pregnancy
- ___ #8. Health Education
- ___ #9. Unintentional Injury
- ___ #10. Nutrition
- ___ #11. Violence
- ___ #12. Lack of Family Strengths
- ___ #13. Water Contamination
- ___ #14. Air Quality
- ___ #15. Food Safety

Priority Setting Exercise

(A Customization of the Criteria Weighting Method)

Priorities will be set among identified health issue areas using a method that weighs: 1) the ability to evaluate outcomes; 2) the size of the problem; and 3) the seriousness of the problem. Each of these questions should be considered separately and the results collated. The resulting score will establish the relative priorities of the identified health problems.

As you are completing this exercise, please keep in mind that you were asked to serve on this Task Force because of your perspective. There is no right or wrong answer to the questions. You must weigh your understanding of the numbers provided with your perception of the issues identified.

Please complete the attached worksheet and bring it to the next meeting.

1. ABILITY TO EVALUATE OUTCOMES

Give each identified health problem a numerical rating on a scale of 0 through 10 that reflects the ability to evaluate the outcome of any given intervention; the more measurable (either numbers or perception), the higher the number.

AVAILABLE DATA	"OUTCOME" RATING
None	0
Perceptions only— anecdotal	1 or 2
Perceptions and some numbers — e.g. counts of services delivered	3, 4, or 5
Perceptions and numbers— some baseline available for comparison; e.g. snapshot survey without ongoing evaluation	5, 6, or 7
Perceptions and numbers— baseline available for several years to establish trends	8, 9, or 10

Note: This exercise was adapted from the Thurston County Public Health and Social Services Department, WA. To customize this exercise for your jurisdiction, please insert the appropriate information for your community, such as population and health issues that are being considered.

Priority Setting Exercise—Criteria Weighting Method

(continued)

2. SIZE OF THE HEALTH PROBLEM

Give each health problem a numerical rating on a scale of 0 through 10 that reflects the percentage of the local population affected by the particular problem—the higher the percentage affected, the larger the number.

Population with the health problem (numbers in brackets are based on 180,000 - the population of County X)	"Size" Rating
less than 0.01% (18 people)	0
0.01% through 0.09% (162 people)	1 or 2
0.1% through 0.9% (1,620 people)	3 or 4
1% through 9.9% (17,820 people)	5 or 6
10% through 24.9% (44, 820 people)	7 or 8
25% or more (more than 45,000 people)	9 or 10

Because the size of the problem is considered to be more critical than our ability to evaluate outcomes, this score will be multiplied by a factor of 2.

3. SERIOUSNESS OF THE HEALTH PROBLEM

Give each health problem a numerical rating on a scale of 0 through 10 that reflects the seriousness of the particular problem—the more serious the problem, the larger the number.

Recognizing that this rating is subjective, the following questions may be helpful in setting criteria for rating the seriousness of health problems:

- What is the emergent nature of the health problem? Is there an urgency to intervene? Is there public concern? Does the health problem cause long term illness?
- What is the severity of the problem? Does the problem have a high death rate or high hospitalization rate or does the problem cause premature illness or death over time?

- Is there actual or potential economic loss associated with the health problem? Will the community have to bear the economic burden?
- What is the potential or actual impact on others in the community (e.g. measles spread in susceptible populations)?

How serious is the health problem?	"Seriousness" Rating
Not serious— little impact	0, 1, or 2
Moderately serious— illness	3, 4, or 5
Serious— some deaths, impacts others	6, 7, or 8
Very serious— high death rate, premature death, great impact on others	9 or 10

Because the seriousness of the problem is considered to be more critical than our ability to evaluate outcomes or the size of the problem, this score will be multiplied by a factor of 3.

Priority Setting Exercise—Criteria Weighting Method
(continued)

**COMMUNITY HEALTH TASK FORCE WORKSHEET:
SETTING PRIORITIES**

Health Problem	Outcome (Score X 1)	Size (Score X 2)	Seriousness (Score x 3)	Total Score
Access				
Violence				
Substance Abuse				
Chronic Disease				
Environment				
Mental Health				
Prenatal Care				
Education				
Nutrition				
Infectious Disease				
Dental				
Total				