HIV Prevention Community Planning: Challenges and Opportunities for Data-Informed Decision-Making

Hortensia Amaro,[1,6] **Susan M. Blake,**[2] **Allison C. Morrill,**[1,4] **Kevin Cranston,**[3] **Jennifer Logan,**[4] **Kerith Jane Conron,**[1,5] **and Jianyu Dai**[1]

The use of data in decision-making by the Massachusetts Prevention Planning Group (MPPG) was assessed using multiple methods: in-depth interviews, member surveys, directed observations, and archival review. Three factors known to influence group decision-making were of interest: (1) member characteristics, (2) group structure, and (3) data inputs. Membership characteristics were not related to reliance on data. However, group structure factors and data inputs were directly related to reliance on data. Most members accepted an advisory role and felt participation was worthwhile. About half were dissatisfied with decision-making processes, citing member conflicts and distrust. Incompleteness of data, inadequate presentation quality, and lengthy intervals between presentations and actual decision-making were identified as deficits. Although most members reported skills with HIV- and intervention-related data, most also reported deficiencies in interpreting evaluation and cost-effectiveness studies. Member trust and use of data in decision-making could be improved by clarifying decision-making structures and processes, assuring high-quality data presentations, and supporting or training members to better interpret and use data.

KEY WORDS: HIV prevention; community planning; decision-making; qualitative/multiple methods.

INTRODUCTION

Although grassroots activism has been notable with HIV/AIDS prevention efforts, there was no formal structure for broad participation until 1993, when the Centers for Disease Control and Prevention (CDC) recognized that members of at-risk communities should be at the official planning table (Valdiserri *et al.*, 1997). The CDC required all jurisdictions receiving HIV prevention funding to create Community Planning Groups (CPGs) to advise departments of public health and assist in identification and prioritization of target populations, their HIV prevention needs, and the interventions most likely to be effective in meeting those needs. The CDC has a history of implementing and evaluating community planning processes to inform public health efforts including the Planned Approach to Community Health (Kreuter, 1992; Orenstein *et al.*, 1992; Steckler *et al.*, 1992). The Ryan White Care Act (Bowen *et al.*, 1992; McKinney *et al.*, 1993; Marx *et al.*, 1997; Weissman *et al.*, 1994) under the Health Resources and Care Administration also provided a model for the CDC to consider in formalizing community planning for HIV/AIDS.

CPG membership was designed to include representatives from hard-hit communities through recruitment that reflected the demographics of affected and at-risk populations and scientific and

[1]Institute on Urban Health Research, Bouvé College of Health Sciences, Northeastern University, Boston, MA.

[2]The George Washington University, School of Public Health and Health Services, Department of Prevention and Community Health, Washington, DC.

[3]HIV/AIDS Bureau, Massachusetts Department of Public Health, Boston, MA.

[4]Present address: Capacities, Watertown, MA.

[5]Present address: Harvard School of Public Health, Boston, MA.

[6]Correspondence should be directed to Hortensia Amaro, Institute on Urban Health Research, Northeastern University, 360 Huntington Ave., Stearns 503, Boston, MA 02115; e-mail: h.amaro@neu.edu.

other experts who could address complex technical issues and assist in data interpretation. CPGs were required to develop this plan using guidelines that emphasized formulation of HIV prevention strategies and interventions with a strong basis in behavioral and social science, wherein program planning begins with an accurate epidemiological assessment of the current and projected epidemic (Valdiserri *et al.*, 1997). Under these conditions, successful priority setting requires CPG members to have an operating knowledge of "what works" in HIV prevention, the ability to interpret behavioral findings, integrate information from numerous sources, and simultaneously consider documented need, effectiveness, cost effectiveness, theoretical basis, and community norms/values. The end product of the process would be a Comprehensive HIV Prevention Plan that provides the jurisdiction's justification for federal HIV prevention funding.

The ability to fulfill CDC guidance depends on how CPGs carry out decision-making responsibilities. Studies of the first years of community planning suggest there was confusion regarding CPG member roles and responsibilities, types of data needed for decision-making, and the complexity of tasks CPG members were to implement (Dearing *et al.*, 1998; Schietinger *et al.*, 1995). Furthermore, inclusion of diverse constituencies meant that CPG members brought varying capacities and skills to the group as well as differing assumptions about the HIV epidemic, a multifaceted variation among members that often led to tension and distrust between evidence-based and values-based approaches to decision-making (Dearing *et al.*, 1998; NASTAD, 1996). In a study of CPG members' use of data, Collins and Frank (1996) found that lack of data-based planning resulted in lack of data support for many recommendations in CPG prevention plans, suggesting the need to explore why this might be so and what might be done to improve use of data. Thus, although there are substantial epidemiological data and there is evidence on effective prevention strategies (Boston University School of Public Health & HIV/AIDS Bureau, MDPH, 1999; CDC, 1999), questions remain as to whether and how CPGs use such behavioral research data in decision-making.

Research on decision-making involves various disciplines and encompasses a wide variety of topics including decision rules, mathematical models of decision-making, and situational influences on decision makers. Group decision-making, as in the case of CPGs, is shaped as much by interactions among members as it is by individual members (Sayles, 1964). Three sets of factors that influence group decision-making processes and outcomes are particularly relevant to understanding the CPG decision-making process and use of data: member characteristics, group structure, and availability and quality of data inputs (Campion *et al.*, 1993; McGuire, 1981).

Member Characteristics

Group decisions can be affected by overall group composition, individual member skills, and understanding of tasks and roles. Even in settings with strong leadership, cohesive group structure, clear tasks and member roles, and availability of high-quality data, decisions made by CPG members may not be optimal due to lack of representation or limitations in individual abilities or skills related to data use and interpretation for planning purposes. Limited representation and participation of community members or limited means for assuring community representation and participation were both notable critiques of government-sponsored planning efforts resembling HIV prevention community planning (Amaro *et al.*, 1999; Bloom, 1984; Cox and Garvin, 1974; Gans, 1973; Moynihan, 1969; Rapapport, 1977).

Group Structure

Group structure is used to reflect CPG organizational structure, decision-making processes, group climate, and cohesion and leadership characteristics, all of which can influence decision-making (CDC, 1997, 1998; Dearing *et al.*, 1998). Because community planning is complex and needs vary by jurisdiction, CDC guidance avoided specificity to enable jurisdictions to develop CPG structures and HIV Prevention Plans specific to their needs (Academy for Educational Development AED, 1994; CDC, 1997, 1998). The CDC guidance assumes that resulting structures and decisions have a consistent, transparent structure and adequate staffing for labor-intensive data gathering and deliberation (AED, 1996; Dearing *et al.*, 1998). Early evaluations of the CPG planning process cited lack of specificity in guidance and complexity of decision-making tasks as impediments to the efficiency of the community planning process (Dearing *et al.*, 1998).

Data Inputs

The quality, quantity, periodicity, and mechanism of exposure to data are "inputs" that influence how groups absorb and use data (Bertrand *et al.*, 1993). Factors that influence acceptance and use of data include trust in the provider of information, presenters' cues to action, quality of data delivery, and match between technical level of presentation and audience skill in using information (Collins and Frank, 1996; McGuire, 1981). In addition, it has been established that the more recent the exposure and the more frequent the repetition of exposure, the greater the use of data in decision-making (Dennis, 1996). Verbal cues and the way in which a decision task is framed also strongly influence which data inputs are used (El-Shinnawy and Vinze, 1998). When data are sparse or poorly linked to decision-making tasks, people often substitute personal values, intuition, and decision-making short cuts (Bennett, 1998; Tversky and Kahneman, 1974).

This study focuses on the Massachusetts HIV Prevention Planning Group (MPPG), which is a statewide body comprised of individuals from at-risk communities, HIV service providers, staff from the state Department of Public Health (MDPH) HIV/AIDS Bureau and other state agencies, and scientific experts. The three factors noted above were used to assess decision-making in the MPPG with three goals: (1) to describe group decision-making—in particular how data are used and how satisfied members are with group decisions and the decision-making process, (2) to identify factors that may influence use of data in decision-making, as well as members' satisfaction with group decisions and processes, and (3) to inform development of tools to help members utilize data more effectively and remediate group structure and process.

METHODS

Study Context

During the study's first year, the full MPPG membership met monthly. Each meeting generally included a morning plenary session and afternoon working groups of about 10 members each, organized around a Steering Committee (SC) comprised of the three-member Leadership Council (co-chairs who took turns chairing the meetings), the chairs of each of the committees, and several elected at-large members. The SC set policy, developed the monthly meeting agenda, approved documents including research and evaluation plans, selected members, and interacted with the MDPH HIV/AIDS Bureau.

Research Design and Assessment Methods

A baseline assessment study was done May to October 2000 using multiple methods as described below. Initial informed consent forms were sent to the Boston University Institutional Review Board (BUIRB) for approval. BUIRB granted exemption for this research after reviewing the application materials because group members were public officials. However, informed consent procedures were still used despite the exemption.

In-depth Exploratory Interviews

Nineteen MPPG members (43%) gave in-depth interviews. During selection for interviews, members were stratified by attendance at nine meetings (May 1999–March 2000) as poor (<5 meetings), fair (6), good (7–8), or excellent (all 9 meetings) based on records. Members were randomly selected from each category (84% response rate). The interview sample generally mirrored the larger membership (four new, eight intermediate, seven long-term members; nine men, ten women; eight white, eleven persons of color [primarily African American/Black and Latino]). Oral informed consent was obtained. Interviews were audio-recorded, transcribed in full, and reviewed for accuracy with any alterations necessary to assure participant confidentiality. Semi-structured, open-ended questions explored attitudes toward data, presentations, leadership, group and member roles, satisfaction with group process and decisions, and reported use of data in past and hypothetical decisions. Interviews lasted 1.5–2.5 hr and were conducted mainly at participants' workplaces by one trained interviewer. The interviewer reviewed and coded all transcripts using a codebook with clearly defined inclusion and exclusion criteria. Content analysis was facilitated by use of N.Vivo (QSR N. Vivo, 1999), a qualitative data analysis software package. Interview results were used to guide the content of written surveys.

Member Survey

A baseline survey was given at a general MPPG meeting in September 2000. Guests and MDPH staff were asked to leave during administration of the survey. Half of the MPPG members completed surveys at the meeting, while the members who did not attend were sent copies. Informed consent was read to members at the meeting, and similar content was in the survey cover letter. Ninety-four percent of then-current members (31 of 33) completed the survey; 13% were new members (1 year or less), 56% were intermediate-term members (2–3 years), and 32% were long-term members (4–6 years). Seventy percent were HIV prevention/treatment service providers, 16% represented governmental agencies (e.g., Department of Education, Department of Mental Health), and 13% were consumers of HIV-related services. MPPG members were highly educated: 65%, Masters or Doctoral degree; 19%, Bachelor's degree; 16%, not more than some college education. Racial/ethnic backgrounds were diverse: White-Non Hispanic (52%), African-American (28%), Latino/Hispanic (18%), and Asian (3%). Equal numbers of men and women participated.

The survey was based on literature and interview findings and was pre-tested in July 2000. The member characteristics that were measured were age, gender, education, and MPPG-relevant data such as member type (consumer, provider, etc.), length of membership, number of meetings attended, and committee membership. Members rated knowledge and skills in 13 areas using a scale from 1 = *none* to 4 = *extensive*. Two summary indexes, of *Intervention-related Knowledge and Skills* (7 items, Cronbach's $\alpha = 0.72$) and *Population-related Knowledge and Skills* (6 items, Cronbach's $\alpha = 0.89$), were created using the mean of those items. Members' confidence in their ability to participate fully without reprisal was measured by 6 items each rated on a scale from 1 = *strongly disagree* to 5 = *strongly agree*. A *Participation* index was created using the mean of those items (6 items, Cronbach's $\alpha = 0.79$).

Group structure measures including perceptions of decision-making and leadership style used similar Likert-type opinion responses to statements for 12 and 4 items, respectively. The *Decision-Making Structure* index (8 items included after factor analysis, Cronbach's $\alpha = 0.84$) and the *Leadership* index (3 items included after factor analysis, Cronbach's $\alpha = 0.66$), which measure perceptions of decision-making structure and perceptions of leaders' leadership style, respectively, were constructed on the basis of the results of a principal component analysis using SAS V8.1.

Data inputs measured on the survey included member assessment of data presentations with similar opinion responses to 8 items and rated satisfaction with the relevance of data for decision-making, the amount of information presented, the engagement of presentations, adequate amount of time for Q&A, audience participation, the number of lectures, adequate information conveyance from DPH and the usage of the data presented on a scale from 1 = *not at all satisfied* to 5 = *totally satisfied*. The *Presentation index* (8 items, Cronbach's $\alpha = 0.76$) was created to measure members' overall favorable assessment of data presentations using mean responses to those 8 items with reversed score on negative statements.

Reliance on data during decision-making was measured by respondents' indication of which three data sources (of 14) most influenced decision-making in 1999 when prioritizing populations or interventions. Preference on using data was evaluated on the basis of the most influential data sources used in actual decision-making. Scores were averaged from two decisions. High level of preference on using data (score = 3) was defined as follows: participants who considered all objective data sources as the most, the second most, and the third most influential data sources in their decision-making; low level (score = 1): participants who considered personal testimony or experience as the most or the second most influential data sources in their decision-making; middle level (score = 2): those who do not fall into high level or low level categories.

Satisfaction with various aspects of the prevention planning process and with population prioritization and intervention decisions was assessed with a series of Likert-type items (ranging from 1 = *not at all satisfied* to 5 = *totally satisfied*). Three indexes, *Satisfaction with Process* (5 items, Cronbach's $\alpha = 0.88$), *Satisfaction with Decisions* (2 items, Cronbach's $\alpha = 0.73$), and *Satisfaction with Data* (4 items, Cronbach's $\alpha = 0.86$), were created using a principal component analysis.

Analysis of the survey data was conducted by first generating frequencies and descriptive statistics. Pearson Correlation Coefficients were calculated to evaluate correlations among different factors. Analysis of variance (ANOVA) was used to compare the differences of those indexes across three levels of preference on using data in decision-making, as well

as to compare differences among various levels of participant satisfaction with decisions made by the CPG. The Wilcoxon Rank Sum Test was used to compare members' preference on using data in their decision-making across different member status categories (government employee vs. service provider vs. consumer) considering the small sample size.

Directed Observations

Directed observations (DO), as opposed to ethnographic or behavioral observations, use mainly a Q&A format; observers rate, often after the fact, whether or not an event occurred during the interval; a dichotomous choice is made for each question (i.e., Did the speaker promote discussion? Yes/No), and this single rating is made across an entire observation interval (rather than observing the frequency of events during an interval). Directed observations are more subjective than behavioral observations, yet more structured than ethnographic observations, and they are most commonly used in the service-provision context.

Two instruments were created to rate the quality of (1) *Data Presentations* and (2) *Facilitation* of MPPG discussions at monthly plenary meetings. On the *Data Presentations* instrument, observers noted (Yes = 1 or No = 0) whether research presentations included the following 7 features: (a) research methods, (b) findings, and (c) implications, (d) assessment of methodological rigor, (e) framing of context for presentation, (f) explanation of research jargon, and (g) clear charts and AV materials. *Facilitation* was measured (Yes = 1 or No = 0) through the following seven areas: (a) discussion or resolution of content areas, (b) provision of cues to action, (c) prompting of discussion, (d) inclusion of members, (e) adherence to agenda and rules, (f) management of tangents, and (g) neutrality of communications. On the basis of the presence and absence of those features listed above, two composite indexes (range 1–7, with 7 = all "yes" ratings), *Data Presentations* index and *Facilitation* index, were created by summarizing scores from those features and used to summarize the quality of (1) data presentations and (2) facilitation in the meetings, respectively. Scores for each instrument were tallied by observers and compared across observer pairs to assess inter-rater reliability; 83% of the summary scores between observers were within one point of each other (e.g., range = 1–7).

Researchers observed all five MPPG plenary meetings (i.e., the full group sessions that generally occurred during the morning of each full-day meeting) held between May 2000 and October 2000 and the seven data presentations at these meetings. Observers were non-participatory, and continuous monitoring recording methods were used (Adler and Adler, 1994; Bernard and Russell, 2002; Gold, 1958). Meetings were also videotaped for later review for the observer to check ratings when questions emerged. At least two, often three, researchers observed meetings to reduce observation bias. Observers sat apart from the meeting group where they were able to observe and record the meeting proceedings (e.g., in a corner or at the back of the room). Meeting content, presentation content, decisions, and decision-making mechanisms were analyzed.

Archival Review

MPPG minutes and agendas for two years (23 monthly meetings, June 1998–September 2000) were reviewed to determine amount and types of data presented for decision-making, member training on data use, and group decisions relevant to the HIV prevention community planning process. The number and time spent on *Data Exposures* were tallied and included oral presentations on research, disease surveillance, reviews of state expenditures, and other data. *Trainings* were defined as all agenda items designed to build skills, including policy and prevention arenas, and presentations orienting members to MDPH goals and strategy.

The frequency and timing of data exposures, decisions made, and the interim time lag between data presentations and decisions were quantified. *Data Exposure* was measured two ways: (1) total number of data presentations per year, and (2) total number of exposures as a function of total meeting time. The average number of exposures to data per meeting per year was calculated by summing exposures and dividing by the number of meetings per year. To better appreciate the intensity of exposure, we also measured the length of data presentations using the proxy measure of agenda minutes allocated. *Trainings* were defined as all agenda items designed to build skills, including policy and prevention arenas, and presentations orienting members to MDPH goals and strategy. *Group Decisions* to be made annually were

(1) the prioritization of populations most affected by HIV/AIDS for funding, (2) the prioritization of interventions deemed most effective for prioritized populations, and (3) annual concurrence with the HIV/AIDS Bureau's "Cooperative Agreement" for federal funding, (i.e., a determination whether it adequately reflected or adhered to MPPG-generated priorities and strategies).

RESULTS

Member Characteristics

In-Depth Exploratory Interviews

Thirteen of the nineteen interview participants identified acquisition of professional knowledge and an opportunity to network as rewards of membership. Work complications ($n = 4$), poor health ($n = 3$), and transportation ($n = 2$) were identified as obstacles to attendance of monthly meetings.

Member Survey

MPPG members were asked to rate their knowledge and skills in various arenas relevant to prevention planning (Table I). While it is difficult to determine member skills based on self-reports, we can glean some insight into members' perceptions of their strengths and deficits. Most CPG members

reported moderate to extensive knowledge about behavioral risk factors, racial and economic disparities, various types of interventions, how to select effective interventions, and basic public health principles. Certain public health knowledge and skills important to prevention planning were less complete. For example, fewer members reported being knowledgeable about intervention cost-effectiveness, judging the quality of evaluation findings, statewide resource allocations, or provider best practices, suggesting some very important and specific gaps in information and, consequently, in CPG training needs.

With regard to their participation (Table II), most members responding to the survey felt MPPG participation was "worth missing a day of usual responsibilities," that they "understand parliamentary procedure enough to actively participate," were free to vote without pressure from others, and that (if a provider) their agency benefited from their participation.

Archival Review

According to the review of meeting minutes, an average of 53% of members attended meetings during the period from January to September 2000.

Archival data were consulted to evaluate the degree to which training was provided to the group during monthly meetings. In 1998, 20% of meeting time was allocated to training and orientation for members. During 1999–2000, training fell to 6–7%. Because some training occurred off-site and certain

Table I. Self-Reported Knowledge and Skills ($n = 31$)

	None/very little % (n)	Some % (n)	Moderate % (n)	Extensive % (n)
Intervention-related knowledge and skills				
Intervention types	10 (3)	10 (3)	52 (15)	28 (8)
Successful interventions	0 (0)	38 (9)	50 (12)	13 (3)
Unsuccessful interventions	16 (4)	48 (12)	32 (8)	4 (1)
Intervention cost-effectiveness	21 (5)	63 (15)	17 (4)	0 (0)
Provider best practices	8 (2)	44 (11)	48 (12)	0 (0)
How to select effective interventions	3 (1)	24 (7)	48 (14)	24 (7)
Judge evaluation findings	16 (4)	44 (11)	24 (6)	16 (4)
Public health knowledge and skills				
Basic principles of public health	10 (3)	18 (5)	36 (10)	36 (10)
Current statewide allocation of resources	0 (0)	60 (15)	32 (8)	8 (2)
Behavioral theories (e.g., stages of change)	0 (0)	32 (8)	32 (8)	36 (9)
Poverty and racism in different communities	4 (1)	12 (3)	63 (15)	21 (5)
Specific knowledge, attitudes, and behaviors that may lead to risk-taking in each population	0 (0)	16 (4)	52 (13)	32 (5)
How to use scientific data	7 (2)	28 (8)	34 (10)	31 (9)

Table II. Participation, Perceptions of CPG Roles, Decision-Making Processes, and Leadership ($n = 31$)

	Disagree % (*n*)	Neither disagree nor agree % (*n*)	Agree % (*n*)
Participation			
Understand parliamentary procedures enough to actively participate	10 (3)	6 (2)	80 (24)
Free to vote without pressure from others	17 (5)	3 (1)	79 (23)
Trust colleagues will vote without regard to conflicts of interest	38 (11)	35 (10)	28 (8)
Participation is worth missing a day of usual responsibilities	0 (0)	14 (4)	86 (25)
Agency benefits from participation	10 (2)	20 (4)	70 (14)
Agency does not support my attendance	85 (17)	10 (2)	5 (1)
CPG roles			
Member role to consider needs of all affected communities	0 (0)	0 (0)	100 (31)
Member role to advocate for own community	36 (10)	18 (5)	46 (13)
Concurrence process "driven" by MDPH, and MPPG is a "rubber stamp"	29 (7)	21 (5)	50 (12)
Concurrence process "driven" by MPPG	54 (13)	17 (4)	29 (7)
Members lack a sense of ownership in MPPG decisions	38 (11)	14 (4)	48 (14)
MDPH follows MPPG recommendations	55 (16)	24 (7)	21 (6)
CDC "listens to" MPPG	15 (4)	50 (13)	35 (9)
CDC will not send funds even if MPPG does not concur	75 (18)	21 (5)	4 (1)
Decision-making rules and procedures			
Structured and systematic process for decision-making	23 (7)	37 (11)	40 (12)
Parliamentary procedures exist and usually followed	14 (4)	31 (9)	55 (16)
No clear mechanism to obtain information and data for decision-making	57 (17)	13 (4)	30 (9)
So much conflict, hardly seems worthwhile	38 (11)	10 (3)	52 (15)
Lot of stress around decision-making	17 (5)	23 (7)	60 (18)
Leadership			
Leaders (co-chairs and coordinator) encourage different opinions	21 (6)	21 (6)	59 (17)
Leaders emphasize importance of making data-driven decisions	10 (3)	28 (8)	62 (18)
Leaders state their opinions in a forceful manner	34 (10)	25 (7)	41 (12)
Leaders encourage member participation in all decision-making	28 (8)	17 (5)	55 (16)

committees may have received special training specific to their work, this review may have underestimated the training available to at least some members.

Group Structure and Processes

In-Depth Exploratory Interviews

During in-depth interviews, nearly everyone (18 of 19; 95%) described the MPPG purpose as "to help DPH plan prevention, based on trends and statistics and things like that, that we're presented with." Of the 19 participants, 10 (53% total; 58% of service providers and 43% of government employees) named scientific evidence as a core component of prevention planning and viewed data provision as an MDPH responsi-

bility. Six participants (31% total; 33% of service providers and 29% of government employees) also spoke of the lower credibility of testimonial statements.

The MPPG's scope of influence on state MDPH planning was fairly consistently described by those interviewed as "advisory" with language such as "supporting" or "informing." However, four members indicated the MPPG was limited to "rubber stamping" MDPH priorities and were displeased by this power distribution. One member went further and said "I think that in order for the Department of Public Health to receive the "*x*" amount of millions of dollars they receive from the Feds, they are mandated to have a planning group, thus they do. I think they [MDPH] consider us [MPPG] a pain in the ass." Six members vocalized a desire for greater responsibility and scope of influence with comments such as "If we can speak publicly, as in

press conferences, as in position papers, we can have much more of an impact than just sort of, 'yeah, we agree with DPH that this is the population that's number one.'"

All 16 of the interviewees who were not government representatives described their role as "conduits of information" or "voices" that represented their community and provided information or advice to MDPH on community risk and "effective" programming. In the words of one member, "I try to participate in everything and to pass ideas, telling them what works better in my community, and my experience in the field. That's pretty much it. And also, a voice when money is going to be distributed, there to say, 'Oh, Community Z needs ....'" Likewise, CPG members bring information learned at meetings, perhaps about drug trials and funding initiatives, back to the "community;" that is, back to their local community-based agencies, colleagues and friends.

Thirteen interviewees (68%) spoke about the inherent contradictions of CPG membership—more specifically, being invited to serve as members to represent specifically affected communities while also being asked to consider and vote upon statewide priorities, which ultimately could affect funding of the agencies employing 70% of the members. Some felt they were able to balance the tensions of community representation and state needs, but worried that other members were not able to do this. Six members spoke about the lower credibility of testimonial statements by members whom they perceived as only advocating for their communities.

When asked who has the most influence on decisions at meetings or the "biggest voice," 13 interview respondents (68%) answered MDPH or MDPH staff. When asked who has the "smallest voice" or least influence in decisions, members named several types of marginalized groups such as ethnic and linguistic minorities ($n = 3$), consumers such as HIV positive members ($n = 3$), or new members ($n = 2$). Some interviewees indicated that they were not invited to participate fully in all decision-making; however, this was not the majority opinion.

Seven of nineteen interviewees (37%) spontaneously addressed group size and felt quite strongly that the MPPG was too big. Large groups were perceived as rushed ($n = 5$) due to "competition for speaking out," yet valuable ($n = 3$) because they offered room for "more opinions" and included a diversity of perspectives. Four interviewees believed smaller groups were more efficient because all present can participate, consider, and discuss each issue thoroughly.

The 1999 population prioritization followed an unusual course. The members had agreed, through consensus, that adolescents were the highest priority population; however, in the CDC Cooperative Agreement, the MDPH re-assigned adolescents to a lesser priority. Although MDPH provided an oral and written justification for this adjustment, based on surveillance and resource allocations focused on youth, some MPPG members felt impotent (or powerless) as a result. Subsequently, the group voted to offer qualified concurrence with the state application for federal funds, rather than the full concurrence that had been given in the past.

In response to interview questions about the 1999 decision-making process, about half of the interviewees recalled being frustrated by actions taken by the MDPH. In the words of one interviewee, "I thought that our opinion was important, that work we did was important, but I guess it wasn't. The trustworthiness was broken, so after that, I just started feeling different about the MPPG, cause I didn't have a full understanding of what happened. Other members indicated that they later believed the task was a set up for failure, that a lack of full explanation [by MDPH], including full disclosure about final decision-making power in such situations, was problematic and lacked transparency. If people know, as one member stated, "there's a reason for things being done the way they're done" then they might not have felt that "nothing we [the CPG] do really matters." Another member suggested a more pervasive problem: "...this history of incidents of false entitlement. It's like I'm [referring to DPH] telling you [referring to the CPG], you've got all this authority, you've got this power, [whereas in reality] you got that as long as I agree with your decisions." Disempowerment was a consequence. According to one member, the result was "people feeling like they didn't really inform the process, that DPH had already selected their priority populations and was just going through some motions with the planning group." Advance clarity would have been preferred. For example, one member suggested that the decision "should have been sort of set up differently... framed as 'We have to secure the funding; CDC is looking for X, Y, Z. What gets written in [into the cooperative agreement] may not make everyone in the room happy.'"

Member Survey

Survey findings indicated that members saw themselves as having a limited role and perceived lack of power and control in major decision-making (Table II). About half of the MPPG members did not believe that MDPH followed CPG recommendations, and nearly half expressed a lack of ownership in decisions. Members were split in their opinions regarding whether the concurrence process was being driven by the MDPH or the MPPG; half of the members believed the concurrence process was driven by MDPH and agreed that "the MPPG is a rubber stamp," and less than one third felt that the concurrence process was driven by the MPPG. Most members felt that CDC would send funding to the state regardless of whether or not the MPPG concurred.

Although all survey respondents said their job was to consider the needs of all affected communities, nearly half also said that a member's role was to advocate for her/his community (Table II). Consistent with interview data, less than a third agreed that "colleagues will vote without regard to potential conflicts of interest" and almost one third of survey respondents disagreed. Nearly half of members were dissatisfied with the "impartiality of other members." In spite of role conflicts, over two thirds of service providers felt that the way they voted would not result in a negative consequence for themselves or for their agency.

Survey respondents' perceptions of MPPG leadership (Table II) were largely favorable with regard to encouraging diverse opinions, use of behavioral data, and member participation in decision-making. However, close to half of members reported that co-chairs stated their "opinions in a forceful manner," providing a third framework of evidence for a less neutral, and more persuasive leadership style (e.g., leading members in a certain direction, stating too strong an opinion as to what CPG priorities should be, etc.). On the survey, a majority expressed preference for the efficiencies afforded by working in smaller working groups or committees.

The majority of survey respondents (Table II) agreed that "parliamentary procedures exist and are usually followed." Fewer than half of members agreed that "there is a highly structured and systematic process for decision-making." Nearly one third felt there were no clear mechanisms for requesting data and information needed for decision-making. Furthermore, just over half of the survey respondents agreed that there was "a lot of stress around decision-making" and nearly two thirds agreed there was "so much conflict, it hardly seems worthwhile."

Survey respondents' ratings of satisfaction with CPG prevention planning are presented in Table III. Although over half of respondents expressed satisfaction with the overall work of the MPPG, many members expressed dissatisfaction with specific issues such as the amount of time spent on overall prevention and intervention planning, the lack of efficiency of full group discussions, and the lack of impartiality of other members. With regard to satisfaction with the decisions themselves, nearly two thirds of members reported satisfaction with

Table III. Satisfaction with Decision-Making Process, Decisions, and Data ($n = 31$)

	Dissatisfied % (n)	Neither dissatisfied nor satisfied % (n)	Satisfied % (n)
Satisfaction with decision-making process			
Overall work of the MPPG	24 (7)	17 (5)	59 (17)
Amount of time spent on prevention planning	60 (18)	20 (6)	20 (6)
Time spent on intervention planning	43 (13)	23 (7)	33 (10)
Efficiency of full group discussion	43 (13)	23 (7)	33 (10)
Efficiency of working groups and committees	23 (7)	20 (6)	57 (17)
Impartiality of other members	41 (12)	28 (8)	31 (9)
Satisfaction with decisions			
Population prioritization	21 (6)	14 (4)	65 (19)
Intervention prioritization	19 (5)	37 (10)	44 (12)
Satisfaction with data			
Amount of data available for decision-making	21 (6)	17 (5)	62 (18)
Completeness of data available for decision-making	20 (6)	20 (6)	60 (18)
Quality of data available for decision-making	10 (3)	30 (9)	60 (18)
Utility of data available for decision-making	7 (2)	33 (10)	60 (18)

the populations prioritized in 1999, while satisfaction with the interventions prioritized was somewhat lower.

Directed Observations

Observations of the November member recruitment meetings and December 2000 member orientation noted an absence of guidance provided by the co-chairs or the group coordinator on balancing these conflicts. Data from observations suggested that CPG leadership did a fairly good job of group facilitation (i.e., by managing discussions and keeping the group on-task), but were less adept at maintaining neutrality or facilitating healthy dissention. Observer facilitation scores ranged between 5 and 7 (highest score = 7), with an average score of 6, meaning that co-chairs promoted and managed discussions well and kept the CPG on task. Scores measuring neutrality versus persuasiveness, or facilitating healthy dissention were rated lower by observers; that is, co-chairs pushed their own personal opinions and did not always present both sides of issues as mandated in the MPPG policy manual.

Observers noted that the decision-making rules and process varied considerably. During the first five meetings observed, decisions were made by consensus once, modified parliamentary procedures (i.e., Roberts' Rules of Order) once; special rules twice (e.g., barring discussion), and by secret ballot vote once.

Perhaps a reflection of continued frustrations or a carry-over from the previous year, observers of the meeting in which the 2000 annual concurrence decision was made—the single largest decision-making responsibility of the MPPG—noted little interest among members in reviewing the Cooperative Agreement; that is, member comments and questions were few, and most members present acknowledged having only skimmed and not read thoughtfully the 50-page document. Moreover, the CPG coordinator stated that she received no written feedback on the document from MPPG members during a 1–2-week review period. Furthermore, when offered the opportunity to review the Cooperative Agreement, none of the six members present at that meeting expressed interest in doing so.

Archival Review

According to the archival review of meeting agendas and minutes, the MPPG, as a full group, had few decision-making opportunities. Only six HIV-related decisions—three decisions per year—were made by the MPPG from July 1998 through September 2000, a period containing 23 monthly meetings (13% of monthly meetings). Decisions made were (1) prioritization of populations most affected by HIV/AIDS for funding (in 1999), (2) prioritization of interventions deemed most effective for prioritized populations (in 2000), and (3) annual concurrence with the HIV/AIDS Bureau's "Cooperative Agreement" for federal funding, (i.e., a determination whether it adequately reflected or adhered to MPPG-generated priorities and strategies).

Data Inputs

Presentations to the MPPG are the primary vehicle for exposure to data. MDPH staff arrange for presentations of data. These are primarily data collected through the department; AIDS/HIV and STD surveillance, behavioral risk factor surveillance, C&T and prevention program and service delivery data. Research contractors, who could be academically affiliated or affiliated with not-for-profit or for-profit firms, conduct needs assessment and program evaluation studies as advised by the MPPG and MDPH and make regular presentations of findings to the MPPG.

In-Depth Exploratory Interviews

Ten of nineteen members interviewed (53%) described the quality of data brought to the group as generally "good," but expressed several concerns about the completeness of HIV/AIDS surveillance data. Eight interviewees stated that surveillance data were not presented uniformly for all populations, but acknowledged that some data are "hard-to-collect," and, hence, some populations are under-researched (e.g., transgenders, young injection drug users, young men who have sex with men). Others mentioned problems with the data forms that providers complete; the "other" ethnic category lumps racially/ethnically heterogeneous people, and some providers tend to misclassify clients' ethnicity. One participant felt it was unfair to base the population prioritization decision primarily on AIDS surveillance data when HIV impact and risk were most likely to be under-estimated among populations that are affected but are unlikely to seek screening tests and health care.

A number of interview participants also challenged research contractors' independence from

MDPH, as well as adherence by contractors to MPPG priorities and selection of research topics. Five interview participants (26%) reported a high level of trust in the completeness of data provided by MDPH, but twice that number (10, 53%) indicated a belief that data were selected or omitted for presentation to support the interests of MDPH.

Interviewees were divided on whether the MPPG was exposed to the right amount of data ($n = 5$) or too much ($n = 9$). Those who described the amount as being too much felt that the group was unable to process the amount of material presented and that the amount of material truncated crucial discussion time. Nine interviewees (47%) expressed concern that the technical level of presentations was too complex for other members, yet only two spoke of their own challenges in comprehension of data. When asked to describe what makes a great presentation, five interviewees named a dynamic speaker and the use of anecdotes to illustrate presentations of quantitative data.

When asked to indicate their preference for data or experience in hypothetical decision-making situations and to articulate their rationale, 13 of 19 interview participants (68%) indicated preferences for data, primarily because data represent the experiences of many individuals. Ten interviewees (53%) expressed the importance of sharing experiences within meetings, often specifically to point out "holes in the data." Anecdotes were perceived as useful to compensate for gaps in available research.

Member Survey

The majority of survey respondents were satisfied with the amount, completeness, quality, and utility of data available for decision-making (Table III); however, ratings on various aspects of data presentations echo concerns expressed in interviews (Table IV). Although most survey respondents agreed that the relevance of data presentations to planning was clear, their assessments of the quality of data presentations varied (Table IV). Most notably, over half of the CPG members surveyed felt that too much information was presented at one time and that there was not enough time for Q&A following each presentation. Between one fifth and one third of the members felt that there was not enough time for member discussion of findings afterward, that audience participation was limited, that nothing gets done with the data after presentation, that too many of the presentations were lectures, and that the presentations were usually boring. Survey findings also confirmed interviewee concerns about trustworthiness of data sources—a sizable proportion of survey respondents endorsed the opinion that MDPH "presents what they want us [the CPG] to see."

When surveyed about their desires for additional information to aid in future population and intervention prioritization decisions, members most often named the following: (1) HIV surveillance data (24%), (2) evaluation data on program effectiveness (20%), and (3) behavioral risk factor data (18%). For decisions about which intervention strategies to prioritize, members expressed a desire for additional data on (1) evaluations of prevention programs (33%), (2) program/service delivery effectiveness (22%), and (3) surveillance (20%). Behavioral risk factor data (12%) and theory and published research on effective interventions (11%) were less frequently mentioned future needs. Absent from member preferences for intervention prioritization were needs assessment-related information, cost-effectiveness studies, gap analysis (mandated studies of how needs are unmet by current services), and current DPH resource allocations. Experiential data (e.g., personal experience, testimony of others, and program and service delivery data from providers) was mentioned by 15%

Table IV. Assessment of Data Presentations ($n = 31$)

Aspect of data presentations	Disagree % (n)	Neither disagree nor agree % (n)	Agree % (n)
Relevance of data to planning is clear	14 (4)	17 (5)	69 (20)
Too much information is presented at one time	34 (10)	7 (2)	59 (17)
Presentations are not usually boring	21 (6)	24 (7)	55 (16)
Not enough time for Q&A afterward	31 (9)	17 (5)	52 (15)
Too little audience participation	54 (15)	14 (4)	32 (9)
Too many lectures	51 (15)	24 (7)	24 (7)
DPH presents what they want us to see	45 (13)	14 (4)	41 (12)
Nothing gets done with the data afterward	45 (13)	28 (8)	28 (8)

Table V. Information Relied on: Members Reporting These Sources of Information Among Three Most Influential in 1999 Population and Intervention Prioritization Decisions ($n = 31$)

Type of information	Population prioritization % (n)	Intervention prioritization % (n)
Data		
Behavioral risk data (prevalence of risk behaviors)	20 (11)	10 (5)
AIDS surveillance data (AIDS cases)	16 (9)	8 (4)
Gap analysis (gaps in allocation of resources for various populations)	16 (9)	4 (2)
HIV surveillance data (HIV prevalence)	9 (5)	4 (2)
Needs assessment data	7 (4)	10 (5)
STD surveillance data (STD incidence and prevalence)	4 (2)	4 (2)
Theory and published research on effective interventions	4 (2)	14 (7)
Evaluation data on program/service effectiveness	2 (1)	18 (9)
Current DPH funding and resource allocation by population and funding	0 (0)	8 (4)
Census data	0 (0)	0 (0)
Cost-effectiveness data on programs/services	0 (0)	0 (0)
Experience		
My own experience and knowledge of the needs of the communities I work with	20 (11)	14 (7)
Program and service delivery data from providers	2 (1)	4 (2)
Personal testimony from people who are part of affected communities	2 (1)	2 (1)

of surveyed members as one of the most important sources of information for both types of future decisions.

When survey respondents identified sources of information that had the greatest influence on their population and intervention prioritization decisions (Table V), they most often cited behavioral risk-factor data, personal experience and knowledge of affected constituency, AIDS surveillance data, and gap analysis data. The sources of information that were most influential in the 1999 intervention prioritization were varied and ranged from personal experience to published research on effective interventions. No members who reported inclusion of experiential data in their decision-making relied entirely on experience. When all data- and experience-based sources were combined, data-based sources were reported to have the greatest influence.

To assess decision-making factors associated with degree of reliance on data for decision-making, we compared respondents whose rankings on types of data they used indicated high, medium, and low levels of use of analysis of variance (ANOVA). High level of reliance on objective data sources was significantly associated with quality of data presenta-

tions ($p < 0.001$), satisfaction with data ($p < 0.02$), and perception of the MPPG decision-making structure ($p < 0.05$).

Table VI shows correlations among decision-making factors and reliance on data. Reliance on data was associated with more positive ratings on measures of group structure (perceptions of decision-making and leadership) and data inputs (assessment of presentations, satisfaction with data and the planning process). There was no statistically significant association between member type, knowledge and skills, and participation and reliance on data. It is, however, important to note that both member knowledge/skills indices were positively associated with assessment of data presentations, which in turn was associated with reliance on data in decision-making. Members who were government employees rated their knowledge of public health significantly higher than did consumers ($p < 0.02$). Dissatisfaction with decision-making was associated with ratings of the leadership, MPPG structure, and quality of data presentations.

Directed Observations

Observers rated the quality of data presentations as a variable. Notably, presenters often failed

Table VI. Correlations Among Decision-Making Factors ($n = 31$)

Pearson correlation coefficients (p value)	Public health knowledge and skill index	Participation index	Structure index	Leadership index	Satisfaction with process index	Satisfaction with decision index	Presentation index	Satisfaction with data index	Reliance on data use
Intervention-related knowledge & skills	0.77 ($p < 0.01$)	0.11 ($p = 0.57$)	0.14 ($p = 0.46$)	0.29 ($p = 0.12$)	0.08 ($p = 0.69$)	0.29 ($p = 0.12$)	0.50 ($p < 0.01$)	0.14 ($p = 0.47$)	0.17 ($p = 0.38$)
Public health knowledge and skill index	1.0	0.08 ($p = 0.68$)	0.17 ($p = 0.38$)	0.23 ($p = 0.23$)	0.13 ($p = 0.48$)	0.27 ($p = 0.15$)	0.42 ($p = 0.02$)	0.25 ($p = 0.19$)	0.11 ($p = 0.55$)
Participation index		1.0	0.09 ($p = 0.64$)	0.63 ($p < 0.01$)	0.17 ($p = 0.48$)	0.18 ($p = 0.35$)	0.21 ($p = 0.26$)	0.08 ($p = 0.69$)	0.05 ($p = 0.78$)
Structure index			1.0	0.57 ($p < 0.01$)	0.46 ($p = 0.01$)	0.65 ($p < 0.01$)	0.50 ($p < 0.01$)	0.68 ($p < 0.01$)	0.45 ($p = 0.01$)
Leadership index				1.0	0.33 ($p = 0.07$)	0.54 ($p < 0.01$)	0.52 ($p = 0.01$)	0.47 ($p = 0.01$)	0.36 ($p = 0.05$)
Satisfaction with process index					1.0	0.20 ($p = 0.29$)	0.47 ($p < 0.01$)	0.58 ($p < 0.01$)	0.34 ($p = 0.07$)
Satisfaction with decision index						1.0	0.36 ($p = 0.05$)	0.30 ($p = 0.10$)	0.12 ($p = 0.51$)
Presentation index							1.0	0.47 ($p = 0.01$)	0.59 ($p < 0.01$)
Satisfaction with data index								1.0	0.51 ($p < 0.01$)

to share information about the research methods that would be necessary for an audience to assess the validity and applicability of the findings. For example, although 88% of the time presenters stated results, they articulated the research questions only 50% of the time, described the research design 38% of the time, and explained methods of data collection 38% of the time.

Archival Review

Across a 23-month period, 23 data presentations were made: six presentations of program delivery data; three presentations each of evaluation data, published research and theory, and HIV surveillance (9 total); two presentations each of behavioral data and needs assessment data (4 total); and one presentation each of STD surveillance data, AIDS cases, gap analysis, and personal testimony (4 total). During this assessment interval, seven data presentations were observed, which included behavioral data related to HIV surveillance, needle exchange programs, women's interventions, and physician knowledge, attitudes/beliefs, and practices (KABP).

Thus, an average of one data presentation per meeting occurred across the study interval. The average number per year varied from 1.00/meeting in 1998, to 0.64/meeting in 1999, to 1.38/meeting in 2000. Yet, the average total data presentation time, calculated as a percentage of total meeting time, declined over the same period from 92 min (26% of meeting time) in 1998 to 45 min per meeting (12% of meeting time) in 1999 and 2000. This decline was due in part to changes in format of data presentations from plenary sessions to smaller workgroup meetings, with the latter not included in the observations. Although real time allocation was not identical to agenda allocation, independent observations at several meetings suggested that the agenda allocation was not grossly inaccurate, but, rather, represented a conservative assessment of data presentation exposures. Finally, the average time lapse between data presentations and CPG decision-making was 3 months, with a range of 0–8 months.

DISCUSSION

The purpose of this study was to investigate how MPPG utilizes data in decision-making, to identify factors that might support or interfere with member use of data, and to inform development of tools to improve data use. A multi-method assessment approach was used to explore three critical aspects of MPPG decision-making: member characteristics, group structure, and data inputs.

Findings indicate that membership characteristics were not related to reliance on data in decision-making. However, group structure factors and data inputs were directly related to reliance on data. Most members accepted an advisory role and felt participation was worthwhile. About half were dissatisfied with decision-making processes, citing member conflicts and distrust. Data incompleteness, inadequate presentation quality, and lengthy intervals between presentations and decision-making were identified as deficits. Although most members reported skills with HIV and intervention data, most members also reported deficiencies in interpretation of evaluation and cost-effectiveness studies. Member trust and use of data in decision-making could be improved by clarifying decision-making structures and processes, assuring high-quality data presentations, and supporting or training members to better interpret and use data.

Findings from this baseline study are discussed relative to literature on decision-making, and implications for intervention planning to improve these three aspects are presented.

Factors Affecting Decision-Making

Member Characteristics

Differing CPG member assumptions, skills, and needs, which were often related to member type, can create conflicts. Striking differences exist in worldviews of science professionals and those of people without science-based educations; it is noteworthy that even policy and program planners with research training often have difficulty applying research data to program and policy decisions (Weiss, 1980). AIDS prevention program managers tend to rely primarily on peers, state DPH and CDC recommendations, and least on scientific reports (Goldstein *et al.*, 1998). Inter-member conflicts may be based in differences in ease of data use and on difficulties groups may have in resolving rational versus value-based approaches to defining problems and goals (Meyerson and Banfield, 1955; Rothman, 1974). Some such issues may have contributed to the MPPG climate. Many members saw peers as less willing or skilled at using data. Gaps in member skills in utilizing data reflected in HIV Prevention Plans lacking a data-based

rationale were noted (CDC, 1997; Dearing *et al.*, 1998; Valdiserri *et al.*, 1997). Early difficulties in evaluations of MPPG implementation also included lack of persons with behavioral and social science expertise (CDC, 1998). Others found members' cognitive ability and task knowledge were stronger predictors of better decisions than group climate (Devine, 1999).

Because the intention of the CPG was to include representatives from diverse affected communities plus scientific and technical experts, it is to be expected that, as found here, knowledge and skills in data use and interpretation will vary across types of members. MPPG members reported moderate skill in using different types of data but lacked experience in working with data in areas such as program evaluation and cost-effectiveness studies, both important in prioritizing interventions. This suggests more resources are needed to increase member capacity to use data for such purposes. The brief CPG orientation common in Massachusetts (and possibly elsewhere) is inadequate. Technical assistance should be provided on an ongoing basis to members and people presenting to the group to improve members' understanding of the relevance and utility of presented data.

Although increasing the quality of data presentations, the quantity and type of data, and member skills can be expected to generate improvement, structural changes may be necessary to enhance long-term outcomes. Even though the scope of MPPG influence on statewide prevention planning is limited, increasing the number and depth of members' responsibilities could help community planning move from community approval of MDPH planning toward a truly community-driven process. The MPPG might benefit from increasing representation of people who are not employed in HIV/AIDS prevention-related jobs, who have less education, and who better represent poor, affected communities (Holtgrave, 1994; Schietinger *et al.*, 1995).

Power differentials have an impact on supposedly objective data. The relationship between data and use of data is not simple. All research studies and surveillance systems have limitations. A competent decision-maker consults multiple sources, considers limitations of available data, rank-orders their worth, and makes a reasonably informed decision. Data have limitations in completeness and ease of interpretation (Driskell *et al.*, 1987; Valdiserri *et al.*, 1997; Valdiserri and West, 1994) and public health decisions must often be made without complete data.

Group Structure and Processes

Key findings across assessment methods for structure included perceived role conflicts, limited influence, problems with leadership styles, and lack of clear decision-making processes—all of which contributed to a climate of distrust within the MPPG. CDC guidance suggests members represent the needs and experiences of their communities and simultaneously weigh "objective" data to make decisions for the entire region (AED, 1994). Most members indicated they joined the MPPG to contribute expertise about their communities to the planning process; although they understood a charge to represent broader needs statewide, there were mixed feelings about role duality and worries about peers' acting on self-interests. Unfortunately, "cognitive conflict"—characterized by situations that challenge previous assumptions, confront minority perspectives, or stifle consideration of alternative solutions—can lead to "affective conflict" and contribute to immature or premature decision-making, or "group think" (Devine, 1999; Janis and Mann, 1977; Nel *et al.*, 1996). Trust-building efforts should distinguish between cognitive conflict, which can have benefits because it increases dialogue and consideration of alternative points of view, and affective conflict, which has mainly negative effects through increased hostility or defensiveness (Devine, 1999). In this study, the effect of contradictions in member roles were deemed primarily to be negative. To the extent that mistrust of peers is structurally imbedded in contradictions in member roles, it calls for a structural remedy.

The community planning process should be data-driven, and MPPG co-chairs were perceived as promoting data-driven decisions; however, the leaders were not perceived to be neutral primarily due to their personal affiliations or to be able to facilitate constructive dissent. Competent leaders can promote shared goals and linkages and create a supportive environment for decision-making (Butterfoss *et al.*, 1996). Without this, members may make premature or inadequately informed decisions and feel disenfranchised. The chairperson has the greatest influence on an organization's effectiveness (Vojtecky, 1982), although persuasiveness is tempered by others' perception of potential for personal gain (Yorges *et al.*, 1999). A persuasive leader's promotion of data use may increase evidence-based decision-making (El-Shinnawy and Vinze, 1998) when leaders express neutral opinions (Driskell *et al.*, 1987), encourage

participation, and incorporate opportunities for dissent. Decision-making procedures and balance of power also may have contributed to distrust. Development and maintenance of group structures are difficult even when group climate is favorable (Dearing *et al.*, 1998), as is the need for groups to establish clear rules and delegation of responsibility as a precondition for equity (Cherniss and Deegan, 2000; Roussus and Fawcett, 2000). According to the CPG technical guidance document, the CDC counts on trust and good faith to maintain effective working relationships between CPGs and departments of public health and expects sharing of responsibilities, including determination of CPG duties (AED, 1996). Although MPPG members perceived an advisory role in the HIV prevention planning process, they felt disempowered. Data from interviews, surveys, and observations suggest that CPG leadership did a fairly good job of group facilitation (i.e., by managing discussions and keeping the group on-task), but were less adept at maintaining neutrality or facilitating discussion featuring healthy dissention. This suggests that to improve use of data in planning groups like the MPPG, it is key to have a structure that is clear and equitable with training for strong and credible leadership that allows diverse voices to be heard.

Work by Butterfoss and colleagues with community coalitions indicates that decision-makers are more satisfied with outcomes when they have greater control over the process and a climate of group independence and innovation is promoted (Butterfoss *et al.*, 1996). Group climate can influence decisions by affecting individuals' willingness to share knowledge and skills (Driskell *et al.*, 1987). Group cohesiveness and conditions of low affective conflict increase members' sharing of their unique information (Devine, 1999), whereas power differentials reduce information sharing (Brooks, 1994). Support for planning is enhanced by perceived fairness in decision-making, so-called "procedural justice" (El-Shinnawy and Vinze, 1998). Perceived fairness, in turn, is often based on members' perception of their influence on outcome (El-Shinnawy and Vinze, 1998). Providing clear and equitable guidelines and a consistent decision-making structure may alleviate member concerns about conflicts of interest voiced in other evaluations of CPGs (AED, 1996).

Data Inputs

MPPG members had mixed opinions on availability and quality of data inputs. Concerns focused on four areas: availability of certain types of data, volume and timing of data presented, and quality of data presentations. Hence, although the amount often was seen as adequate, more relevant data were desired along with mechanisms for procuring them.

The absence of policy-related data for HIV planning is commonplace, and its availability is often limited by local resources (Rugg *et al.*, 2000). Some of the above-mentioned needs might be met by novel analytic techniques (e.g., geomapping) or further stratification of existing data; other needs may require new data sources. Likewise, information on interventions with documented efficacy at individual, group, and community levels for prioritized populations needs to be available. Additional data to support these areas, along with appropriate technical assistance, appear necessary for members to provide meaningful evidence-based recommendations for prioritization of interventions. Consistent with issues related to perceived power and control, MDPH may want to establish formal mechanisms whereby members can request data to address identified needs and gaps. The primary exposure to data in this study was didactic presentations. Presentation quality was often perceived to be poor by observers, with an absence of key information such as methods and implications for planning. Members complained about the amount of information presented at one time and the lack of time for Q&A and discussion. These types of problems can interfere with members' comprehension, integration, and application of data to decision-making. Because of variations by state or region, CPG technical advisors do not supply states with guidance on the amount and quality of various types of data and experience necessary for evidence-based decisions (AED, 1994, 1996), and no standard formulas exist against which the adequacy of data presentations might be measured. However, the literature indicates trust in the input provider, presenters' cues to action, quality of data delivery, and the match between a presentation's technical level and audience skill in using information can influence acceptance and use of data (Collins and Frank, 1996; McGuire, 1981). The amount of data presented can limit rational use (Simon, 1981) and interfere with group discussion and contribution of unique information by individual members (Devine, 1999). Furthermore, too little time for decision-making, constructive debate, or disagreement, with potentially fewer interpersonal interactions, has been associated with increased stress, lower satisfaction, and poorer decisions (Isenberg, 1986; Kelly and McGrath, 1985). Without comprehension of a presentation, members

may substitute values and experience, thwarting the goal of the data being presented (Bennett, 1998; McGuire, 1981; Tversky and Kahneman, 1974).

These findings suggest restructuring time for data presentations to create standard formats for presentation and to provide a forum to discuss data. Structuring forums for constructive discussion and application, as well as applying data to priority setting exercises, may be helpful. Time for dialogue and disagreement may also prevent "group think"—in which the group makes immature or premature decisions, limiting decision options and tending to select options that lack innovation (Devine, 1999; Janis and Mann, 1977; Nel *et al.*, 1996).

Limitations

The findings are limited by the cross-sectional nature of the assessment and study time frame, which limited the number of possible group observations to five monthly meetings. Second, the limited size of the MPPG membership yielded small samples for interviews, limiting analytic strategies. Third, these findings are based on one specific group, the MPPG. To the extent other CPGs differ, generalizability of results is limited. Fourth, results were probably affected by the contentious prioritization of populations in 1999, which was somewhat atypical. Finally, the small sample did not allow us to evaluate complex interactions of factors related to decision-making.

IMPLICATIONS FOR INTERVENTIONS

Our findings highlight the importance of organizational structure, procedural clarity, and credible leadership to successful HIV prevention planning. Distrust among members and distrust of leadership suggests the need for greater clarity of MPPG structures and member roles as well as the MPPG–MDPH relationship. A new organizational structure was recommended that took power away from the Steering Committee, adding three new leadership groups (Technical Workgroup to plan data presentations, Structural Processes and Procedures Workgroup to ensure equitable processes, and Membership Selection, Retention, and Training Workgroup). This was to redefine influence and power, create new leadership and participation opportunities, and increase clarity on member roles and responsibilities and decision-making processes. Leadership training,

especially chairs of new committees, might help strengthen the role, sense of empowerment, and effectiveness of members. Further, in light of limitations of data and CPGs' dependency on departments of public health to supply data, new structures and mechanisms for members to request data specific to their needs are recommended to improve data availability for decision-making and foster a climate of trust.

Although members reported at least some data skills relevant to planning, there may be room for improvement, particularly in data-use skills relevant to selection of interventions. Small population groups were designed following assessment to achieve this purpose of working to discuss and apply data with other members. Application of data to decision-making might be furthered by including member ratings or voting on related population and intervention priorities concurrently with data presentations. Moreover, the needs for technical assistance should involve researchers and other group presenters who need to know how to address membership needs and facilitate constructive dialogue about data. Finally, structured time must be allocated immediately following data presentations for Q&A and member discussion of the implications of findings to prevention planning. These recommendations led to a decision to create a presentation template for use in planning and preparing presentations to the group and the decision to hold small population group meetings immediately after presentations.

Many issues identified in this study have been observed in other studies (Batelle, 1995; Renaud and Kresse, 1996; Research Triangle Institute, 1999; United States Conference of Mayors, 1994, 1998), yet available technical tools from CDC and its capacity-building partners have only addressed a few areas, particularly construction of epidemiological profiles (Neal and McNaghten, 1998). Distribution of materials and training and assistance such as that identified in this study could help other CPGs create standardized presentation formats, apply data to key documents, or address key technical assistance needs and structures more broadly, thereby filling some existing gaps.

This study raised some questions about the community planning process that need to be addressed in future research. For example, will structural changes increase satisfaction? Will increased satisfaction with the process and/or providing structured discussions around data immediately after presentations increase use of data? Will improvement in data presentations increase use of data? These and other

interventions were implemented in the project's second phase and findings are reported by Morrill *et al.* (2004). Although this study focused on an HIV CPG that is federally supported and state convened, CPGs are increasingly common in many areas of public health and are expected to make data-based decisions. Thus, these findings may help other CPGs to facilitate complex group planning processes and achieve scientifically sound outcomes.

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