
Distance-Based Consulting for Faculty Development

Carole Bland, Ph.D.

Wendy VanLoy, Ph.D.

Lisa Wersal, M.A.

Dr. Bland is professor, Department of Family Practice and Community Health, University of Minnesota. Dr. VanLoy was formerly a Research Associate, Department of Family Practice and Community Health. Ms. Wersal is Research Fellow, Department of Family Practice and Community Health, University of Minnesota.

Correspondence and requests for reprints should be addressed to Dr. Bland, University of Minnesota School of Medicine, Department of Family Practice and Community Health, Box 381, 516 Delaware Street SE, Minneapolis, MN 55455-0392; e-mail: bland001@tc.umn.edu.

Abstract

Changes in faculty roles and demographics necessitate a re-examination of the types of professional development opportunities offered in academic institutions. A Distance-Based Consulting project was designed to assist faculty development progress through all stages of faculty development—needs assessment, project design, implementation, and, in particular, program evaluation and results dissemination (i.e., presentations and published articles).

The progress of 17 primary care educational sites who received assistance in the U.S. and Canada was tracked over two years. Three factors were identified as having the most impact on the success of faculty development projects:

- Funds committed to and designated for faculty development.

- Funded, protected time for at least one person to implement the faculty development initiative.
- An environment capable of supporting faculty development initiatives (e.g., no major budget shortfalls, few faculty transitions, a strong mission, no threat of mergers).

Disappointingly few of the participating sites reached the stage of publishing within the designated 15-month time frame, with many sites reporting environmental impediments to project success. This article describes the institutional characteristics that facilitated pilot sites' success, assesses the usefulness of distance-based consulting efforts, and offers recommendations for future distance-based consulting projects.

Background

In academic departments of primary care, faculty development initiatives have been changing over time to accommodate the changing demographics and commitments of faculty. As in other areas of the academy, many primary care faculty are now experienced, mid-career, or senior members of their institutions, and thus have different developmental needs than those of newer faculty—who typically have been the focus of most past faculty development efforts.¹ In addition to demographic shifts, faculty roles are being heavily redefined. For example, many institutions are asking their faculty to commit more time and energy toward conducting research, making research training for primary care faculty highly desirable. Also, many institutions are locating greater portions of their

curriculum within the community surrounding the medical school. This necessitates the training of volunteer faculty who assume teaching roles in these clinics and hospitals.

Given this changing landscape, primary care departments are continually challenged to provide their faculty with multiple new, tailored opportunities for professional development. Unfortunately, little published research or generalizable evaluations on faculty development programs are available to help faculty development planners choose the most appropriate and effective training strategies.¹ Even when internal evaluations of faculty development programs are conducted, their results are often not generalizable beyond the specific program at hand. Further, many evaluations have lacked the rigor necessary to measure outcomes,² and few institutions have taken the important step of publishing their results.¹ What is needed is rigorous research or generalizable evaluations aimed at discerning which components of and strategies for faculty development are most effective in different settings and circumstances. Additionally, if the wider academic community is to benefit from these investigative efforts, these findings must be disseminated through publication.

These pressing needs were recognized by the planners of the December 1998 national faculty development conference, “Models that Work: The Nuts and Bolts of Faculty Development” (MTW). The MTW conference itself (sponsored by the Health Resources and Services Administration [HRSA], along with the Ambulatory Pediatric Association [APA]) was designed to address two of the five basic stages of a faculty development project: project design (i.e., how to select strategies for meeting faculty development needs) and project implementation (i.e., how to organize faculty development efforts within an institution). MTW planners decided to supplement the conference experience with additional support for attendees, such that the remaining three stages of faculty development—needs assessment, project

evaluation, and publication of findings—would be achieved. Pre-conference support focused on needs assessment, delivered via a video teleconference on the topic. In addition, a one-year, post-conference support plan was established, with an emphasis on evaluation and publishing. This support was delivered through distance-based consulting (DBC) with a team of three consultants (including the first and second authors of this article) chosen for their expertise in needs assessment, measurement and evaluation, and writing and publishing. Lastly, to further ensure that at least some conference attendees would successfully move through all the stages of a faculty development initiative, a group of 17 pilot site institutions were selected to receive individualized focused support before, during, and after the conference.

This article outlines the components of the DBC project as they relate to the pilot sites and discusses our findings from the project. Results were gathered through progress reports from participating sites, project evaluation, and observations of the DBC consultant team. Based on the DBC experience, we describe institutional characteristics that facilitated the pilot sites’ success in their faculty development projects, and we assess the usefulness of our distance-based assistance efforts. Finally, we offer recommendations for future distance-based consulting projects of this type.

At this time, as the DBC project concludes, most of the 17 pilot sites have successfully completed needs assessments and have chosen appropriate faculty development strategies for their desired outcomes. Many sites have also conducted internal evaluations of their projects, or are in the process of conducting evaluations. As far as disseminating their results, however, so far only three sites have given conference presentations on their projects or submitted manuscripts for publication.

It is encouraging that primary care faculty development efforts have been furthered through the MTW conference and its accompanying

components (the videoconference and follow-up distance-based consulting). Even though many sites have not yet reached the stage of readiness to publish their outcomes, much has been learned through the DBC project about (1) the realities of conducting faculty development projects in primary care departments and (2) how those realities should guide the conduction of future distance-based consulting efforts of this type. We hope that our experience will lead to others' successes, as they benefit from our hindsight and prudent recommendations for future distance-based consulting projects.

Description of Distance-based Consulting (DBC) Project

Pre-Conference Events and Support

The DBC project had two pre-conference components: (1) the selection of DBC pilot sites by the Models that Work conference steering committee, and (2) the production and satellite broadcast of a program on conducting needs assessments.

Pilot site selection. As part of a pre-conference mailing, prospective MTW conference participants were invited to apply to be a "pilot team" in the DBC project. Pilot sites would receive special guidance from the DBC consulting team—before, during, and especially post-conference—in the areas of needs assessment, program evaluation, and publishing. Prior to the MTW conference, 17 pilot site teams were selected by the MTW steering committee from among 34 applicants, based on the following criteria:

- clarity of the rationale for the site's proposed faculty development program and the focused identification of a problem;
- quality of the site's preliminary needs assessment plan;

- quality of the site's proposed faculty development strategies or plan to address the identified problem;
- site contacts' enthusiasm for attending the MTW conference and being a pilot site, and/or their identification of specific ways that being a pilot site would help their proposed program;
- capacity of each applying institution to implement needs assessment, faculty development, and/or evaluation designs; and
- level of commitment of the institution to the proposed faculty development program.

The applicants were rated for each criterion on a 4-point scale (1 = little or no information, 2 = poor, 3 = moderate, 4 = exceptional). Originally, only six sites were to be selected as pilot teams; however, given the overwhelmingly positive response of institutions and the impressive quality of many applications, the selection committee suggested that additional funding be secured to expand the pilot study. The funding was obtained from HRSA, and, following the recommendations of the committee, the number of pilot teams was increased to 17 sites: one in Canada, one in Puerto Rico, and the rest in 14 different states across the U.S. (Technical assistance for any site outside the United States could not be supported by the federal funds directing the project. Thus, assistance for the site in Canada, whose ratings from the selection committee were commendable, was provided as part of the outreach efforts of the University of Minnesota.)

Expansion of the pilot group allowed for the inclusion of a more diverse range of academic institutions (e.g., community-oriented, consortium, research-oriented) as well as a broader representation of geographic locales. Care was also taken to balance the representation of all three primary care disciplines (family medicine, general inter-

nal medicine, and general pediatrics). Table 1, which describes the objectives for each pilot project, indicates that three sites planned faculty development projects in family medicine, two in pediatrics, and two in internal medicine. The remaining ten projects involved a combination of these three disciplines.

Video teleconference. In October, 1998, two months prior to the Models that Work conference, a video teleconference on needs assessment was designed and broadcast by the DBC project consultants. Conducting a needs assessment is an important first step for any faculty development project, so that strategies are selected to address the true needs of the faculty. It was recommended to sites that they conduct a needs assessment prior to the conference in order to focus their conference time on the types of strategies most relevant to their faculty members' needs. The satellite teleconference was available to any institution wishing to take part. Those who alerted the consultants ahead of time that they planned to participate in the live broadcast were provided with pre-teleconference reference materials on needs assessment. The teleconference itself featured national program evaluation experts, including the DBC project consultants, who presented the "nuts and bolts" of conducting needs assessments and responded to questions called or faxed in by participants. Following the teleconference, the DBC project consultants further assisted pilot sites in designing their needs assessments by reviewing assessment plans and providing feedback. Copies of the broadcast were sent to all pilot sites and to other institutions upon request.³

Models That Work (MTW) Conference: Events and Support

The MTW conference, held December 2-4, 1998 in Lake Buena Vista, Florida, was open to any interested participants, but also included special offerings for the pilot teams. The conference evolved from two earlier meetings sponsored

by the Division of Medicine, Bureau of Health Professions, HRSA, which addressed the education of the generalist physician and emphasized the need for greater faculty development in medical schools. The intent of the MTW conference was to help participants choose the model of faculty development most appropriate for their settings and gain skills for implementing faculty development programs at their institutions. The conference agenda included multiple workshops on how to address likely faculty development needs such as clinical teaching or computer skills-building; presentations of successful local, regional, and national faculty development programs; and informal time for meeting with national faculty development experts. Over 200 participants from around the nation took part.

With respect to the DBC project, the conference supplied pilot sites with three days of "in person" interaction with each other, with the DBC consultants, and with other faculty development experts. This served as a prelude to what was to be a distance-based experience from that point on. The conference events specifically targeted to the pilot participants were as follows:

- Two presentations, "Effective Approaches to Faculty Development" and "Evaluating Faculty Development Programs and Publishing the Results," were presented by the DBC consultants to set the stage for the pilot sites' future work.
- At two additional special events (a reception and a luncheon), pilot site participants had a chance to network with each other and with the DBC consultants, and to talk informally with the conference presenters about their faculty development plans, ideas, and issues.
- Conference presenters were available for individual consultations with pilot site participants on the last day of the conference.

TABLE 1**PILOT SITES' FACULTY DEVELOPMENT OBJECTIVES**

Pilot Site	Faculty Development Project Objectives	Department(s) Served		
		Family Medicine	Internal Medicine	Pediatrics
Site 1	Develop a Master Teachers Program to build teaching and research skills in medical education.			X
Site 2	Maximize teaching effectiveness in ambulatory settings. Train faculty to: facilitate small groups; teach communication skills and behavioral modification strategies; instruct students in the use of evidence-based medicine to answer clinical questions; evaluate students' progress; and implement remedial strategies as needed.	X	X	X
Site 3	Enhance faculty members' skills in assessment of student performance.	X		
Site 4	Address faculty development needs of community preceptors through collaborative effort of three medical schools. Diversified faculty development methods to include workshops, site visits, correspondence, and distance-learning networks.	X		X
Site 5	Enhance faculty members' skills as tutors in a Problem-Based Learning curriculum.	X	X	
Site 6	Create a multidisciplinary faculty development program aimed at increasing faculty members' teaching and role modeling skills within an increasingly stressful academic health care environment.	X	X	X
Site 7	Develop faculty development initiatives that are academically rigorous and demonstrably effective in facilitating mentoring and developing core skills for education, research, and administration.	X	X	X
Site 8	Create collaborative interdisciplinary faculty development initiatives to fit a setting with high clinical practice demands.	X		
Site 9	Develop programs geared toward community-based faculty in the areas of evidence-based medicine, preventive medicine, and the use of computer technologies in clinical training.	X		
Site 10	Provide formal guidance to community preceptors for improved teaching and mentoring skills, so as to ensure greater uniformity in the clinical training of residents.			X
Site 11	Support medical educators in publishing, especially on their innovative efforts in medical education.		X	X

Pilot Site	Faculty Development Project Objectives	Department(s) Served		
		Family Medicine	Internal Medicine	Pediatrics
Site 12	Support faculty in adopting teaching styles that are administratively efficient, patient-centered, collaborative, respectful of residents' needs to develop independence, and quantifiable.		X	
Site 13	Prepare a cadre of multi-skilled primary care specialists who would become the primary mediators of an integrated curriculum, assisting their colleagues in implementing active learning modalities required by the new curriculum.	X	X	
Site 14	Develop a comprehensive faculty development curriculum, addressing needs assessment; new faculty orientation; skills-building in teaching, research, and administration; and special needs of community preceptors.	X		
Site 15	Develop a comprehensive faculty development plan, addressing areas of needs assessment, teaching skills, integration of computer technology, ethics, learning styles, and evaluation.	X	X	X
Site 16	Support community-based preceptors in implementing a "just-in-time," situation-based, ambulatory, managed care curriculum.	X	X	X
Site 17	Train community preceptors in effective and efficient teaching strategies for an ambulatory managed care setting.			X

- To encourage networking and sharing of ideas among the sites and continuing communication between sites and the DBC consultants, each site representative received a packet listing pilot site locations and contact information, the descriptions of each planned faculty development project, the kinds of assistance available from the DBC consultants (see next section, "Post-Conference Technical Assistance"), and other resources for faculty development.

Post-Conference Technical Assistance

Distance-based consulting. The strategy of distance-based consulting was selected to bridge the geographically-dispersed pilot sites and national

consultants. Using a variety of long-distance telecommunication means (web site, listserve, email, phone, fax, and U.S. mail), the DBC consultants were available to offer assistance to pilot teams in seven key areas of the faculty development process (see List 1). Since the videoconference focused on needs assessment and the MTW conference focused on selecting and implementing the appropriate faculty development approach for one's needs, it was expected that the post-conference technical support would be dedicated primarily to measurement, evaluation, and publishing (areas 5-7 in List 1).

MTW web site and listserve. In addition to one-on-one assistance by the consultants, a web site and listserve were developed to provide on-going

LIST 1

PLANNED ASSISTANCE FOR PILOT SITES FROM DISTANCE-BASED CONSULTANTS

Pre-Conference Focus

1. Identifying decision makers or stakeholders who would use the data gathered; keeping the interests and preferences of these individuals in mind throughout the process
2. Conducting needs assessments

Conference Focus

3. Designing a faculty development program to meet identified needs
4. Articulating appropriate theories guiding program design

Post-Conference Focus

5. Developing appropriate evaluation designs
 - a. Identifying data to be collected
 - b. Formulating questions to assess underlying theory, program implementation, and overall program effectiveness
 - c. Developing methods for gathering data
 - d. Choosing methods for summarizing and analyzing data
6. Reviewing drafts of reports for identified decision makers and stakeholders
7. Reviewing drafts of articles for submission to peer-reviewed journals or manuscripts submitted for presentation

information and support, to engage the participants in on-line communication with one another, and to post sites' progress with their faculty development projects. The web site was periodically updated to highlight information on funding for faculty development programs, national faculty development opportunities, the new structure for HRSA training grants, the types of faculty development programs that can be funded under federal grant legislation (Title VII), new approaches to faculty development (e.g., web sites highlighting the use of distance-learning and web-based instruction strategies), and resources for evaluating scholarship.

Mid-Project Evaluation

Progress reports were collected from all pilot sites at the end of six months (June, 1999). At the end of nine months (September, 1999), an evaluative feedback survey was conducted to assess sites' progress on their individual faculty development projects, as well as the overall usefulness of the distance-based consulting. Also in September, observations of the project consultants were compiled and reviewed. In this section, we describe the methods and findings for this three-part evaluation: the gathering of progress reports from the pilot sites, the follow-up feedback survey, and

observations of the project consultants. As described below, the information gleaned from this evaluation process served to redirect the remainder of the DBC project.

Evaluation Part 1: Pilot Site Progress (June, 1999)

At the mid-point of the technical assistance follow-up to the MTW conference (June, 1999), a progress report form was sent to pilot site coordinators asking them to describe their project progress. Specifically, they were asked to identify the following:

1. Any change(s) in project goals that had occurred since the inception of the project,
2. The status of the project in terms of specified stages of development and implementation,
3. Institutional factors supporting project success,
4. Barriers or constraints on their projects that sites encountered, and
5. Assistance desired at this point, either from the distance-based consultants or from elsewhere.

To provide detailed information for items (2) and (3) above, 12 progress markers and 7 institutional support indicators were defined (see Tables 2 and 3). Site coordinators were asked to indicate which progress milestones had been completed, and which supportive characteristics were present at their institution. These results are presented next.

Completion of milestones for faculty development initiative. The 6-month progress reports revealed that 12 of the 17 sites were actively working on their faculty development initiative but not yet implementing their plan or strategies, that is, they were still engaged in preparatory work (see

Table 2). Four sites were still in the design phase, and one (site 5) did not provide any detail on project status. Only 3 sites reported being at the point of actually implementing defined faculty development strategies. Three sites reported not even having a project team in place to plan and implement their faculty development project.

Given these results, it was apparent that the DBC project's planned time line was unrealistic for many sites. Recall that the objective of the overall DBC project was to move sites from needs assessment to evaluation and preparing manuscripts for publication in approximately 14 months (2 months pre-conference and 12 months post-conference). With only 6 months remaining, only 3 sites were at the point of implementing their faculty development projects. Further, several sites reported facing significant barriers and constraints, lending concerns about these sites' abilities to complete their projects, conduct evaluations, and publish results.

A review of the DBC consultants logs at 6-month post-conference indicated that pilot site personnel were not calling on the project consultants as frequently as had been expected, no doubt because they had not yet reached the stages of evaluation and manuscript writing, which were to be the focus of the consulting services. The types of assistance that sites did request varied significantly in their level of sophistication. Queries ranged from very basic and open-ended, such as, "How do I begin a faculty development initiative?" to more specialized concerns about how to overcome specific institutional barriers, funding constraints, or other political or organizational difficulties. The majority of questions pertained to the preparatory areas of faculty development (needs assessment, project planning, organization of tasks, selection of faculty development strategies, reference searches on various faculty development topics, identification of possible funding sources, and the location of key experts in specific faculty development areas), rather than the areas of evaluation

TABLE 2**JUNE 1999 PILOT SITE PROGRESS: PROJECT MILESTONES COMPLETED**

Pilot site Location	Phases of Project Development											
	Pre-Project Preparation	Needs Assessment		Design				Implementation		Evaluation and publishing		
		Needs assessment in progress	Needs assessment completed	Specific Project goals/objectives for faculty development initiative identified	Faculty development strategies identified	Outcomes & outcome measures identified	Evaluation plan indentified	Actively working on faculty development initiative; actual plan/strategies not yet implemented	Implementing defined faculty development strategies	Implementing evaluation strategies/plan	Writing up results of faculty development project for publication	Manuscript(s) submitted for publication and/or presentation
Site 1	X		X	X	X			X				
Site 2	X		X	X	X	X	X	X				
Site 3	X		X	X								
Site 4			X	X	X							
Site 5												
Site 6	X		X					X				
Site 7	X			X	X	X	X	X	X	X		X
Site 8	X		X					X				
Site 9	X		X	X	X			X				
Site 10	X							X				
Site 11	X		X	X	X			X				
Site 12		X			X							
Site 13	X		X	X	X	X		X	X	X		
Site 14	X		X	X				X	X			
Site 15	X	X						X				
Site 16	X		X	X	X	X	X	X				
Site 17			X			X	X	X				
Total			X		X	X	X					

design, feedback instruments, data analysis, or planning a manuscript.

Presence of institutional support indicators/barriers for faculty development initiative. A review of sites' responses regarding institutional support and barriers was conducted in the following manner. Sites were categorized into two groups: those that seemed to be progressing well with their projects, and those that seemed to be progressing slowly or were stalled altogether (delineated in Table 3 as "making progress" or "experiencing difficulty," respectively). In total, 10 sites were categorized as "making progress" and 7 sites were identified as "experiencing difficulty." The latter included the 5 sites not actively working on a faculty development initiative (as indicated in their progress reports), as well as an additional two sites which had reported major-impediments to their progress (via the progress report, phone conversations, and/or email communication with the project consultants). Following

this categorization, the progress report responses of the two groups were compared to detect any major differences between the groups in the levels or types of institutional support present.

The large majority of sites (90% of those "making progress," 71% of those "experiencing difficulty") reported the presence of support from administrative/organizational leadership; thus, this characteristic did not seem especially salient to project progress. In other areas, however, clear differences between the two groups were evident. A considerably higher percentage of the pilot sites "making progress" indicated having the following support indicators: a project team in place to plan and implement the project; at least one team member with prior experience/training in faculty development; at least one team member with a commitment of 10% or more funded time for the project; and designated funding for the faculty development effort. In contrast, sites "experiencing difficulty" were more likely to report having

TABLE 3

**PRESENCE OF INSTITUTIONAL SUPPORT/BARRIERS
FOR FACULTY DEVELOPMENT INITIATIVES**

Pilot sites Institutional support/barrier indicators	Indicator present (%)	
	Pilot sites "making progress" (N=10)	"experiencing difficulty" (N = 7)
Support from administrative/organizational leader(s) is in place.	90	71
Project team is in place to plan and implement the project.	100	43
At least one team member has prior experience/training in faculty development.	100	42
At least one team member has a funded time commitment of 10% or more to project.	60	14
Designated funding for faculty development efforts has been established.	80	0
Project team has changed since start of project.	40	71
Barrier(s) exist which are making implementation of the project difficult.	50	71

experienced a change in the project team since the start of the project and having faced barriers to project implementation. Interestingly, however, even among sites “making progress,” 50% reported experiencing barriers to project implementation. It is likely that the existing supportive institutional structures at these sites helped them to overcome any significant barriers.

Evaluation Part 2: Feedback Survey of Pilot Sites (September, 1999)

With just six months remaining in the project and only a few sites actually implementing their faculty development initiatives, it was clear that a redirection of the efforts of the project consultants—and quite possibly of the funds remaining on the contract—might be warranted. Therefore, the project consultants decided to survey the site contacts to solicit feedback on the usefulness of the DBC project components thus far, as well as their preferences regarding assistance for the remainder of the project.

The feedback survey also included a detailed section on institutional support to elicit sites’ ratings of the importance of various institutional support characteristics that could be impacting their project success. These data were expected to complement the information previously collected that revealed whether or not proposed support characteristics/barriers were present at sites. The list of support characteristics was expanded to reflect insights into the sites’ environments that the project consultants had gleaned through communication with the sites. (In the survey instrument, this expanded list was renamed “potential predictors of faculty development project success,” to reflect the possible likely connection between the presence of certain institutional environment factors and project success.)

The 68-item survey was mailed to the pilot sites in September, 1999. Thirteen of the 17 sites responded; nine of these were among the “making progress” subset, and four were among those

previously categorized as “experiencing difficulty.” These numbers themselves were telling, as a higher percentage (90%) of the ten “making progress” sites responded to the survey. Even after numerous reminders from the project consultants, only 57% of the “experiencing difficulty” sites responded. We surmised that the low response from the struggling sites was exacerbated by the environmental stresses that they had reported in their progress reports (e.g., hospital mergers, partnering with managed care organizations, pressures to produce more income via direct patient care).

Next, we present the results from the pilot site feedback survey for each of the following survey categories:

1. Significance of potential predictors of project success
2. Usefulness of the distance-based assistance provided by the consultant team
3. Sites’ preferences regarding type of consulting assistance to be provided during the remainder of the project
4. Additional information desired from consultant team (content areas to be covered)
5. Sites’ recommendations regarding future approaches to distance-based consulting.

1. Significance of potential predictors of project success. Table 4 summarizes the sites’ responses to survey queries about the presence and significance of potential predictors of faculty development success in their environments.

A high proportion of the sites “making progress” (7 of the 9, or 78%) reported the presence of the following set of potential predictors of project success:

- stable project team

- Stable pilot site contact
- Team members with prior faculty development experience
- Support from administrative/organizational leaders
- An environment willing to support faculty development initiatives

Interestingly, a similarly high proportion of sites “experiencing difficulty” (three of the four sites, or 75%) cited the presence of four of these same five predictors. The exception was “support from administrative/organizational leaders,” which was present for only two of the four “experiencing difficulty” sites.

A high percentage of both groups (78% of the “making progress sites, 75% of the “experiencing

difficulty” sites) also reported that barriers to project implementation were present at their sites. These barriers included: lack of funding, lack of institutional support and enthusiasm from collaborating departments, lack of mechanisms for interdepartmental collaborations, lack of experience/expertise in faculty development, lack of adequate time and money for developing curriculum, lack of protected time, lack of administrative support, and faculty turnover. Notably, for sites “making progress,” the number of project teams reporting the presence of barriers increased by two in the three months since the June progress report.

It is in examining the remaining three potential predictors –all of which had to do with funding– that we see the greatest differences between the site groups. Five of the nine “making progress” sites (56%) reported (1) having designated funding to support the faculty development initiative, (2) having specific funds committed to the project

TABLE 4
POTENTIAL PREDICTORS OF FACULTY DEVELOPMENT PROJECT SUCCESS

Potential predictor	Presence of predictor		Impact of predictor on project success (mean response across all sites*)
	Sites “making progress” (N = 9)	Sites “experiencing difficulty” (N=4)	
(1) Stable project team	7 (78%)	3 (75%)	2.64
(2) Stable pilot site contact	7 (78%)	3 (75%)	2.20
(3) Team members with prior faculty development experience	7 (78%)	3 (75%)	2.60
(4) Support from administrative/organizational leaders	7 (78%)	2 (50%)	2.50
(5) An environment willing to support initiatives such as the faculty development project described in the pilot site application	7 (78%)	3 (75%)	2.63
(6) Designated funding to support the faculty development initiative	5 (56%)	0 (0%)	2.67
(7) Funds committed to the project for at least one team member	5 (56%)	1 (25%)	2.92
(8) An environment capable of supporting faculty development initiatives (e.g., no budget shortfalls, few faculty transitions, a strong mission, no threat of mergers)	5 (56%)	1 (25%)	2.56
(9) Barriers which make implementation of the project difficult	7 (78%)	3 (75%)	2.86

*1=not at all; 2=somewhat; 3=most definitely

for at least one team member, and (3) being in an environment capable of supporting faculty development initiatives (e.g., no major budget shortfalls, few faculty transitions, a strong mission, no threat of mergers, etc.). In contrast, of the five sites whose projects were “experiencing difficulty,” only one (25%) reported an environment capable of supporting faculty development or the existence of money to support at least one team member. Moreover, none of the sites “experiencing difficulty” had designated funding to support their faculty development initiative.

In addition to stating whether a potential predictor was present or absent at their sites, site contacts were asked to rate each potential predictor as to “the extent to which the [potential predictor], or lack of the [potential predictor] impacted the success” of their faculty development projects. For these ratings, a 3-point scale was used (1 = not at all, 2 = somewhat, 3 = most definitely). In examining the mean scores for each potential predictor, we found that for most predictors, the mean response hovered between 2.50 and 2.67. The highest mean score went to having funds committed to the project for at least one team member (2.92). The lowest mean score went to having a stable site contact (2.20).

From these mean scores, we can see that, on average, all of the predictors were viewed by the site teams as contributing at least “somewhat” to the success of their projects. Indeed, many rating scores tended toward the upper (“most definitely”) end of the scale. The predictor receiving the highest mean score was related to funding; this underscores the importance of funding issues for the pilot sites. In retrospect, utilizing a wider range of possible scores (a scale of five or seven, rather than three), may have revealed greater differentiation in terms of the relative value of each potential predictor.

2. Usefulness of the distance-based assistance provided by the consultant team. The next seg-

ment of the survey assessed the usefulness of each of the DBC project assistance strategies up to this point in the project. Sites were to rate the strategies as to the extent to which they were found to be useful for their projects (see Table 5 for mean ratings). A three-point rating scale was employed (1 = not at all [useful], 2 = somewhat [useful], 3 = most definitely [useful]).

Most notable in this segment of the survey was sites’ preference for one-on-one consulting geared to their specific needs. As noted earlier, sites were at varying levels of experience and sophistication in conducting faculty development efforts, and their questions reflected those differences. Also, their queries were unique to their settings, circumstances, and objectives. It is not surprising, then, that the highest rated item in this segment of the survey (0 = 2.67) was “specific assistance from the DBC project consultants in response to requests from the site.” Assistance that was more broad in scope, so as to serve the entire group, received much lower ratings. For example, “general assistance/information” (i.e., group email messages and faxes) was rated as only somewhat useful to the pilot sites (0 = 1.91).

Further evidence that the sites preferred individualized attention over group information is seen in their relatively low ratings of two group-oriented assistance strategies: the MTW web site and listserve. Although both were created at the request of the pilot site teams, each was rated as less than “somewhat” useful for sites’ faculty development projects (0 = 1.80 and 1.67 for the web site and listserve, respectively). Likewise, the teleconference on needs assessment was rated as less than “somewhat” useful (0 = 1.73), and the videotape of the teleconference was found to be least useful (0 = 1.18).

3. Pilot sites’ preferences regarding type of consulting assistance to be provided during the remainder of the project. In addition to their ratings of the assistance received so far, pilot sites

TABLE 5
PILOT SITES' RATINGS OF DISTANCE-BASED ASSISTANCE STRATEGIES

Type of assistance (mean response*)	Usefulness to-date
(1) Specific assistance from the distance-based consultants in response to requests from my site	2.67
(2) Being a pilot site for the DBC project	2.27
(3) General assistance/information received via messages sent out by the distance-based consultants to the entire pilot site group	1.91
(4) Models That Work web site	1.80
(5) Video teleconference on needs assessment	1.73
(6) Models That Work list serve	1.67
(7) Videotape of the teleconference on needs assessment	1.18

*1=not at all; 2=somewhat; 3=most definitely

were asked to comment on the kinds of assistance they would like to receive for the remainder of the project. Site contacts were asked to assign a total of 100 points among seven options with respect to “how useful [they] thought each type of assistance would be to their site within the next 3-4 months.” (More points were to be assigned to those options considered the most useful). Table 6 lists the assistance options with the average points awarded each option.

The sites’ responses to this section of the survey indicated that their strongest preference was to be given discretionary funds to support their faculty development projects (0 = 36.82). The second highest rating went to the option of receiving funds to hire a consultant of the site management’s choice (0 = 28.50).

4. Additional information desired from consultant team (content areas to be covered). Critical

needs centered around funding—revealed in earlier sections of the survey—were echoed in the sites’ ratings of “the extent to which additional information in [specified] areas of faculty development would be useful” to their sites (see Table 7). The highest rated content area (2.83 on a 3-point scale, where 1=not at all, 2=somewhat, 3=most definitely) was information on “financing faculty development, developing infrastructure, administrative support and resources (especially money for initial and ongoing development).” This was followed by information on establishing environments supportive of faculty development “(e.g., how to encourage cultural change, get faculty interested and motivated, get departmental support, find time for faculty development, add faculty development as one component of career development, etc.)” (0= 2.55).

All but one of the ten possible topic areas listed received at least a “2” rating from sites, indicating

that sites were at least “somewhat” interested in receiving information on those topics. The only choice that received less than a “2 ” was “needs assessment,” presumably because by this time in the project, all of the sites responding to the survey had completed this phase of project development. These data again reflect the wide range of information sites desired in various topic areas, and point to the challenge that the project consultants faced in meeting sites’ differing needs, especially since the distance-based consulting that occurred after the MTW conference was intended to focus on just two of these topic areas: evaluation and publishing.

5. Pilot sites’ recommendations regarding future approaches to distance-based consulting.

In the final section of the survey, sites were asked to reflect on their experiences in this distance-based consulting project, and then forecast what they thought would be most beneficial for participants

in future projects of this type. Specifically, they were asked to rate items according to the extent to which items were considered useful and likely to increase the effectiveness of future distance-based programs (see Table 8). Ratings ranged from 2.17 to 2.67 (based on a 3 point scale, 1 = not at all, 2 = somewhat, 3 = most definitely). Highest ratings went to having a time frame encompassing more than 15 months for sites to move from needs assessment to implementation to evaluation (0 = 2.67). This was closely followed by having set expectations for being a pilot site (0 = 2.64), having dedicated time (perhaps two to three hours) with the project consultants at the faculty development conference (0 = 2.58), receiving funding as a result of being selected as a pilot site (0 = 2.55), and having access to a wider pool of consultants with skills or expertise in a range of faculty development areas and stages of project development (0 = 2.54).

TABLE 6
PILOT SITES’ PREFERENCES FOR CONSULTING ASSISTANCE
FOR THE REMAINDER OF THE DBC PROJECT

Assistance option	Average points awarded (out of 100 total points)
(1) Money to use as you see fit for specific aspects of your project (e.g., personnel support).	36.82
(2) Money to spend on the consultant(s) of your choice, with expertise in your area of faculty development.	28.50
(3) Keeping DBC consultants available on an “at your request” basis to answer questions as needed.	21.11
(4) Regularly scheduled phone contact with the DBC consultants.	18.33
(5) A site visit from the consultant of your choice.	17.86
(6) A web site which includes other specific materials and “how to’s” for faculty development, as well as links to other faculty-development oriented sites with information on things such as grant programs.	16.09

TABLE 7
CONTENT AREAS OF INFORMATION DESIRED BY PILOT SITES

Type of Information	Anticipated usefulness of information (mean response*)
(1) Financing faculty development, developing infrastructure, securing administrative support and resources (especially money for initial and on-going development).	2.83
(2) Establishing a working faculty development environment (e.g., how to encourage cultural change, interest and motivate faculty, secure departmental support, find time for development, add faculty development as one component of career development).	2.55
(3) Approaches to faculty development (e.g., instructional, strategies other than workshops, developing a web site for faculty development, techniques for evaluating and tracking web-based learning, information on emerging technologies such as web-based instruction modules).	2.54
(4) Turning projects and presentations into publications.	2.36
(5) Collaborative faculty development efforts (e.g., institution-wide programs, inter-institutional collaboration, interdepartmental collaborations, public-private affiliations).	2.33
(6) Evaluating faculty development programs (e.g., appropriate outcome measures, types of evaluation instruments, methods of evaluation of outcomes/impact).	2.31
(7) Specifics on types of faculty development environment (e.g., curriculum development, evaluating faculty performance; for instance the relationship between faculty development and personal and professional growth).	2.25
(8) Making faculty development programs work (e.g., specifics on what makes models work, general tips, the steps involved in starting faculty development programs).	2.00
(9) Designing faculty development programs.	2.00
(10) Needs assessment (e.g., more on assessing and defining needs, what to do with needs assessment data).	1.55

*1=not at all; 2=somewhat; 3=most definitely

These responses underscore five key themes emerging from the DBC project—themes either already alluded to, and/or that will be further discussed in remaining sections of this article: (1) sites required more time than anticipated; (2) the project design did not include requirements of

accountability on the part of the participating sites; (3) sites particularly appreciated consulting aimed at their individualized needs; (4) adequate funding was a key element of sites' faculty development project success; and (5) sites' consulting needs were broad-ranging.

TABLE 8

**PILOT SITES' RECOMMENDATIONS REGARDING FUTURE
APPROACHES TO DISTANCE-BASED PROGRAMS**

Recommendation	Pilot Sites' Mean Response*
(1) A time frame encompassing more than 15 months for sites to move from needs assessment to implementation to evaluation.	2.67
(2) Set expectations "for being" a pilot site.	2.64
(3) Dedicated time (perhaps 2-3 hours) with the project consultants at the faculty development conference.	2.58
(4) Funding as a result of just being selected "to be" a pilot site.	2.55
(5) A pool of consultants to tap appropriately as resources for specific development needs, with skills or expertise in a range of faculty development areas and stages of project development.	2.54
(6) Dedicated time (perhaps 2-3 hours) with at least one other conference presenter at the faculty development conference.	2.45
(7) Consultant(s) directly involved with the pilot site team who perhaps even has/have a presence at the site.	2.44
(8) Face-to-face contact with project consultant(s).	2.27
(9) More than five weeks between the presentation of needs assessment materials (e.g., a video teleconference) and the presentation of faculty development information (e.g., a national conference) for sites to do a needs assessment.	2.20
(10) Regularly scheduled phone contact with project consultant(s).	2.18
(11) Direct assistance with needs assessment prior to a conference on approaches to faculty development.	2.17

*1=not at all; 2=somewhat; 3=most definitely

Evaluation Part 3: Consultant Observations

In addition to feedback from the pilot sites, observations from the DBC project consultants provided an additional perspective on both the pilot sites' success in their faculty development endeavors, and on the success of this Distance-Based Con-

sulting approach. The consultants reported that the distance-based assistance approach felt unsatisfying for them in that contact with the sites was sporadic, and the lack of face-to-face contact and reliance on email allowed relationships to "weaken" and feel more impersonal over time. Many of the sites were not ready for or did not want coaching on evaluation and publication; their requests for

assistance had more to do with political or organizational concerns or institutional barriers than with evaluation plans and publication.

In addition, the needs of sites tended to be individualized, requiring a broader set of coaching skills and resources than were originally planned and available in our resource/consultant pool. The project consultants could provide sites with names of experts or appropriate resources on such topics as problem-based learning or web-based instruction, but DBC consultants were not themselves “Jacks of All Trades,” and thus had difficulty fielding the wide variety of questions put forth. This led to a “disconnect” between what could be offered, what the sites needed, and in what time frame.

In retrospect, it appeared that either a larger pool of consultants was needed to handle the wide range of needs, or that a smaller, more “select” group of sites—with similarly focused needs, support systems, and motivations—would have been more manageable for the three-person DBC consultant team.

Other “disconnects” between the planned DBC project and what occurred had to do with timing. As the project progressed, it became clear that the speed at which sites could move from needs assessment to implementation and then to evaluation was greatly overestimated. Most sites needed more time than had been allowed to plan and implement their proposed projects, let alone evaluate them and prepare a manuscript for publication. The existence of individual institutional support for faculty development projects, evaluation, and the publishing of results was uneven across sites; in many cases, individuals responsible for faculty development and their resources were overtaxed with other responsibilities. Therefore, sites progressed at differing rates. Compounding this timing “disconnect” were unexpected institutional barriers that arose at various sites as the DBC project progressed, overwhelming locations

even where favorable characteristics had initially been present.

Another factor impeding sites’ success had to do with the relative lack of experience of site personnel in conducting faculty development projects. This factor reduced many sites’ likelihood of success, and especially reduced the likelihood of publishing, as staff did not have an already-established line of inquiry and body of knowledge on which to build.

There also seemed to be a lack of commitment from the pilot sites to the DBC project. Although sites had to apply and were selected, there was no direct funding to sites connected with their acceptance into the project, nor were there prescribed expectations around sites’ participation. Sites’ active participation had been assumed by the DBC project designers, and mechanisms to ensure sites’ accountability had not been planned. Therefore, there were no guarantees that participating sites would ask for or utilize the resources offered, or that they would respond to requests from the consultants once the project was underway. For example, no site ever posted a question or reported on their progress on the listserve, and timely progress reports from the sites were not forthcoming. As time went on, and some sites’ institutions or departments were experiencing great duress, even the distance-based consultants’ offer to fund an on-site consultant visit at each site went unanswered by some locations. (The on-site consultant visits will be discussed in the next section of this article.)

Given the multiple difficulties surfacing at some sites that impeded their progress, and the much longer time line that even the most successful sites were requiring, it appeared that the intended outcome of completed faculty development projects, with evaluation of these projects and published results, would likely not be forthcoming from most sites.

Final Stages of the DBC Project

Redirection of Remainder of DBC Project: On-Site Consultants

After careful review of the project results at this point, the HRSA project director and DBC consultants decided to extend the project for an additional year. The remaining funds were allocated for the hiring of an additional consultant for each pilot site. Sites could choose their own consultant so as to match his/her expertise to their most critical area of faculty development. Travel money and honoraria were provided so that consultants could visit locations in person for consulting and/or to conduct training. The hiring of consultants was the second highest rated choice among the sites. This method of funds distribution was preferred by the funder (HRSA) over the sites' first choice, which was to be granted full discretionary use of funds for any aspect of their project. The specified use of funds allowed the funder and consultants greater financial oversight. (The hiring of additional consultants required the sites to submit proposals for approval and the invited consultants to sign contractual agreements.) Sites were allowed great latitude, however, in that they had the discretion of hiring whatever consultant they thought best to work either on their faculty development project that was designated as part of the DBC project, or for some other pressing area of need in their faculty development programs.

A letter offering sites the opportunity to hire a consultant was sent December 18, 1999. (One site, located in Canada, could not be included in this opportunity, as HRSA regulations did not allow funding support to extend outside the U.S.) Only a few sites had responded to this offer by the application deadline of March 15, 2000, signaling the institutional instabilities and other difficulties several sites were experiencing in continuing their faculty development functions. This also indicated that even sites with flourishing faculty develop-

ment efforts required a great deal of time to take advantage of the assistance offered through the DBC project. Most sites that did respond by March 15 requested extensions for completing their arrangements with consultants and submitting proposal letters. These extensions were granted.

A few sites had dropped out of contact with the DBC project consultants, and several email messages and phone calls were required to reestablish contact with site representatives. These sites generally declined the opportunity to hire a consultant, citing lack of time and personnel to make the necessary arrangements, institutional structural and financial problems, changes in staff, personal health problems among the staff, administrative difficulties, and institutional shifts in priorities away from faculty development. One site that declined funds had a happier story to tell: site representatives had secured their own funding to hire a consultant from other sources.

In total, nine of the sixteen U.S. pilot sites utilized HRSA funds to arrange for on-site consultant visits; of these, three sites were so ambitious as to arrange for two consultants. With these sites, communication between DBC consultants and sites increased significantly, mostly for the purposes of solidifying contracts and arranging for the payment of the invited consultants. Consultant visits began as early as the end of May, 2000 and continued into October, 2000.

Final Assessment of Pilot Sites' Progress

As consultant visits concluded, a final progress report was solicited from all 17 sites. Reports from fifteen reports were returned (an 88% response rate). Findings from these fifteen reports echo findings from the earlier progress report, evaluation, and consultants' observations. All but two sites indicate changes in their faculty development plans and goals since the inception of the DBC project. Thirteen also indicate a change in their project time lines. Only three sites reported completing an

evaluation of their project; three sites have submitted manuscripts for publication; a fourth site is preparing a manuscript for submission; and one site has presented on their project at conferences.

When asked to list factors contributing to the success of their faculty development projects, sites' responses reflected a similar set of priorities as those revealed in earlier evaluations. The two most frequently listed factors were availability of funding and supportive leadership. The usefulness of interactions with the DBC project consultants and other invited consultants was frequently mentioned. Nearly every site that had an on-site consultant lauded the on-site visits as exceptionally valuable. The two most frequently listed factors detracting from project success were lack of financial support and lack of time to devote to the project.

Summary and Recommendations

Summary of Findings

In summary, three main factors were identified as having the most impact on the success of pilot sites' faculty development projects:

- Funds committed to and designated for faculty development.
- Funded, protected time for at least one person to implement the faculty development initiative.
- An environment capable of supporting faculty development initiatives (e.g., no major budget shortfalls, few faculty transitions, a strong mission, no threat of mergers, etc.).

Unfortunately, none of these factors can be influenced by distance-based consulting, or, for that matter, by any form of consulting. We elaborate briefly on these three factors below.

1. Committed funds. The emphasis on funding needs showed up again and again in sites' feedback responses. For example, when sites were asked what kinds of additional information they desired, the highest rated option was for information on financing faculty development initiatives. When sites were asked in the ninth month of the DBC project how the remaining project funds should be used, the option that received highest ratings was for sites to receive money which they could use as needed to support their faculty development projects. When asked for their recommendations on how to conduct future distance-based projects, the sites ranked highly the option of receiving financial support in exchange for their participation in the pilot study. Lastly, in the sites' final progress reports, the issue of funding surfaced frequently in response to an open-ended survey question about factors detracting from or contributing to project success. Clearly, funding was a detractor to success when lacking, and an important contributor to success when present.

2. Ample, dedicated time. Having enough time to plan and implement their projects was another obvious challenge for many sites. Sites' responses were slow, even to the offer of money to hire consultants; in many cases, proposals to hire consultants were forthcoming only after several reminders and time extensions. Lack of time was frequently cited as a barrier impeding sites' progress. Most sites expressed a desire to have at least a portion of one person's time funded for faculty development. In addition, the overall time line of the project proved too ambitious for most sites. Having a time frame of more than 15 months to move from assessment to implementation to evaluation received the highest ratings among options of ways to increase the effectiveness of future distance-based programs.

3. Supportive, stable environment. The need for a stable, supportive environment was clear, as the lack thereof was the "undoing" of several sites'

faculty development projects. These tended to be the sites that “disappeared into the woodwork,” overwhelmed by institutional restructurings of one kind or another, by changes in department or institutional priorities or direction, and/or by turnover in pilot team leadership or membership.

Aside from these factors, which cannot be influenced by consulting, the sites’ responses also indicated which types of consulting assistance they found or would find most helpful. First, sites preferred individualized assistance tailored to their unique needs over general information supplied to the sites en masse. Second, in addition to information on techniques of faculty evaluation, evaluation, and publication, as were provided as part of the DBC project, sites would like information on funding sources for faculty development, how to establish a ‘culture’ that is conducive to faculty development, and the availability of collaborative faculty development efforts. Finally, sites recommended that future DBC projects have the following five characteristics:

1. A time frame encompassing more than 15 months for sites to move from needs assessment to implementation to evaluation;
2. Set expectations for being a pilot site;
3. Dedicated time (perhaps two to three hours) with the project consultants at the faculty development conference;
4. Allocated funds for pilot sites as a result of being selected, and
5. A wider pool of consultants with skills or expertise in a range of faculty development areas and stages of project development.

Recommendations for Future Distance-Based Projects

Given the above feedback from sites and consultants, what recommendations can be made for the future conduct of similar distance-based efforts?

First, having funding tied to sites’ acceptance as program participants is recommended to provide sites with much needed financial support. However, this support should come with expectations for required levels of participation by sites. Thus, providing funding would demand greater accountability of sites and provide a mechanism to keep them “on task” with their projects.

Second, keeping the number of sites to a more manageable number (six or, at most, eight) would serve to focus consultants’ energies and thereby enable them to provide what the sites in this study most appreciated — individualized attention to their unique needs. This individualized attention would also serve to help keep sites on task and progressing in a timely manner. Furthermore, the reduced numbers of pilot site locations would necessitate a more selective approval process with even closer scrutiny of sites’ propensity to succeed than was utilized for this study.

Third, a more generous time line would increase sites’ abilities to achieve desired outcomes, that is, to successfully move through all stages of conducting a needs assessment, and then designing, implementing, evaluating, and disseminating the results of a faculty development program.

Fourth, arranging for sites to have more initial, dedicated, face-to-face contact with the project consultants would provide a much stronger foundation for forging productive long-distance relationships.

Fifth, later, as sites develop their faculty development projects, having a larger pool of available

consultants to better address the wide range of possible needs of sites would enhance sites' success.

Upon reflection, it seems that the types of assistance most valued by pilot sites were those interactions that occurred "in person," rather than those that were distance-based. For example, the MTW conference itself, which was not detailed in this report, received highly positive ratings from attendees. In communications between site contacts and DBC consultants, and in sites' final progress reports, site personnel frequently made positive remarks about the types of "in person" assistance they had received: personal contacts between site personnel and the experts at the conference, and subsequent on-site visits to sites by consultants of their choosing. The bottom line is that even in our high-tech, internet-linked society, the personal touch is what is most appreciated. Even attending to the recommendations above may not raise distance based consulting to the level of one-on-one in person assistance.

Recommendations for Future Distance-Based Projects

Given the above feedback from sites and consultants, what recommendations can be made for the future conduct of similar distance-based efforts?

First, having funding tied to sites' acceptance as program participants is recommended to provide sites with much needed financial support. However, this support should come with expectations for required levels of participation by sites. Thus, providing funding would demand greater accountability of sites and provide a mechanism to keep them "on task" with their projects.

Second, keeping the number of sites to a more manageable number (six or, at most, eight) would

serve to focus consultants' energies and thereby enable them to provide what the sites in this study most appreciated — individualized attention to their unique needs. This individualized attention would also serve to help keep sites on task and progressing in a timely manner. Furthermore, the reduced numbers of pilot site locations would necessitate a more selective approval process with even closer scrutiny of sites' propensity to succeed than was utilized for this study.

Third, a more generous time line would increase sites' abilities to achieve desired outcomes, that is, to successfully move through all stages of conducting a needs assessment, and then designing, implementing, evaluating, and disseminating the results of a faculty development program.

Fourth, arranging for sites to have more initial, dedicated, face-to-face contact with the project consultants would provide a much stronger foundation for forging productive long-distance relationships.

Fifth, later, as sites develop their faculty development projects, having a larger pool of available consultants to better address the wide range of possible needs of sites would enhance sites' success.

Upon reflection, it seems that the types of assistance most valued by pilot sites were those interactions that occurred "in person," rather than those that were distance-based. For example, the MTW conference itself, which was not detailed in this report, received highly positive ratings from attendees. In communications between site contacts and DBC consultants, and in sites' final progress reports, site personnel frequently made positive remarks about the types of "in person" assistance they had received: personal contacts between site personnel and the experts at the conference, and subsequent on-site visits to sites by consultants of

their choosing. The bottom line is that even in our high-tech, internet-linked society, the personal touch is what is most appreciated. Even attending to the recommendations above may not raise distance based consulting to the level of one-on-one in person assistance.

References

1. Bland CJ, Simpson D. Future faculty development in family medicine. *Fam Med.* 1997;29(4), 290-3.
2. Reid A, Stritter FT, Arndt JE. Assessment of program outcome. *Fam Med.* 1997; 29(4):242-7.
3. Bland CJ, Schmitz CC. Needs assessment: the foundation for effective faculty development [videocassette]. Minneapolis, Minn: University of Minnesota Medical School, Department of Family Practice and Community Health; 1998.