

HIV prevention case management in San Francisco: Barriers to successful implementation

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Abstract

Prevention case management (PCM) is the most labor-intensive HIV prevention intervention for persons at risk for acquiring or transmitting HIV. However, it has not been thoroughly evaluated. We abstracted client charts ($n = 290$) from 12 San Francisco PCM programs and interviewed current and former program directors ($n = 16$), case managers ($n = 17$) and contract managers ($n = 4$) regarding client characteristics, services delivered, barriers to care, cost and organizational structure, policies and procedures. Most agencies lacked protocols and data collection forms, had high staff turnover, inadequate staff training and supervision, experienced difficulty recruiting and retaining clients and could not implement PCM guidelines. Half the clients lacked behavioral risk assessment, 39% were low or no risk, a third received HIV prevention education and a third received referrals. Including time spent directly with clients and working on their behalf, PCM cost almost four-fold more per client contact than the next most costly individual level prevention intervention. Local PCM guidelines, reimbursement ties to providing and documenting services and increased collaboration between the health department and agencies has greatly improved the situation. Outcome evaluations and cost-effectiveness assessments comparing PCM to less costly prevention interventions are needed.

Introduction

HIV PCM is intended for persons infected with or at high risk for HIV infection for whom other less intensive HIV prevention interventions are ineffective or inappropriate. It is designed to assist clients overcome issues such as poverty, mental illness and disenfranchisement that take precedence over reducing high-risk sexual and injection behaviors (CDC, 1997a; Rothman, 1998). PCM is a one-on-one intervention that combines traditional case management with targeted prevention education and risk-reduction counseling. It provides ongoing mental health counseling and support as well as linkage to additional needed medical, mental health, substance abuse treatment and social services ranging from housing to job training (CDC, 1992; Purcell et al., 1998; Rothman, 1992; Ruiz et al., 2001).

The concept of PCM is comparatively new. In the late 1980s and early 1990s, HIV prevention experts at the Centers for Disease Control and Prevention (CDC) wanted to increase the effectiveness of existing individual-level risk-reduction efforts (CDC, 1997a, 1997b; Choi & Coates, 1994; Holtgrave et al., 1995). Building on the success of case management at helping persons with mental illness, substance abuse and chronic health problems

(Rothman, 1992, 1998; Purcell et al., 1998), the CDC funded three demonstration projects in 1989 to provide newly identified HIV-positive persons two follow-up sessions with a case manager. In 1992, the CDC expanded PCM by directly funding community-based organizations and establishing co-operative agreements with state and local health departments to provide ongoing PCM (CDC, 1993); official CDC guidelines specifying the basic tenets, essential components and organizational structure of PCM were issued in 1995 and revised in 1997.

Despite the lack of outcome evaluations and cost-effectiveness assessments comparing PCM to other prevention interventions, PCM is promoted as the best intervention to help high-risk HIV-positive and -negative individuals incorporate prevention strategies into their lives (CDC, 1999; CDC, 2001, 2003; DHHS, 2003; Janssen et al., 2001;). To date, PCM programs structured around the current CDC guidelines have not been thoroughly evaluated in terms of barriers to program implementation, service delivery and cost (CDC, 2003; DHHS, 2003; NASTAD, 1997; Rahimian & Pach, 1999).

At the behest of the local HIV Prevention Planning Council, the AIDS Office of the San Francisco Department of Public Health (AO-SFDPH)

evaluated 12 PCM programs at seven community-based organizations to assess program implementation, client and program characteristics, barriers to effective service delivery and cost. We also conducted the evaluation to inform the development of local PCM standards and guidelines that would better reflect successful San Francisco strategies to recruitment and service delivery that were not specified in federal guidelines.

Methods

Programs assessed

Programs were invited to participate in the evaluation if they provided services in San Francisco, were funded to follow CDC PCM guidelines, initiated the program with written protocols stipulating that clients receive a baseline risk assessment which documented their current high-risk behavior, initiated a treatment plan and ongoing individual counseling and required written case notes and documentation of referrals provided and actions taken to facilitate referral follow-through. Thirteen programs (in eight agencies) matched these criteria. Programs did not have to be designated as PCM if they met our eligibility criteria (one such program is included). One agency/program declined to participate because they were conducting an internal evaluation; the clients served, services provided and organizational structure of this program were qualitatively similar to programs participating in the evaluation. Each participating agency received \$1,000 plus an additional 5% of their funded PCM Units of Service (up to a cap of \$6,625 per agency) to offset costs of participating in the evaluation. Our assessment was confined to quantitative and qualitative process data that would inform program standardization and improvement. Due to lack of standardized methods and data, we were unable to conduct an outcome evaluation.

Client-level data

We collected client-level data on services received during the initial three months of PCM both prospectively on clients newly entering a PCM program between February and May 1999 ($n = 126$), and retrospectively from February 1 1998 on PCM clients who had been receiving services for less than one year for whom basic demographic, behavioral and service data were available ($n = 164$). Based on conversations with providers, the first three months in PCM were considered to be the most intensive and critical for the long-term success of the intervention. Project staff abstracted data from client charts weekly and all data were collected

between February and December 1999. Programs for which only prospective client data were available targeted low income heterosexual men and women, transgender women and Asian immigrants. Data on client risk at intake reflect activities engaged in during the four months prior to intake screening. We coded clients as being at high risk if they engaged in anal/vaginal sex without condoms (or where condom use was not known by the case manager) with a person from a high seroprevalence group (men who have sex with men, male to female transgender women, injection drug users (IDUs) and persons having unprotected sex with a serodiscordant partner) or if they had injected drugs at least once during this period. Clients were coded as low risk if they exchanged sex (non-anal/non-vaginal or anal/vaginal where condoms were used) for money, drugs or shelter or if they were having problems with alcohol or other non-IDU substances.

Qualitative data

From March through June 1999, we conducted semi-structured qualitative interviews with the program directors ($n = 10$) and prevention case managers ($n = 17$) of the participating agencies and the former program directors of the five San Francisco-based PCM programs that were no longer in operation ($n = 6$). Persons interviewed were presented with open-ended questions concerning the organizational structure, goals and philosophical approach of their agency, the successes, challenges and barriers faced in program implementation and working with clients, their perceptions of the efficacy of PCM and what was needed to make it more successful. Interviewers gave prompts to insure that persons interviewed would comment on the problems experienced as well as the successes of their programs. We also conducted similar interviews with the AO-SFDPH contract managers ($n = 4$) to gain their perspective on the successes and failures of the programs evaluated. Interview questions were developed in collaboration with former case managers, program directors and contract managers. Interviews were audio-taped and data was abstracted by each respective interviewer. To insure methodological consistency, all data was jointly reviewed and thematically coded by the principal investigator and all field staff. A manual content analysis was performed on qualitative findings by the principal investigator to capture the major themes emerging from the data.

Program costs

Costs associated with the initial three months of PCM services were estimated by combining the

direct costs (costs associated with client/case manager contact) and indirect costs (costs associated with the tasks case managers engaged in when working on behalf of clients). The reimbursement rate per hour of service delivery at each respective agency was used to estimate an average rate across programs (reimbursement rates ranged from \$40.44 to \$148.77). Direct costs were calculated by multiplying the total hours for direct client contact during the three-month data collection period by the average rate. Indirect costs included the time case managers spent on travel, chart review, creating session plans, post-session review, completing case notes, researching referrals, attending staff meetings, conducting case reviews and attending training and meetings with staff from other agencies. The total hours case managers spent on these activities were multiplied by the average rate; added to this were out-of-pocket expenses for field transportation and telephoning.

Results

Quantitative findings

Programs. The 12 participating PCM programs targeted a wide variety of populations that mirrored the diversity of San Francisco's at-risk communities; half served both HIV-positive and -negative persons (see Table I). Recruitment strategies for new clients varied: four programs relied solely on street-based outreach and almost half (46%) of clients sought out PCM on their own. Agencies varied greatly in terms of program organization, array of services offered, how services were provided and the educational requirements of case managers. Most programs lacked written minimum standards on services provided and program organization ($n = 8$), only four had standardized data collection forms documenting risk behavior, need for additional services, referral provision and case manager follow-up on referrals provided. Only three had written standards setting initial eligibility requirements regarding sexual and IDU behavior. Six programs experienced a complete turnover in managerial staff during the evaluation. There was also a complete change in case management staff in four of the programs; reasons for this included management bringing in all new staff, and case managers leaving for more lucrative positions at other agencies or in other fields. These managerial and staffing changes often precipitated major alterations in recruitment strategies, program focus and types of services offered. Typically when new case managers started the time needed to train new staff resulted in the complete loss of existing caseloads.

Client characteristics and services received. Almost three-quarters of the 290 clients assessed were HIV-negative or never tested, 9% had information on HIV status missing from their records (see Table II). Most clients were male and just over half were white. The mean age was 35 years; the majority were between 25 and 50 years old. HIV-positive clients tended to be older and unemployed. There were no significant differences between clients with only prospective data and those for whom retrospective data was collected with respect to risk behavior, age, recruitment method or number of referrals received. A significantly higher proportion of clients with only prospective data were non-white, female, HIV-negative and unstably housed.

Most clients self-identified as gay or bisexual men. Behaviors coded as high risk during the four months before enrollment varied; the predominant risk was anal/vaginal sex with someone from a high seroprevalence group without condoms or where condom use was not assessed by the case manager (19%), gay men with high-risk sex and IDU (16%) and injection behavior among transgender women and heterosexuals (5%). Thirty-seven percent were behaviorally at low risk, only engaging in the use of non-injection substances and/or alcohol. Ten percent of the sample had no documented behavioral risk.

Almost all clients (94%) saw their case manager more than once during their first three months in PCM; the median number of sessions was seven and the maximum was 33 (see Table III). There were no significant differences in number of sessions attended by HIV status. The services most frequently provided to clients were counseling, emotional support and general follow-up on previous discussions. Case managers did not consistently provide a number of core elements specified in the CDC guidelines. A standardized behavioral risk assessment was completed on 49% of clients and a behavioral plan or set of objectives was negotiated with 37% of clients. Case managers seldom re-assessed current risk behaviors (9% of clients). Just under a third of clients (29%) received HIV prevention education. Only 31% of clients received a referral for ancillary services, most often for additional counseling and for medical and other health-related services. HIV-negative clients were significantly more likely to have received a referral. Twenty-one percent of clients who received referrals successfully accessed one. Among those receiving referrals, there were no significant differences between HIV-positive and -negative clients regarding types of referrals received, case manager follow-up and referral access.

Cost of PCM in San Francisco. The average reimbursement rate at the time of this evaluation was \$96.00 for one hour of service delivery. The average per

Table I. PCM agency and program characteristics.

	<i>n</i>	%
Number of PCM programs per agency		
1 PCM program operated by agency	5	71.4
3 PCM programs operated by agency	1	14.3
4 PCM programs operated by agency	1	14.3
Total number of agencies	7	100.0
Agency funding source		
SFDPH-AIDS office	5	71.4
SFDPH-substance abuse services	1	14.3
CDC direct funding	1	14.3
Total number of agencies	7	100.0
Number of agencies providing care case management as well as PCM		
PCM only	1	14.3
PCM and care case management	6	85.7
Total number of agencies	7	100.0
Agency funding source		
SFDPH-AIDS office	5	71.4
SFDPH-substance abuse services	1	14.3
CDC direct funding	1	14.3
Total number of agencies	7	100.0
Program organization		
Scheduled clinical appointments	5	41.7
Drop-in sessions	7	58.3
Total number of programs	12	100.0
Professional training requirements of PCM staff		
No educational requirement	9	75
Masters level training in psychology or social work	3	25
Total number of programs	12	100.0
Target populations		
HIV status		
HIV-negative persons	5	41.7
HIV-positive persons	1	8.3
All persons regardless of HIV status	6	50.0
Total number of programs	12	100.0
Behavioral risk group		
Gay/bisexual men	5	41.7
Transgender MTF	1	8.3
Incarcerated youth	1	8.3
Women	2	16.7
Injection drug users	1	8.3
All persons at high risk	2	16.7
Total number of programs	12	100.0
Minimum standards in place*		
Yes	4	33.3
No	8	66.6
Total number of programs	12	100.0
Complete data collection materials in place*		
Yes	4	33.3
No	8	66.6
Total number of programs	12	100.0
Programs experiencing complete staff turnover during Evaluation Period		
Yes	6	50
No	6	50
Total number of programs	12	100.0

* At onset of evaluation.

Table II. Client characteristics.

	All n=290 (100%)					HIV-positive ¹ n=72 (27.4%)					HIV-negative/Never tested ¹ n= 191 (72.6%)					p ²
	n	%	mean	median	range	n	%	mean	median	range	n	%	mean	median	range	
Age (missing data n=4)																
≤35	154	53.8	35.6	35.0	13–71	26	36.6	38.8	37.0	26–62	110	58.2	34.6	33.0	13–71	0.002
>35	132	46.2				45	63.4				79	41.8				
Total	286	100.0				71	100.0				189	100.0				
Gender																
Male	251	86.6				69	95.8				159	83.2				0.02
Transgender MTF	31	10.7				3	4.2				25	13.1				
Female	8	2.8				0	0				7	3.7				
Total	290	100.0				72	100.0				191	100.0				
Race/ethnicity (missing data n=1)																
White	159	55.0				48	66.6				109	57.4				0.17
African American	32	11.1				10	13.9				21	11.0				
Asian and Pacific Islander	52	18.0				3	4.2				25	13.2				
Hispanic	34	11.8				8	11.1				26	13.7				
Other/mixed	12	4.1				3	4.2				9	4.7				
Total	289	100.0				72	100.0				190	100.0				
Risk group																
Gay/bisexual Male	192	66.2				49	68.1				121	63.4				0.003
Gay/bisexual male IDU	47	16.2				20	27.8				26	13.6				
Transgender MTF	25	8.6				3	4.2				19	9.9				
Transgender MTF IDU	6	2.1				0	0				6	3.1				
IDU (not gay/bi or TG)	8	2.8				0	0				8	4.2				
Other	12	4.1				0	0				11	5.8				
Total	290	100.0				72	100.0				191	100.0				
Recent risk behaviors ³																
High	117	40.3				33	45.8				67	35.1				0.12
Low	114	39.3				23	31.9				88	46.1				
No risk	59	20.3				16	22.2				36	18.8				
Total	290	100.0				72	100.0				191	100.0				
Employment status (missing data n=31)																
Employed	145	56.0				24	35.8				104	61.9				0.001
Not employed	114	44.0				43	64.2				64	38.1				
Total	259	100.0				67	100.0				168	100.0				
Living situation (missing data n=6)																
Stable housing	198	69.7				56	77.8				124	66.7				0.08
Housing not stable	86	30.3				16	22.2				62	33.3				
Total	284	100.0				72	100.0				186	100.0				

¹ Missing HIV data n=27 (9.3% of sample)

² p-value based on comparisons across HIV status using chi-square tests. For all comparisons with a cell size less than or equal to 5, Fisher’s exact test was used.

³ Risk behaviors documented in client charts at intake or during the three months clients were followed. Data recorded at intake reflect behaviors engaged in during four months prior to intake screening. High risks include: anal/vaginal sex (unprotected or condom use unknown) &/or IDU; Low risks include: sex exchange (non-anal/non-vaginal), alcohol and other non-IDU substance use; No risks include: no risky behavior or risk not assessed/documentated in client chart.

client cost associated with direct contact between case manager and client for the three-month period was close to \$1,000 (see Figure 1). For every hour of direct client contact, we found that case managers spent an average of 1.35 hours completing ‘indirect’ activities (tasks done on behalf of clients and activities fulfilling administrative requirements). The average per-client cost associated with these ‘indirect’ activities for the three-month period was approximately \$1,300. The actual total cost associated with each client session was close to \$225. The per-client costs associated with PCM are significantly higher than other individually-targeted

HIV prevention interventions. The recently standardized reimbursement rate for PCM was set at \$160 for each client contact (\$80 each for one hour of direct client contact and one hour of indirect activities). In comparison, the reimbursement rate for one hour of individual risk-reduction counseling with two clients is \$75 and for each hour of venue-based outreach with a minimum of three people is \$60.

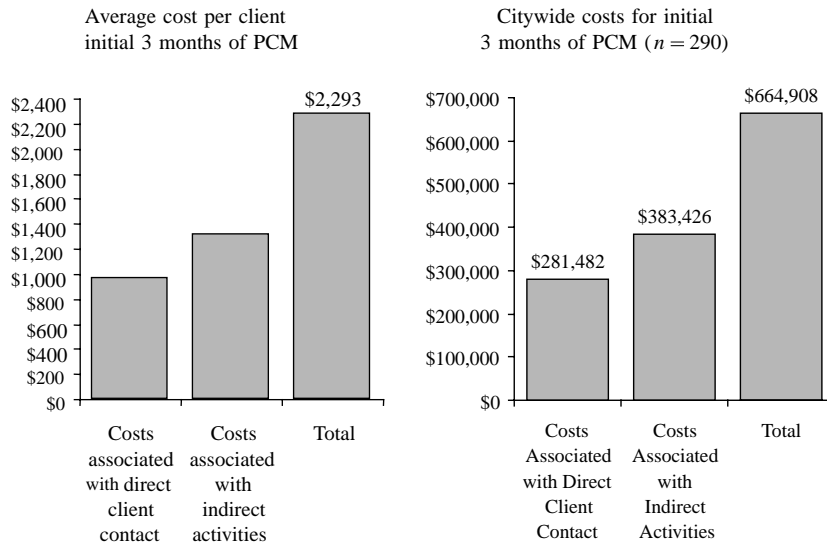
Barriers to programmatic success: qualitative findings

Five principal issues concerning barriers to the successful implementation and operation of PCM

Table III. PCM services provided.

	All $n = 290$ (100%)					HIV-positive ¹ $n = 72$ (27.4%)					HIV-negative/Never tested ¹ $n = 191$ (72.6%)					p^2
	n	%	mean	median	range	n	%	mean	median	range	n	%	mean	median	range	
# of sessions																
≤7	153	52.8	8.6	7	1–33	33	45.8	9.3	9.0	1–25	101	52.9	8.7	7.0	1–33	0.31
>7	137	47.2				39	54.2				90	47.1				
Total	290	100.0				72	100.0				191	100.0				
# of clients getting service																
Counseling/support	227	78.8				60	83.3				153	80.1				
General follow-up	221	76.7				43	59.7				154	80.6				
General risk assessment	141	49.0				26	36.1				103	53.9				
Skills building	130	45.1				32	44.4				96	50.3				
Workshop/group	110	38.2				30	41.7				73	38.2				
Negotiate behavior plan	105	36.5				27	37.5				77	40.3				
Referrals	91	31.4				19	26.4				62	32.5				
HIV prevention education	83	28.8				10	13.9				59	30.9				
Client advocacy	28	9.7				3	4.2				25	13.1				
Re-assess behavior plan	25	8.7				7	9.7				17	8.9				
# Receiving referrals ³																
0	199	68.3				57	79.2				117	61.3				0.006
≥1	91	31.4	2.3	2	1–11	15	20.8	1.9	2.0	1–5	74	38.7	2.4	2.4	1–11	
Total	290	100.0				72	100.0				191	100.0				
Clients receiving 1+ Referrals																
# Accessing referrals ³																
Accessing none	31	34.1				3	20.0				28	37.8				0.11
Accessing one or more	60	65.9				12	80.0				46	62.2				
Total	91	100.0				15	100.0				74	100.0				
# w/ referral assistance ³																
No assistance received	21	23.1				2	13.3				17	23.0				0.21
Assistance received	70	76.9				13	86.7				57	77.0				
Total	91	100.0				15	100.0				74	100.0				
# receiving referral type ³																
Support/counseling/therapy	31	34.1														
Medical/health care	30	33.0														
Housing/shelter	20	22.0														
Substance use Counseling/Tx.	19	20.9														
Clothing	14	15.4														
Crisis management	8	8.8														
HIV/STD testing	8	8.8														

¹Missing HIV data $n = 27$, 9.3% of sample.² p -value based on comparisons across HIV status using chi-square tests. For all comparisons with a cell size less than or equal to 5, Fisher's exact test was used.³Mean, median and range, access, assistance and referral type presented for clients w/ 1+referrals. Prevalence of referrals provided was too low to analyze by serostatus.



¹Direct costs equal the actual dollar reimbursement for direct face-to-face contact between case managers and their clients (based on the averaged 1999 reimbursement rate across the seven participating agencies; reimbursement rates ranged from \$40.44 to \$148.77 per 1 hour of service provision [UOS]). Indirect costs equal the averaged 1999 reimbursement rate for 1 UOS across the seven participating agencies multiplied by the average total time spent by case managers on travel, chart review, creation of session plans, post-session review, completion of case notes, researching referrals, attending staff meetings, training and case reviews, meetings with supervisor(s) and staff of other agencies, plus the average out-of-pocket expenses for transportation in the field and telephoning clients. The cost per client equals the total costs for all clients divided by 290. Citywide costs reflect total costs for all clients at each of the seven participating agencies. (For agencies operating multiple PCM programs, the reimbursement rate across programs was the same.)

Figure 1. Costs associated with clients' initial three months of PCM.¹

programs emerged from our interviews with current and former program directors, case managers and SFDPH-AO contract managers: (1) insufficient guidance provided to agencies on how to tailor the CDC guidelines to their unique programmatic needs; (2) case managers needing advanced professional training and salary levels commensurate with their academic credentials; (3) problems with client recruitment and retainment, given the often intangible nature of PCM; (4) client ambivalence regarding HIV prevention; and (5) the lack of a clear conceptual understanding of PCM by both funders and provider agencies.

Insufficient guidance and flexibility. Most program directors were familiar with the CDC guidelines but, feeling that the guidelines were too restrictive and inflexible in terms of recruitment, types of services offered and minimum number of sessions given, refrained from using them to structure their programs. As one program director explained, 'inflexible and strict guidelines don't lend themselves to HIV prevention because as a program evolves, standards need to change.' Program directors faulted the AO-SFDPH for not supplying the guidance they saw lacking in the CDC document on recruiting clients who did not perceive themselves to be at risk, and clients who did not want HIV prevention services or multiple follow-up sessions. Directors also felt that lack of local standards regarding

program organization, methods of service delivery and data collection materials were major impediments to program success.

Case manager qualifications and retainment. Approximately two-thirds of program directors and one-third of case managers believed that in order to work effectively with clients presenting with significant substance abuse and other mental health issues, case managers needed to have advanced professional training. Given the limited funds programs had available for staffing, program directors found it very challenging to hire and retain case managers who had this level of clinical expertise. Many case managers saw this emphasis on clinical training as being at odds with the necessity for cultural competency; as one case manager related, 'in order to get the people at high risk, the case manager has to have high credibility in the community, he needs to be known as a member of the target population and he needs to have contacts throughout the city.'

Client recruitment and retainment. Most program directors felt that staff turnover and the resulting gaps in service provision worked against their program's ability to establish trust in the target community, believing that once the community developed a distrust of agency and staff, clients would seek services elsewhere. The program directors and case managers on our community advisory

board alleged that recruitment efforts were being further hampered by a reimbursement structure not adequately reimbursing the time case managers needed to establish trust and commitment with prospective clients, especially those not recognizing themselves to be at high risk or unwilling to disclose intimate information about their sexual and drug use behaviors. Approximately one-third of the program directors said that their recruitment efforts would be far more successful at identifying and recruiting persons at highest risk if their case managers could also act as outreach workers. Approximately half of the case managers believed that the inflexibility of protocols regarding street outreach, drop-in hours and expanded night and weekend hours limited their ability to recruit and retain clients. Half also felt that requirements regarding behavioral eligibility criteria, having to deliver HIV prevention and a minimum number of follow-up case management sessions (range = 4–8), and having to negotiate a behavior plan with clients inhibited client recruitment and retention (most of whom wanted services other than HIV prevention). A number of people interviewed saw the prior experiences of clients with HIV prevention as interfering with their ability to get client commitment to being case managed; as one program director stated, ‘the trouble with the counseling component of our PCM program is the difficulty in moving the mindset of our clients away from just casual support to one of longer therapy.’

Delivery of HIV prevention and other services. Most program directors and case managers credited the problems case managers have with delivering HIV prevention services to the fact that most clients do not raise concerns about HIV or accept either behavioral risk reduction counseling or HIV prevention referrals. The majority of case managers believed clients were either ambivalent about HIV prevention issues or uncomfortable discussing their sexual behavior. Due to use of the client-centered model wherein most case managers let their clients’ concerns set the agenda, the lack of client focus on behavioral issues led case managers to feel that they had little with which to engage their clients on a long-term basis. Once clients’ major concerns were dealt with (as one case manager put it, ‘taking care of the general chaos in their lives’), clients neither perceived a need for nor wanted additional sessions. Case managers also felt limited in their ability to provide the level of practical help clients were expecting. Most persons interviewed spoke of the difficulty setting limits regarding how much case managers should do for their clients, as one case manager mentioned, ‘clients want everything done for them and at the same time, you don’t want to undermine their doing things for themselves.’ While

acknowledging that referral provision and linkage is one of the primary incentives case managers have to offer clients, most of the case managers felt that there was a critical lack of housing, substance abuse treatment services and services for HIV-negative persons in the community. Waiting lists, rigid age, health and financial eligibility criteria and a lack of culturally sensitive programs further hampered their ability to provide effective referrals. Half of the case managers spoke of their need for training on getting clients to acknowledge their need for additional services.

The historical perspective of the AO-SFDPH. The contract managers overseeing the development and ongoing operation of AO-SFDPH-funded PCM programs had lingering concerns about the initial implementation of PCM in San Francisco. At the time agencies were awarded contracts, contract managers felt that the AO-SFDPH, the agencies and even the CDC guidelines did not have a clear conceptual understanding of PCM, staffing needs, best practices for client recruitment and the core set of services clients should receive. They highlighted four key reasons why programs were unlikely to succeed: (1) initial expectations for process outcomes documenting client behavior change and client attendance were set too high; (2) actual client needs and inability to sit through multiple clinical sessions did not conform to what was stipulated in contracts; (3) front-line staff did not share the same understanding of what the intervention was supposed to be as the people writing the contracts; and (4) the inability to renegotiate or modify contracts part way through a funding cycle when programs were not working.

Discussion

We assessed PCM programs that were funded to follow CDC guidelines and assessed how well they reached and served their target populations, their cost and barriers to effective program implementation. While San Francisco programs provide services over an extended period of time to clients who represent the local epidemic, we identified numerous barriers to effective client recruitment, retention and service provision.

Many of the barriers identified in early descriptions of PCM remain today, including difficulty recruiting and retaining clients, clients’ lack of perceived need for HIV prevention services, lack of additional services to link clients to and difficulties in providing services to clients with mental health, substance use and economic survival issues (CDC, 1992; Purcell et al., 1998; Rahimian & Pach, 1999). Despite revised and improved CDC

guidelines (CDC, 1997a), many of the previously cited structural problems inhibiting early PCM programs, such as lack of standardized services, organizational structures not supporting the range of prevention, health and social services needed by clients with multiple diagnoses and difficulties associated with hiring and retaining qualified staff, continue to hamper local service delivery (Purcell et al., 1998).

PCM guidelines

We were surprised to discover the lack of agreement between agencies and the AO-SFDPH regarding what PCM constitutes. Also striking was the extent to which the CDC guidelines were not being followed and the paucity of agencies with written protocols stipulating program organization and service delivery. We believe that this lack of understanding of the intervention and established program procedures accounts for some agencies' inability to effectively recruit and serve high-risk persons. Many of the reasons program directors cited for not following CDC guidelines could be overcome by tailoring the CDC guidelines to the unique service needs of local high-risk populations, incorporating recruitment strategies proven effective with other interventions, pilot testing local standards and procedures before awarding contracts, and providing agencies with ongoing training and assistance.

Clients' behavioral risk

Given its intensity and cost, PCM is best suited to clients actively engaging in risk behaviors that put themselves or their partners at highest risk for seroconversion. Regardless of the number of sessions clients have with their case managers, effectiveness hinges on case managers' ability to recruit the highest-risk clients and assess and document current behavioral risk. Without this information, a meaningful behavioral-change plan cannot be developed or implemented. We found a surprisingly large proportion of clients who were from a high-risk group but were not engaging in any high-risk behaviors or for whom documentation on behavioral risks or HIV status was absent. Even though programs initially intended to serve only persons engaging in the highest-risk behaviors, the difficulty agencies experienced recruiting and retaining this target population resulted in reaching clients who wanted general counseling and emotional support regardless of need. Since this evaluation, many of these problems have been remedied by the institution of a reimbursement structure directly tied to documentation verifying assessments of behavioral risk, negotiation of and follow-up on a behavior plan,

referral provision and linkage, and data on clients' behavioral risk reduction.

HIV prevention

Staff of PCM indicated that clients' lack of perceived risk and/or interest in HIV prevention were major barriers to documenting behavioral risk and negotiating a risk-reduction plan. These issues would likely be resolved if recruitment into PCM was reserved until clients made the commitment to work with the prevention case manager to change their risk behaviors and address co-factors. Case manager misinterpretation of the client-centered approach to counseling may also be an important barrier to assessing and serving clients (Wolf et al., 1996). Instead of using client interests and concerns as a springboard to assessing and addressing risk, case managers often left it up to the client to dictate the course of their sessions; if clients did not raise prevention concerns or request behavioral counseling, discussions around HIV were typically bypassed and attention focused on the topics clients wanted to discuss. A study conducted by the AO-SFDPH that examined the provision of HIV prevention referrals among persons receiving HIV counseling and testing services drew similar conclusions about the misuse of the client-centered model (Marx et al., 1999). Better training of case management staff regarding interpretation and implementation of the client-centered approach, as well as ongoing evaluation and monitoring of case managers, is clearly needed.

Referral provision

Although referral provision is one of the cornerstones of PCM, a surprisingly large proportion of clients lacked referrals to ancillary prevention, health and social services. While the paucity of referral provision may have been due to clients being at low risk, we found no significant differences between persons at high, low or no risk in terms of referral receipt. Of note was that HIV-positive clients were significantly less likely to have received a referral (especially for HIV prevention and disclosure assistance services); this may be due to a lack of understanding regarding the difference between PCM and the CARE-funded case management many positive clients were most likely receiving. While the great majority of clients did not receive a referral, most of those getting a referral received some type of follow-up assistance and accessed one or more of the referrals they received. Consistent referral provision in and of itself can be an effective and cost-effective component of HIV prevention (Heumann et al., 2001; Marx et al., 1998), however it is vital that case managers receive training on assessing need for

ancillary prevention, health and social services and methods of providing referrals and linkage.

Staffing issues

The complete turnover of staff at four out of seven agencies during the six months of the evaluation may account for the problems case managers had with client recruitment, assessment and retainment and with the delivery of appropriate services. Inability to attract staff with advanced clinical training as well as inadequate ongoing training and support also hampered the programs we evaluated. Providing case management staff with salaries commensurate with their training and skills and with advanced training on effective recruitment strategies, techniques for behavioral and psychological risk assessment, client retention and referral provision would greatly improve PCM. To guard against staff burn-out and promote professional satisfaction, agencies should allocate adequate time and resources for case managers to complete client charts and evaluation paperwork, participate in clinical supervision and foster the connections with other agencies needed to facilitate successful linkage.

Cost

At the current reimbursement rate, one client session of PCM is almost four times more expensive than the next most costly prevention intervention (individual risk-reduction counseling) and eight times more expensive than one client contact through venue-based outreach. The primary reason for the high cost of PCM is time—both the face-to-face time between case manager and client and time spent working on behalf of clients. Cost-effectiveness studies are needed to determine whether PCM, as compared with less expensive individual-level interventions, better achieves long-term behavioral changes among those persons at highest risk for transmitting or acquiring HIV.

Limitations

Our evaluation has some limitations. We evaluated PCM programs in only one urban area and, as such, our findings cannot be generalized to programs elsewhere. The potential bias due to the large amount of missing client-level data for some of our participating programs may have led to an under-reporting of risk behaviors, services delivered, referrals and linkage assistance provided, referrals accessed and an overestimation of deficiencies in client risk and services provided. Since the majority of clients were self-referred or referred by other agencies, it is possible that either the worried well or

those who are least able to reduce risk behaviors (persons less likely to utilize intensive prevention services) are over-represented. This may result in more negative findings regarding program success. However, our conclusions based on the quantitative data collected were largely confirmed in our qualitative interviews with case managers and program directors of current and former programs. Interviewers probed for successes, as well as barriers and problems facing programs; given the disorganization of the PCM landscape at the time of the evaluation, problems and barriers were stressed and very little was mentioned in terms of successes. Since both the qualitative component of the evaluation and the quantitative data collected focused largely on process issues and barriers to program implementation, a negative bias may have been introduced regarding PCM staff's perceptions of the potential success of PCM in terms of reduction of high-risk behavior over time. While we assessed the costs associated with service delivery, we did not assess the cost-effectiveness of PCM in terms of risk reduction, linkage to ancillary services or HIV infections averted.

Conclusion

This evaluation highlights a number of organizational standards that can improve the implementation of PCM. At the onset of contract negotiations, funding agents should provide strong direction regarding the theoretical concepts driving PCM, stated goals and objectives for clients, proven strategies for client recruitment and service delivery, requirements for reliable data collection and standards for assessing agency capacity for developing and maintaining a viable program. It is vitally important that providers be supplied with written protocols on eligibility criteria, client assessment, gaining client commitment, mandatory services, standardized data collection and minimum standards for staff qualifications, clinical supervision and ongoing training. To insure effective and consistent program performance, agency reimbursement should be tied to documented performance indicators on baseline risk behaviors, number of sessions, referral provision and successful linkage, and longitudinal behavioral risk reduction. We also found that agency adherence to new policies, protocols and data collection tools improves substantially when they are developed collaboratively between funding and provider agencies. Our evaluation demonstrates that programs whose primary goal is to provide treatment and support for alcohol and other substances, and programs working outside of the clinical office-based setting, were often the most successful at client recruitment/retention and deli-

vering appropriate case management services. Integrating PCM into general mental health and substance abuse treatment programs may stand a better chance of eliciting client commitment over an extended period of time, especially for clients with low perceived risk; it may also help reduce costs associated with stand-alone programs. PCM programs that are predominantly field or outreach-based may also prove a viable means of delivering PCM services to clients who are otherwise unable to keep appointments or reluctant to come into an office setting. Finally, since PCM is resource and labor intensive, behavioural outcome evaluations and cost-effectiveness analyses comparing PCM to other less costly and intensive intervention strategies are needed.

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