Beyond Screening for Domestic Violence
A Systems Model Approach in a Managed Care Setting
Brigid McCaw, MD, William H. Berman, PhD, S. Leonard Syme, PhD, Enid F. Hunkeler, MA

Background: Implementation of screening guidelines for domestic violence has been challenging. The multifaceted “systems model” may provide an effective means to improve domestic violence screening, identification, and intervention in the healthcare setting.

Methods: We developed: (1) a systems model approach using tools for effective referral, evaluation, and reporting of domestic violence; (2) materials for distribution to female patients; (3) training for social service and mental health clinicians to provide domestic violence evaluation; and (4) strong links to the community.

Setting: A nonprofit, managed care facility in Richmond, California.

Participants: Staff and members of the managed care plan.

Main Outcome Measures: (1) Increased screening for domestic violence by clinicians; (2) increased awareness of the healthcare facility as a resource for domestic violence assistance; and (3) increased member satisfaction with the health plan’s efforts to address domestic violence.

Results: The number of clinician referrals and patient self-referrals to an on-site domestic violence evaluator increased more than twofold. A pre-intervention and post-intervention phone survey of members seen for routine checkup showed an increase in member recall of being asked about domestic violence. After intervention, statistically significant increases were seen in members’ perception that the health plan was concerned about the health effects of domestic violence ($p<0.0001$) and about members’ satisfaction with the health plan’s efforts to address this issue ($p<0.0001$).

Conclusions: A systems model approach improved domestic violence services in a managed care health setting within 1 year and affected clinicians’ behavior as well as health plan members’ experience. This successful implementation makes it possible to address critical research questions about the impact of a healthcare intervention for victims of domestic violence in a managed healthcare setting.


Introduction

Domestic violence is a common, costly, and complex health problem. An estimated 7% to 14% of U.S. women are currently in abusive situations,1 22% will be assaulted by an intimate partner during their lifetime,1 and at least $1.8 billion is spent annually (1994 estimate) for direct medical care to victims.2 In addition, domestic violence causes substantial medical consequences for female victims and their children.3–6 The value of the healthcare setting for domestic violence treatment is that it provides an opportunity for early identification, tailored interventions, and primary prevention; these opportunities are unavailable in other environments, such as the criminal justice system.

During the past decade, healthcare professionals have received training designed to improve domestic violence screening through better recognition and knowledge of how to ask about domestic violence. Despite this training, however, most clinicians do not routinely screen for domestic violence.7,8 In fact, the consensus among researchers is that continuing medi-
cal education (CME) by itself is an ineffective method for changing clinician behavior in domestic violence screening.\textsuperscript{9–11} We might even expect CME to be particularly ineffective for domestic violence because of the complexity of this issue: None of its processes—disclosure, seeking services, or recovery—are straightforward.\textsuperscript{12} In their routine practice, most clinicians and administrators find that guidelines for clinical prevention services—such as guidelines for domestic violence evaluation—have been easier to develop than to implement. Recent reports suggest that a more comprehensive systems approach may be necessary to affect the frequency and quality of screening by physicians.\textsuperscript{13–15} Several models have been advanced; although the details and focus have varied, most have recommended a multifaceted approach.\textsuperscript{16–21} In recognition of the complexity of domestic violence, the limits of CME to improve physician screening, and learnings from effective prevention programs for other clinical and safety issues, we designed and implemented a systems model approach. This article describes the components, implementation, and evaluation of our program. By tracking referrals from clinicians to domestic violence specialists and by questioning women members after they visited the facility for a routine checkup, we tested the hypothesis that the intervention would increase provider screening and referral, increase the percentage of members who recalled being screened, increase the perception that the healthcare facility was a resource for help with domestic violence, and increase member satisfaction with the health plan’s efforts to address this issue.

Methods

Setting

The Family Violence Prevention Project was conducted from May 1998 through May 1999 at the Richmond, California, facility of the Kaiser Permanente (KP) Medical Care Program, a nonprofit, closed-panel, group-model health maintenance organization (HMO) with approximately 3 million members and 33 facilities in Northern California. (Approximately 29% of the insured population in the San Francisco Bay/Sacramento area is enrolled in the Kaiser Foundation Health Plan.) The KP Richmond facility serves approximately 71,000 members of Kaiser Permanente (KP) Northern California and KP Richmond Medical Center (1998–1999).\textsuperscript{a}

<table>
<thead>
<tr>
<th>Percentage of Population</th>
<th>KP Northern California (N=2,028,000)</th>
<th>KP Richmond Medical Center (N=71,000)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ethnicity</strong></td>
<td></td>
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<tr>
<td>White, non-Hispanic</td>
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<td>7.2</td>
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<tr>
<td>Latino</td>
<td>11.6</td>
<td>15.6</td>
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<tr>
<td>Asian</td>
<td>15.7</td>
<td>16.0</td>
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<tr>
<td>Other</td>
<td>1.5</td>
<td>1.6</td>
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<td><strong>Education</strong></td>
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<td>High school graduate</td>
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<tr>
<td><strong>Annual income</strong></td>
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<td>37.0</td>
</tr>
<tr>
<td>$25,000–$50,000</td>
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</tr>
<tr>
<td>&gt;$50,000</td>
<td>36.2</td>
<td>29.0</td>
</tr>
</tbody>
</table>

\*Adapted and reproduced by permission of Gordon\textsuperscript{23} and publisher from “Characteristics of adult health plan members in the Northern California region, as estimated from the 1999 Kaiser Permanente Member Health Survey: regional and medical center service area populations” (Table 1).

Intervention

The Family Violence Prevention Project consisted of four interrelated components: (1) a supportive environment, (2) screening and referral, (3) on-site domestic violence services, and (4) links with the community. A supportive environment was established by using the physical environment of the facility to inform health plan members that domestic violence is an important health issue and to encourage patients to discuss domestic violence with their healthcare practitioner. Pamphlets, resource cards in rest rooms, examination room posters, and media outreach in the form of a member newsletter were provided. Given that many women involved in violent relationships do not identify themselves as victims, materials using simple language to describe abusive behaviors were designed to assist in self-recognition.

Screening and referral for domestic violence were provided by frontline (primary care and emergency department) clinicians. In addition to brief, focused staff training during departmental meetings, clinicians were given environmental prompts, feedback on referrals, and materials to facilitate their work (e.g., toolkits, examination room posters, patient information materials, and pocket reference cards outlining clinical practice guidelines). To address a major concern of clinicians—often expressed as: “What do I do if she says ‘yes’?”,\textsuperscript{24} the program was designed to ensure easy access to an on-site mental health clinician with special training in domestic violence. Specialty departments (orthopedics, surgery, occupational medicine, and ophthalmology) were also given general information about the program and instructed on the protocol for referral.

On-site domestic violence services by a mental health clinician provided victims with a danger assessment, safety planning, access to an on-site support group, and information about resources in the community. Although all mental

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health clinicians (e.g., LCSW, PhD, MFCC) received training in domestic violence assessment and intervention, a psychiatric social worker who had helped to develop the program provided services for most of the referred patients during the intervention year. Referral to the domestic violence specialist was designed to be simple, and patients could be seen immediately when necessary. Referrals were tracked in a database to facilitate follow-up.

The domestic violence specialist used linkages to community agencies to help victims obtain necessary services, including access to a 24-hour crisis line, emergency housing, and legal assistance. A crisis response team from the local advocacy agency was available to come to the facility to provide immediate assistance.

Phased Implementation

Implementation of the intervention was done in two phases. The first phase focused on improving on-site domestic violence services and community linkages so that the mental health professionals would be ready to receive referrals and to refer patients to appropriate community services. During two in-service trainings, which included local community advocates, mental health clinicians reviewed the dynamics of domestic violence, triage and assessment for comorbidity, tips on how to do danger assessment and safety planning, and the protocol for referral and follow-up. A psychiatric social worker served as the trainer, provided follow-up for referrals, and directed the on-site support group. Previously existing relationships with advocacy groups, law enforcement, and county health services were solidified through bimonthly meetings with members of the community advocacy staff and via participation in a county domestic violence advisory group and death review team.

The second phase focused on improving screening and referral and on creating a supportive environment. This phase was initiated with a lunch presentation, given by a domestic violence expert, to which all staff were invited. Receptionists, medical assistants, physical therapists, and nurses received a 30-minute in-service training presentation that included a film about domestic violence and information about resources available for patients and employees at the KP Richmond facility. At departmental meetings, primary care and emergency department clinicians were given brief updates on how to incorporate routine screening, how to recognize “red-flag” identifiers and comorbid conditions, and how to respond to and successfully refer members who have been victims of domestic abuse. Simple, practical steps (e.g., placing resource cards in restrooms and displaying posters and patient education materials in examination rooms) were emphasized as well as direct inquiry about domestic violence.

Clinical departments were encouraged to choose “increasing DV (domestic violence) awareness” as a general departmental goal and then were provided quarterly reports on number of referrals, proportion of examination rooms containing domestic violence materials, and use of a “DV” stamp on progress notes. This reporting method was already used for improving Health Plan Employer Data and Information Set (HEDIS) measures and other services (e.g., immunization, mammography, and smoking cessation advice).

Outcome Measures

The main outcome measures were:

1. increased domestic violence screening by clinicians, as measured by patient referrals to the domestic violence specialist and by health plan–member responses to telephone survey questions after a routine medical visit;
2. increased awareness of the healthcare facility as a resource for domestic violence assistance, as measured by increased self-referral for domestic violence services and by health plan–member responses to the telephone survey; and
3. increased patient satisfaction with the health plan’s efforts to address domestic violence, as measured by responses to the telephone survey questions, evaluated by using a 5-point Likert scale.

Data Collection

Clinician referrals. We tracked referrals from clinicians to the domestic violence specialist to determine outcome measure 1. Each referral was entered into a secure database by an administrative assistant, who also recorded date of referral, identity of the referring clinician and department, and a phone number for safe follow-up. A unique identifying number was used for each patient. Follow-up contact was made with approximately 67% of those referred. At follow-up, additional information about members’ ethnicity and the number and ages of children living at home were collected.

Member telephone survey. This instrument was used to collect information about outcome measures 1, 2, and 3 (Table 2).

Health plan members were eligible to participate in the study if they were female, aged 18 through 60 years, and had a medical visit designated “routine” by the clinician in the internal medicine or obstetrics/gynecology departments. Two random samples of health plan members were drawn in May 1998 and May 1999, and these patients were contacted sequentially (most within a month of their visit). The sample sizes consisted of 190 women pre-intervention and 207 women post-intervention, and did not include the same women.

The member telephone survey, which had been previously tested and used by researchers at the KP Northwest Region Center for Health Research, was modified by adding two questions about whether clinicians made a general inquiry about family relationships (Table 2). The questionnaire was administered by female interviewers trained to conduct these interviews by phone. The study design and survey instruments were approved by the KP Northern California Institutional Review Board.

Data Analysis

Questionnaires from the member telephone survey were analyzed using t tests for comparisons of mean scores, chi-square tests to compare relative frequencies, and regression analyses to test the independent and combined effects of multiple variables (e.g., demographics and history of domestic violence).
Results

For a description of the demographic characteristics of the study sample, see Table 3.

Number of Referrals

The number of referrals increased 260%, from 51 referrals during the pre-intervention period to 134 during the post-intervention period. As shown in Figure 1, referrals were received from a variety of departments. Patients themselves were another important source of referrals.

Member Recollection of Being Screened, Perception That Health Plan Cares About Domestic Violence, and Satisfaction with Health Plan Efforts

We conducted multivariate logistic regressions by using Questions 1 through 5 (Table 2) as dependent variables and a multivariate linear regression by using Question 6. The following demographic variables were entered into the equation, as were presence of any history of domestic violence and the pre-versus post-intervention variables: age; race (white vs nonwhite); marital status (married vs nonmarried); education (college educated vs not college educated); income (<$20K vs $20K); employment (yes vs no); and children (yes vs no). All analyses produced significant omnibus regressions, as presented in Table 4. Table 4 also presents the effect of the intervention (pre-vs post-intervention cases) when

Table 2. Selected telephone survey questions about health plan members’ visit to Kaiser Permanente (KP) Richmond Medical Center departments of obstetrics/gynecology or internal medicine

1. Do you recall any clinician at the visit asking you about your family relationships or home?
2. Did any clinician at the visit ask you whether you had any problems with a current or past partner?
3. Did any clinician at the visit ask you whether domestic violence such as threats, emotional, or physical abuse was a problem for you?
4. Did you know that the health plan is concerned about how domestic violence affects the health of its members?
5. At any time during a visit to the KP Richmond Medical Center, did you see any posters, cards, or handouts with information about domestic violence?
6. In general, how satisfied are you with the efforts of KP clinicians and staff to respond to the problem of domestic violence?
7. How appropriate do you think it is for clinicians to ask all their women patients about possible experiences of domestic violence?
8. At any time in the past 12 months, were you harmed or threatened, either physically or emotionally, by someone you either live with or are close to? Or forced by them into sexual activities when you did not want to participate?
9. At any time before the past 12 months, were you harmed or threatened, either physically or emotionally, by someone you live with or are close to, or forced by them into sexual activities when you did not want to participate?

Table 3. Demographic characteristics of female health plan members surveyed by telephone before study intervention (n=190) and after study intervention (n=201)

<table>
<thead>
<tr>
<th>Demographic characteristics</th>
<th>Before intervention</th>
<th>After intervention</th>
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<tbody>
<tr>
<td>Ethnicity</td>
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<td></td>
</tr>
<tr>
<td>White, non-Hispanic</td>
<td>59 (32.6)*</td>
<td>49 (24.6)*</td>
</tr>
<tr>
<td>African American</td>
<td>79 (43.6)*</td>
<td>69 (34.7)*</td>
</tr>
<tr>
<td>Latino</td>
<td>23 (12.7)*</td>
<td>35 (17.6)*</td>
</tr>
<tr>
<td>Asian</td>
<td>8 (4.4)*</td>
<td>25 (12.6)*</td>
</tr>
<tr>
<td>Other</td>
<td>12 (6.6)*</td>
<td>21 (10.6)*</td>
</tr>
<tr>
<td>Education</td>
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<td></td>
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<tr>
<td>High school graduate or higher</td>
<td>184 (96.8)</td>
<td>189 (94.0)</td>
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<td>Income</td>
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<td>&lt;$20,000</td>
<td>25 (15.1)</td>
<td>40 (21.0)*</td>
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<tr>
<td>Marital status</td>
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<tr>
<td>Single</td>
<td>46 (24.5)</td>
<td>58 (29.3)</td>
</tr>
<tr>
<td>Married</td>
<td>106 (56.4)</td>
<td>104 (52.5)</td>
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<tr>
<td>Separated, divorced, or widowed</td>
<td>36 (19.5)</td>
<td>36 (18.2)</td>
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<tr>
<td>Employed</td>
<td>131 (69)</td>
<td>158 (80)*</td>
</tr>
<tr>
<td>Have children living at home</td>
<td>151 (82)</td>
<td>140 (71)*</td>
</tr>
<tr>
<td>Domestic violence in past 12 months</td>
<td>9 (5.0)</td>
<td>17 (8.5)</td>
</tr>
<tr>
<td>History of domestic violence</td>
<td>55 (31.1)</td>
<td>68 (34.3)</td>
</tr>
</tbody>
</table>

* Number responding; sample size variation due to missing data.
* p<0.05.

Figure 1. Source and number of referrals to domestic violence evaluator before and after study intervention.
this variable was entered last into the equation (variance due to demographic and domestic violence was controlled for). The difference between the pre- and post-intervention sample was statistically significant for all these variables, showing improvement in patient recall of questions regarding family problems, improvement in awareness of both information and concern on the part of the HMO, and increase in overall satisfaction with efforts to address domestic violence.

Responses to Questions About the Appropriateness of Clinicians Screening All Women Patients

Responses to questions about the appropriateness of clinicians screening all women patients did not reflect a substantial change between pre- and post-intervention periods; the majority of women (80%) felt that clinicians should screen all their women patients for domestic abuse. An important question is whether information exposure (Question 5, Table 2) and clinicians’ inquiries about domestic violence (Question 3, Table 2) are both necessary to have an effect on members’ attitudes or whether they contribute independently to the change in attitude.

Regression analyses examined the effect of information exposure and clinician inquiry about domestic violence (alone or in combination) on the outcome measures: (1) members’ awareness that the health plan is concerned about domestic violence; and (2) member satisfaction with the health plan’s efforts to respond to domestic violence. For awareness that the health plan is concerned about domestic violence, the direct effect of information exposure (within each year) and clinician inquiry (within each year) was statistically significant at the 0.05 level, but the interaction effect was not significant. For member satisfaction, clinician inquiry was significant at the 0.05 level, showing a 0.7-point change on a Likert scale. This result means that both information exposure and clinician inquiry about domestic violence contribute independently to the improvement in member awareness but that clinician inquiry was more strongly associated with member satisfaction with the health plan’s efforts.

Discussion

Domestic violence is a complex issue. None of its processes—disclosure, seeking services, or recovery—are straightforward. The conventional approach to health risks, such as in smoking and alcohol use—“The provider asks, the patient discloses, the provider helps”—may not be a good description for an intervention with patients struggling with domestic violence.12,17 One response to these issues is the “systems model,”18 a comprehensive approach to screening, identification, and intervention that uses what has been learned from effective prevention programs for other clinical and safety issues.

We demonstrated that this systems model approach can effectively improve the healthcare response to domestic violence by increasing the amount of screening (as reported by women members) and by increasing the number of referrals for further domestic violence evaluation. Although we expected success in improving screening rates, we did not anticipate the substantial impact the program had on women’s satisfaction with the health plan’s efforts to address domestic violence and the fact that women would seek services directly. That the intervention directly affected women members was shown by the increased member self-
referral for domestic violence evaluation and by our pre- and post-intervention telephone survey results, which showed dramatic increases in member satisfaction with the health plan’s efforts to address domestic violence and member awareness of the healthcare facility as a resource for domestic violence assistance (Table 4). Moreover, this improvement was accomplished by taking advantage of existing infrastructures and without taking clinicians away from their clinical practice.

Concerning the studies that have recommended a multifaceted approach,16–20 a review article21 evaluating the experience of one of these approaches (the Precede/Produce model) for smoking, mammography, immunizations, and use of bicycle safety helmets in a managed healthcare setting identified components of successful prevention programs. Thompson et al.26 applied this model to domestic violence in a primary care setting. Using a group randomized trial design, they were able to show that an intensive, multifaceted program resulted in sustained improvement (as long as 21 months) in clinicians’ sense of self-efficacy and in five other domains believed to be important to identification and management of domestic violence.26 Two recent articles14,27 reporting on a system change–training model documented similar improvement in attitudes and knowledge among providers in an emergency department setting. By evaluating not only referrals for domestic violence but also the actual experience of women health plan members, our project provides additional evidence that this approach is effective and promising. We also show that this approach can be taken using a low-intensity clinician training component. Moreover, even in settings in which a more comprehensive approach cannot be readily implemented, “environmental orchestration” can have an effect, as it did in our study. For example, the examination room posters serve the dual purpose of defining and introducing the issue for patients as well as prompting clinicians to screen. Prompts such as this have been an effective method of reminding physicians to offer other kinds of prevention services.28

We do not believe that the increased patient awareness and number of referrals seen in our study merely reflect increased societal awareness of domestic violence. To have had a measurable effect within the study period, societal awareness of domestic violence would probably have had to increase sharply, as after an exceptionally well-publicized domestic violence event occurring during the intervention period. We could not identify any such event occurring during the study period. A possible concern is whether the improvements we demonstrated will persist after the initial enthusiasm associated with a new program wanes. Given that the number of domestic violence referrals to the on-site evaluator has continued to increase during the 24 months after the intervention (a 25% increase each year), we are optimistic that the trend of needed referrals will continue.

How representative is the population we studied? Our sample was a socioeconomically and ethnically diverse population representative of many other urban localities. Because of its success, this project is being disseminated to other KP facilities with a more rural population so that the issue of an urban bias can be more fully evaluated.

In response to the concern of whether this kind of systems model can be successfully adopted in or adapted for other clinical settings, we believe that the four main components of the systems model can be transferred. The ready availability of social service or mental health providers—as is found in many public health clinics, academic settings, and managed care organizations—probably facilitates adoption of the model. Other strategies can effectively coordinate care for domestic violence victims among healthcare and advocacy services, as has been demonstrated by the Health Insurance Plans (HIP) of Greater New York and Victim Services to Prevent Violence in New York.29 We think it is now time to ask how it can be done, not whether it can be done. Other experts in the field have similarly suggested “an interdisciplinary team approach and collaborative partnership.”17,30,31 In a recent report from the National Conference on Violence and Reproductive Health sponsored by the Centers for Disease Prevention and Control, Cole13 outlined a systems model approach for use in various settings.

Successful use of this systems model approach will provide the opportunity to address the next fundamental issue: Do domestic violence victims benefit from healthcare interventions, and, if so, what kind and timing of intervention is most effective?13,32,33 Our goal during the next 5 years is to contribute answers to these questions. The current focus of the field of domestic violence prevention on training clinicians to screen for domestic violence must not eclipse the ultimate aim: to develop a healthcare environment that goes beyond screening and assists domestic violence victims to obtain the services they and their children need.

Conclusions

Our systems model approach successfully increased clinician screening and referral by: (1) focusing on familiar steps for clinicians to follow when a patient discloses domestic violence, (2) easy and reliable referral to on-site services, (3) strong linkages with community agencies, and (4) establishing an environment that prompts physicians to screen and informs patients about services. A systems model approach can thus increase not only identification but also referral for domestic violence victims when they access healthcare services—regardless of whether victims present with
injuries, are recognized during routine screening, or refer themselves for assistance.

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References


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