

# Describing a Nurse Case Manager Intervention to Empower Low-Income Men With Prostate Cancer

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**Purpose/Objectives:** Describe and categorize nurse case manager (NCM) interventions for low-income, uninsured men with prostate cancer.

**Research Approach:** Descriptive, retrospective record review.

**Setting:** Statewide free prostate cancer treatment program in which each patient is assigned an NCM.

**Participants:** 7 NCMs who developed interventions based on empowerment through increasing self-efficacy.

**Methodologic Approach:** NCM entries were extracted and coded from 10 electronic patient records, line by line, to reveal initial themes. Themes were grouped under categories. Investigators then reviewed and expanded these categories and their descriptions and postulated linkages. Linkages and relationships among categories were empirically verified with the original data. NCM entries from another 20 records were prepared in the same manner as the original records. Modifications were made until the categories contained all of the data and no new categories emerged. Categories were verified for content validity with the NCMs and reviewed for completeness and representation.

**Main Research Variables:** NCM interventions.

**Findings:** Categories of NCM interventions emerged as assessment, coordination, advocacy, facilitation, teaching, support, collaborative problem solving, and keeping track. Categories overlapped and supported each other. NCMs tailored interventions by combining categories for each patient.

**Conclusions:** The skillful tailoring and execution of intervention strategies depended on the knowledge, experience, and skill that each NCM brought to the clinical situation. NCM categories were consistent with the tenets of the self-efficacy theory.

**Interpretation:** The model, based on NCM interventions, provides a guide for the care of underserved men with prostate cancer. Components of the model need to be tested.

## Key Points . . .

- By increasing self-efficacy, nurse case managers can be key in delivering interventions that empower underserved men with prostate cancer.
- Low-income, uninsured men face a variety of barriers to receiving adequate prostate cancer treatment.
- Tailoring interventions to individual patient needs can be accomplished by skillfully selecting and blending strategies from several categories according to specific clinical situations.

tronic record in preparation for developing and testing a model of NCM care designed to empower low-income men with prostate cancer through enhancement of self-efficacy.

## Background and Literature Review

Since the inception of IMPACT, all patients were assigned an NCM to ensure that they did not become lost in the health-care system. As the program evolved, so did the NCM's role. The primary goal of IMPACT NCMs now is to empower patients through enhancement of self-efficacy. This provided the conceptual framework around which NCM interventions were developed.

### Empowerment

Empowerment is the process through which an individual's belief in his or her self-efficacy is enhanced or belief in his or her powerlessness is diminished (Conger & Kanungo, 1988). Through empowerment, individuals develop a sense of personal mastery regardless of outcomes (Davison & Degner,

What happens to a man who lives in his car when he is diagnosed with prostate cancer? How can a Mexican immigrant who speaks no English and lives in the United States learn to manage the side effects of his prostate cancer treatment? Improving Access, Counseling, and Treatment (IMPACT) to Californians with prostate cancer is a state-funded program that provides prostate cancer treatment to uninsured men with incomes less than 200% of the federal poverty level. The cornerstone of this program is the nurse case manager (NCM) care provided to every enrolled patient. Thus, this program offered a unique opportunity to describe the interventions employed by NCMs as they managed the care of low-income, underserved men with prostate cancer; develop a model of care; and test that model. The purpose of this study was to describe and categorize NCM interventions as they were documented in the IMPACT elec-

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1997). Empowerment can be accomplished through the identification of empowerment strategies, the provision of self-efficacy information, and the removal of sources of powerlessness (Conger & Kanungo). Empowerment through the enhancement of self-efficacy information increases participation in treatment decision making, the ability to cope during and after treatment, and satisfaction with treatment choice; it decreases levels of anxiety and affective distress and facilitates communication with physicians (Cassileth, Soloway, & Vogelzang, 1989; Johnson, Nail, & Lauver, 1988; Lev & Owen, 1996; Maly, Frank, Marshal, DiMatteo, & Reuben, 1998; Rainey, 1985; Strecher, DeVellis, Becker, & Rosenstock, 1986). Individuals with low incomes face multiple barriers to feeling empowered, including poor access to care, lack of resources, low literacy, and distrust of the healthcare system (Bennett et al., 1998; Delfino, Ferrini, Taylor, Howe, & Anton-Culver, 1998; Optenberg et al., 1995). Application of the constructs from the self-efficacy theory to empower low-income individuals holds potential, but, to date, it is untested.

## Self-Efficacy Theory

The self-efficacy theory (Bandura, 1977, 1986) explains and predicts how people influence their own motivation and behavior, including health behavior (O'Leary, 1985). According to the self-efficacy theory, behavior is influenced by outcome expectancies and efficacy expectancies (Maddux & Stanley, 1986). Outcome expectancy is the belief that a behavior can influence the outcome of a situation. Efficacy expectancies are beliefs about one's ability to perform the influencing action. For instance, a man without insurance may believe that surgery would cure his prostate cancer (outcome expectancy), but his self-efficacy is low if he believes that he cannot have the surgery because he cannot pay for it (efficacy expectancy).

Outcome and efficacy expectancies are amenable to intervention (Strecher et al., 1986). Outcome expectancies evolve from information received about a situation and from prior experience. For example, a man with prostate cancer may have information about his disease from a variety of sources. The information may or may not be accurate, but it forms outcome expectancies for his prostate cancer. Teaching can correct misinformation and provide accurate information influencing outcome expectancies in an empowering manner.

Efficacy expectancies are influenced through mastery experience, persuasion, vicarious experience, and affective arousal. Strecher et al. (1986) believed that mastery experience through successful performance accomplishment is the most powerful source of efficacy expectations. For instance, a man may believe that exercising his pelvic muscles after surgery will help him regain continence sooner but may not know how to perform these exercises. His efficacy expectation will be low, but instructing and guiding him will increase his self-efficacy for exercising his pelvic muscles. Likewise, the unsuccessful experiences that people with low incomes often have because of barriers documented in the cancer-screening literature (Black, Schweitzer, & Dezelsky, 1993; Eakin & Strycker, 2001; Mahon, 2000; Robinson, Ashley, & Haynes, 1996; Scroggins & Bartley, 1999; Weinrich, Reynolds, Tingen, & Starr, 2000) can diminish efficacy expectations. Thus, creating successes should prove to be empowering.

Vicarious experience is the process of learning through observation of events or other people (Strecher et al., 1986). An

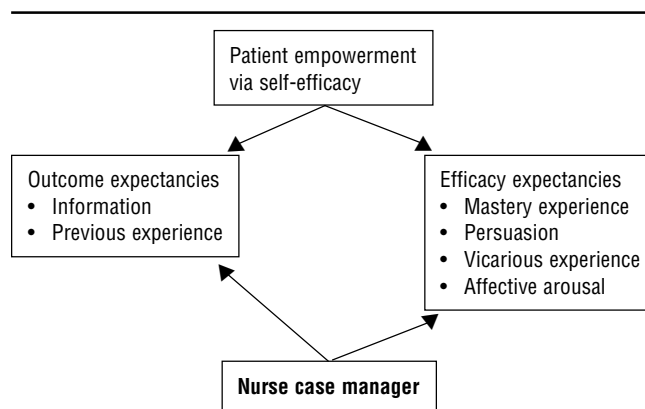
expectation of mastery can be created vicariously if the model, similar to the observer, is seen overcoming difficulties (Strecher et al.). Examples of this can be found in programs that successfully used peers to recruit participants (Powell, Gelfand, Parzuchowski, Heilburn, & Franklin, 1995), teach healthcare information (Weinrich et al., 1998), assist in navigating the system (Black et al., 1993), and model desired behaviors (Abbott, Taylor, & Barber, 1998).

Verbal persuasion occurs when a healthcare provider verbally attempts to convince an individual that he or she should or should not perform an activity (Strecher et al., 1986). Although not as effective as mastery and vicarious experience, encouraging a man in his ability to perform a particular task (e.g., catheter care) can enhance his self-efficacy. Maliski, Heilemann, and McCorkle (2001) found that men considered this to be a valuable part of a nursing intervention after prostatectomy.

Affective arousal, as perceived through one's physiologic state, can influence efficacy expectations (Bandura, 1977; Strecher et al., 1986). People who are feeling stressed or fatigued are more likely to expect failure (Bandura, 1977). For instance, a man may understand that gradually increasing activity after having prostate cancer surgery is helpful, but, because he is fatigued, he feels less able to do so. Perception of physiologic states following surgery or during various other treatments may be puzzling or misinterpreted. Giving information and reassurance is postulated to be empowering through providing a context for interpretation. Figure 1 shows the postulated path through which the NCM influences self-efficacy to promote empowerment.

## Opportunities to Empower Across the Prostate Cancer Trajectory

Prostate cancer and its treatment trajectory offer opportunities to empower men at a number of pivotal points. After diagnosis and staging, treatment decision making is one such point, especially for men with early-stage disease. This can be daunting, particularly when surrounded by the stress of receiving a cancer diagnosis (Cimprich, 1998). Several studies have investigated patient decision making within a variety of contexts (Bilodeau & Degner, 1996; Davison, Degner, & Morgan, 1995; Deber, 1994; Degner et al., 1997; Degner & Sloan, 1992; Hornung et al., 1998; Hughes, 1993; Kim et al., 2001; Moul, Esther, & Bauer, 2000; Pierce & Hicks, 2001).



**Figure 1. Nurse Case Manager Conceptual Model**

Most agree that having adequate and accurate information is an essential piece of the decision-making process. This is a prime opportunity for empowerment. The results of several studies suggest that individuals feel more in control when they have sufficient information (Maliski et al., 2002; Moul et al.).

Treatments for prostate cancer (radical prostatectomy, radiation therapy, watchful waiting, or hormone therapy) have side effects with which men must cope. Having information to form realistic outcome and efficacy expectancies can provide a sense of control (Maliski et al., 2001). Men being treated for prostate cancer may be affected by incontinence, impotence, a decline in libido, bowel dysfunction, pain, and fatigue, depending on stage and treatment. Knowing how to manage these symptoms and receiving encouragement to perform activities that minimize disruption can empower men to resume life activities sooner (Maliski et al., 2001). In addition, being able to interpret physiologic sensations can empower men to feel more confident in their progress through treatment.

Even when prostate cancer is advanced, opportunities exist for empowerment. Men with advanced disease face treatment choices between observation and treatment modalities that, although not curative, slow prostate cancer growth (Clark et al., 1997) by ablating testosterone. Hormone ablation may result in significant side effects, including loss of libido, erectile dysfunction, gynecomastia and tenderness, hot flashes, nausea, and fatigue (Clark et al.). Additionally, orchiectomy results in a permanent change in body appearance with the attendant symbolic effects (Clark et al.). This is another point in the prostate cancer trajectory where men need to be informed, confident participants in the treatment decision-making process. As with early-stage treatment decisions, men need to have adequate and accurate information and be able to identify preferences based on treatment effects and discuss options with their physician.

Bone metastasis can be a painful and debilitating symptom in patients with advanced prostate cancer (Glajchen & Moul, 1996; Heim & Oei, 1993; Revilla et al., 1998; Rico et al., 1996; Sciuto et al., 2002). Additionally, hormone therapy increases the risk of osteoporotic bone fracture (Daniell, 2001; McNamara & Sullivan, 1995; Smith et al., 2001; Townsend, Sanders, Northway, & Graham, 1997). Empowering men to control their pain and minimize their risk for fractures can enhance their health-related quality of life. Again, the opportunity exists to teach, model, advocate, and encourage. End-of-life issues may surface at this time, presenting a need to manage these concerns. Empowerment can take the form of promoting patients' ability to cope through information provision, problem solving, advocacy, and encouragement.

Throughout the treatment process, men need to be able to interact with the healthcare system to have their care needs met. This system is not always "user friendly," especially for uninsured men with low incomes. Thus, intervening as men are being treated for prostate cancer provides opportunities to model problem-solving approaches, minimize barriers to promote successful interaction, and encourage self-initiated activities to optimize health care.

### **Role of the Nurse Case Manager in Promoting Empowerment**

Literature about NCM roles and definitions is inconsistent. Nurse case management has been described as encompassing education, bridging gaps, promoting self-efficacy, enhancing

self-care capabilities, coordinating care across settings, brokering services, advocating for patients, and providing hands-on care (Barry, McQuade, & Livingstone, 1998; Burkhart, 1991; Forbes, 1999; Noonan, 1997; Starcher, 1997; Swindle, Weyand, & Mar, 1994). The roles, titles, and definitions of case management vary among institutions. Typically, case management refers to a hospital-based role that combines discharge planning and utilization review functions known as patient care coordination (McNamara & Sullivan, 1995; Sullivan, 1995). In home-based care, case management includes assessing the need for services, developing a plan of care, reassessing the client's situation, and linking individuals to services (Bear, Sauer, & Norton, 1999). Only Barry et al. dealt with the use of NCMs to promote self-efficacy, and none related to men with prostate cancer.

Research on nurse case management is beginning to appear in the literature. However, definition of the role tends to be institution bound and outcomes are inconsistent. Noel and Vogel (2000) reported results from a pilot study suggesting that the integration of nurse case management with telemedicine reduced hospital and resource costs of elderly homebound patients. In another study focusing on community-dwelling frail, elderly people, a randomized controlled trial of a nurse case management intervention was tested (Gagnon, Schein, & McVey, 1999). Results showed that those receiving case management were more likely to use emergency healthcare services, but no significant differences in quality of life, satisfaction with care, functional status, admission to the hospital, or length of stay were documented when compared to a control group. Another study investigating the effect of nurse case management on health-related quality of life in patients with AIDS demonstrated mixed results (Nickel et al., 1996). Conversely, results of a number of other studies demonstrated positive effects of nurse case management on outcome variables in a variety of settings (Aubert et al., 1998; Papenhausen, 1995; Sikka et al., 1999). None of these studies considered nurse case management in men with prostate cancer. The lack of a consistent model or definitions makes comparison and intervention building difficult. Thus, the current investigation was undertaken to describe and categorize NCM interventions directed toward patient empowerment to discover how interventions were implemented among underserved men with prostate cancer. This will lay the foundation for standardizing the NCM intervention and testing self-efficacy outcomes.

## **Methods**

### **Data Sources**

Design for the study was exploratory, incorporating retrospective record review, qualitative interviews, and content analysis to capture intervention strategies that were being used by the NCMs. The IMPACT electronic record was the primary source of data, but secondary sources included interviews with NCMs and meeting notes of weekly NCM teleconferences during which patient issues were discussed and suggestions for resolution of problems were obtained.

The IMPACT NCMs generally manage care for 30–40 patients of varying disease intensity, primarily via telephone. The seven IMPACT NCMs have diverse backgrounds. Three are master's prepared, and four have bachelor's degrees. All have at least five years of experience in public health, home

care, oncology, or urology. They all have undergone orientation to the IMPACT program and their role as NCMs. Notes from the records of 30 patients written by the seven NCMs were reviewed. All patients had each treatment except watchful waiting, ranged in age from 47–78 years, and were predominantly Latino or Caucasian (see Table 1). This is reflective of the population in the Los Angeles, CA, area. Also, 15 of the patients did not speak English, and 2 were homeless.

Procedures

Data were collected in two phases. Phase 1 included a review of the records of the first 10 patients enrolled in IMPACT. These notes covered a time span of six months and were entered into the IMPACT electronic clinical record by one NCM. A total of 174 notes resulted in 755 lines of data. Each line of data represented a single nursing action as recorded in the IMPACT electronic clinical record. All NCM entries were extracted from the patient files and entered into an electronic file after removing all identifying information. The data then were imported into NVivo software (Melbourne, Australia) for data management. This software program facilitates data coding, linking, and modeling.

Grounded theory (Strauss & Corbin, 1998) analytic techniques were employed for the analysis. The data were subjected to the process of open coding by the investigators. First, data were coded line by line. Each code represented the essence of the action in the line. From these codes, 31 themes were identified by clustering codes together under conceptual themes that characterized the intervention strategies appearing in the notes. These themes then were grouped further un-

der six broad representative intervention categories. The following is an example of this process.

- Raw data extracted from record: Spoke to doctor regarding patient’s desire to seek care from a different provider.
- Initial code: presenting patient preference
- Raw data: Doctor states he will respect wishes of patient.
- Initial code: obtaining patient preference
- Theme: intervening on behalf of the patient
- Category: advocacy

Next, the categories were discussed with the NCM who entered the notes. The NCM reviewed the categories to determine whether they accurately and completely described the interventions. Themes and categories that were not deemed to be complete or reflective of NCM practice were revised and reviewed iteratively until the NCM believed that the categories accurately and completely described her practice. After verification of category accuracy and completeness, axial coding was employed to postulate links between the categories. The original data were reviewed again to identify evidence for the proposed links. Modifications to the links were made based on this review; then, the data were revisited to confirm the postulated links.

Phase 2 involved the review of the records of another 30 IMPACT patients entered by six NCMs. This covered a time span of three months of NCM interventions. The NCM notes were extracted and managed in a similar manner as the first 10. In total, 352 notes resulted in 1,518 lines of data. Strategy themes resulting from the line-by-line coding were grouped under the established categories from phase 1. This led to the addition of two categories. Coding and categorization continued until all data were contained within the categories and no more new categories emerged. The data then were reviewed for evidence supportive of the proposed linkages among the categories.

Lastly, notes from the NCM weekly teleconferences were reviewed to further confirm the categories. The NCMs were involved in all teleconferences, and minutes were recorded. The investigator took notes during each teleconference regarding NCM management of patients whose NCM documentation was included in this study. These notes were coded and compared to the categories to check for consistency with and inclusion in the categories. Interviews were conducted with NCMs to elicit their comments on the representation and accuracy of the final categories and proposed links after they had the opportunity to review them.

Findings

Categories that emerged from the initial coding were assessment, facilitation, advocacy, coordination, teaching, and support. During the second phase of coding, two more categories, keeping track and collaborative problem solving, emerged, completing the model shown in Figure 2. Table 2 demonstrates how the strategies within the intervention categories corresponded with self-efficacy tenets. The categories complexly overlapped and supported each other in somewhat different configurations for each patient. Undergirding all of the interventions was the NCM’s ability to synthesize understandings from oncology, urology, and public health in managing care.

Assessment

Assessment is the process by which NCMs identified patient needs and selected strategies to meet those needs. Assessment

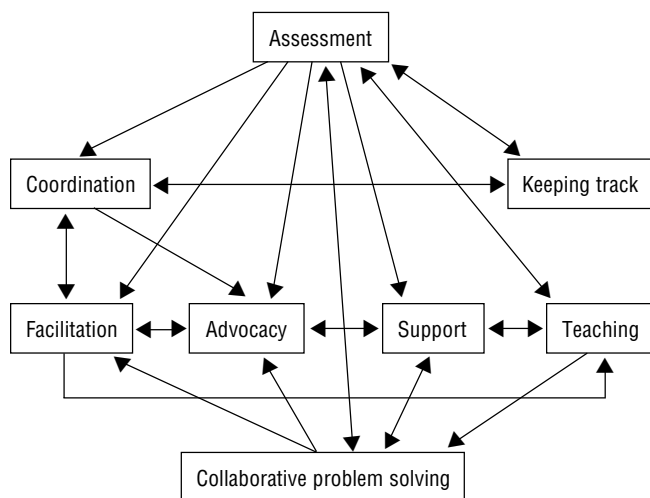
Table 1. Patient Characteristics

Characteristic	n	%
Age (years)		
45–49	2	5
50–54	5	13
55–59	10	25
60–64	17	43
65–70	4	10
> 70	2	5
Treatment		
RRP + HT	1	3
HT + RT	1	3
RRP + RT	1	3
RRP	17	43
RT	7	18
HT	13	33
WW	–	–
Ethnicity		
African American	7	18
Caucasian	14	35
Latino	17	43
Asian	1	3
Pakastani	1	3
Non-English speaking	15	38

N = 40

HT—hormone therapy; RRP—radical retroperitoneal prostatectomy; RT—radiation therapy; WW—watchful waiting

Note. Because of rounding, not all percentages total 100.



**Figure 2. Nurse Case Manager Categories and Linkages**

formed the foundation for selecting and tailoring strategies into individualized patient interventions. NCMs implemented assessment by synthesizing patient information from a variety of sources. These sources included medical records from previous and current care providers, contact with patients' physicians, and contact with patients and their family members. From these sources, NCMs gathered information about comorbidities, past medical and family histories, living situation, transportation situation, available resources and support, understanding of prostate cancer and its treatment, concerns and worries, emotional status, progress through treatment, and patients' preferences for care and treatment. All of these areas influence response to prostate cancer and its treatment. Using a standardized assessment tool developed for the IMPACT program, initial information was obtained during the first several contacts between the NCM and the patient. Thereafter, assessment was ongoing as new information became available. By synthesizing the gathered information with their own clinical expertise, NCMs were able to identify areas that needed intervention (e.g., barriers to care, lack of knowledge, unstable living situations) and creatively select interventions tailored to individual patient needs.

## Facilitation

Facilitation encompassed strategies that promoted successful self-action. This included expediting movement within the healthcare system by obtaining reports or making appoint-

ments, providing information and supplies that gave patients resources for self-management, encouraging and assisting patients to voice their preferences, allowing patients to discuss treatment options as they moved through the decision-making process, and arranging for translation services as needed to ensure that information was conveyed to patients in an understandable manner. Facilitation very often involved coordination strategies to assist a patient's self-action, such as calling ahead to a provider's office. This increased the likelihood that the patient's action would be successful. Facilitation frequently overlapped with advocacy.

## Advocacy

Through advocacy, NCMs gave voice to their patients' needs, concerns, and preferences. Strategies included obtaining records or information that patients needed but felt unable to retrieve themselves, representing patient needs and preferences to administrators and care providers, resolving medication and service payment issues, finding and establishing contact with medical practices that employ bilingual staff, and investigating clinical trials in which patients desire to participate. Advocacy strategies were used when patients needed someone to act on their behalf and often overlapped with facilitation, coordination, support, and teaching.

## Coordination

Coordination was the link among the categories. Strategies included contacting agencies, care providers, and patients to coordinate appointments; obtaining records, paperwork, and referrals; and arranging for medical supplies and medication. In addition, NCMs ensured that patients actually went to their appointments, facilitated transportation, and coordinated translation services as needed. Coordination often was accomplished by keeping track and assessment, which, at times, overlapped with facilitation and advocacy.

## Teaching

Teaching strategies were used when gaps in information or understanding were identified. Teaching was accomplished through direct explanation, provision of health education materials, referral to experts for more in-depth explanations, and answering patient and family questions. NCMs taught topics ranging from preprocedure instructions to postoperative expectations, including side effect and symptom management (e.g., incontinence, impotence), postoperative care skills, use of medication, pain control, and clarification of financial coverage issues. NCMs provided instruction for self-action, such as how to arrange transportation, along with telephone numbers

**Table 2. Nurse Case Manager Categories, Self-Efficacy Category, and Expectancy Influenced**

Nurse Case Manager Category	Self-Efficacy Categories	Expectancy
Assessment	Need for mastery, modeling, persuasion, and affective	Accuracy of outcome expectancies and efficacy expectancies
Facilitation	Mastery and persuasion	Efficacy
Advocacy	Modeling, mastery, and persuasion	Efficacy
Coordination	Mastery and modeling	Efficacy
Teaching	Affective, mastery, persuasion, and modeling	Efficacy and outcome
Support	Affective, persuasion, and mastery	Efficacy and outcome
Collaborative problem solving	Mastery, persuasion, and modeling	Efficacy
Keeping track	Modeling and persuasion	Efficacy

for contacts. This often followed collaborative problem solving and was kept track of with support.

## Support

Support was ubiquitous throughout all other categories. Supportive actions included providing patients with the NCM's telephone number and encouraging them to call, responding promptly to patient calls, calling to follow up after appointments or problems, reassuring anxious patients and family members, being a sounding board for patients and families, supporting patient decisions, keeping patients and families informed about all aspects of care, assisting in the interpretation of signs and symptoms relative to clinical progress, and encouraging and positively reinforcing patients' efforts at self-action. Patients expressed appreciation to NCMs for support, indicating that they believed that this was a unique and valuable aspect of the IMPACT program.

## Collaborative Problem Solving

This category emerged from actions in which NCMs guided patients through a problem-solving process. Strategies used were active listening, purposeful questioning, identification of resources available, elicitation of patients' preferences, identification of action needed to accomplish solutions, and reinforcement of patients' capabilities. Through this intervention, NCMs assisted with problem solving by providing needed information, assisting in identification of values, and guiding patients to their own solution; however, they did not solve problems for patients. Throughout the process, the NCMs reinforced patients' capabilities and their learning of problem-solving skills. Thus, collaborative problem solving overlapped with support, facilitation, and teaching.

## Keeping Track

Strategies for keeping track of patients went beyond monitoring symptoms and progress. Keeping track often required persistence by NCMs when multiple calls were needed to contact patients. At times, keeping track meant knowing the patient's current geographic whereabouts and following up with the family to learn when he returned. Keeping track also involved calls to care providers to ascertain the outcome of appointments or tests, reviewing reports, and knowing dates and times of upcoming appointments so that the NCM could reduce barriers to keeping appointments. Keeping track was the means by which NCMs prevented patients from "falling between the cracks" of the healthcare system.

## Discussion

The skillful tailoring and execution of intervention strategies were dependent on the knowledge, experience, and skill that each NCM brought to the clinical situation, without which the complex level of assessment and intervention required to manage the patient population enrolled in IMPACT would not be possible. Furthermore, empowering through enhancement of self-efficacy would be difficult without NCMs with backgrounds that are sufficient to equip them with the skills to work within such a model.

When compared with the tenets of self-efficacy (Bandura, 1977, 1986), the categories that emerged from the NCM actions promote self-efficacy. Through assessment, misunderstandings that can affect outcome expectancies adversely were

identified, and these were corrected through teaching. Strategies of facilitation, advocacy, coordination, teaching, support, and keeping track promoted self-efficacy by influencing efficacy expectancies with mastery, modeling, persuasion, and affective interpretation.

This study's findings are supported by those of a nurse-delivered telephone intervention study for patients with localized prostate cancer among a sample that was 50% African American men and 55% men with a low income (Mishel et al., 2002). Only men with localized prostate cancer receiving radiation or surgery were included. Although the focus of this intervention was the management of uncertainty, the strategies used were cognitive reframing, problem solving, patient-provider communication, and providing information, all of which are consistent with the strategies identified in the current study. Mishel et al. found that cognitive reframing, the reforming of cognitive schema to change an individual's view of the situation, and problem solving significantly improved among those in the treatment groups at a four-month follow-up. The modification of outcome expectancies through assessment, support, and teaching may have helped men cognitively reframe their view of prostate cancer and its treatment. Collaborative problem solving directly corresponds with the problem-solving strategy used in the uncertainty intervention. Mishel et al. also reported that those in the intervention groups indicated that they had better control of urine flow at the four-month follow-up. These men received telephone instruction on pelvic floor exercises similar to that provided by IMPACT NCMs in the current study. According to Mishel et al., men who received the intervention commented that having a way to get their questions answered was one of the most meaningful aspects of the intervention. Comments from men in the current study indicated a sincere appreciation of having a nurse to whom they could turn for questions, information, and support.

The current study's findings are consistent with those of an earlier investigation that described postsurgical nursing interventions for men with prostate cancer using the Nursing Intervention Lexicon and Taxonomy (NILT) (Robinson et al., 1999). These investigators used nursing notes from 32 patients' homecare records as the source of data. Intervention statements were identified and coded according to the NILT categories (see Table 3). The findings indicated that 45% of the interventions fell under the patient-teaching category and that psychologically based interventions reflected another 20% of the interventions. Very few of their interventions were direct care. In the current study, categories of nursing interventions were not quantified, but the categories that emerged inductively demonstrated the use of teaching a variety of aspects from symptom management to navigating the healthcare system and psychologically based interventions reflected in support, advocacy, and facilitation. Demographically, 75% of the Robinson et al. (1999) study sample was Caucasian and 91% had completed at least high school. Income and insurance status were not reported. This was a much less diverse sample than found among the IMPACT enrollees. Also, Robinson et al. (1999) only considered postprostatectomy nursing interventions, whereas the intervention described in this article covered radiation therapy, hormone therapy, and watchful waiting, as well as surgery. Overall, the categories that emerged from the NCM notes, descriptive of intervention activities, were consistent with the limited research previously conducted on nursing interventions for men with prostate cancer.

**Table 3. Nurse Case Manager and Nursing Intervention Lexicon and Taxonomy**

Nurse Case Manager Category	Nursing Intervention Lexicon and Taxonomy
Assessment	Care need determination, care environment management, and care vigilance
Facilitation	Therapeutic care: cognitive understanding and control, and therapeutic care: psychosocial
Advocacy	Therapeutic care: cognitive understanding and control, care information provision, and care environment management
Coordination	Therapeutic care: cognitive understanding and control, and care environment management
Teaching	Care information provision, care environment management, and therapeutic care: cognitive understanding and control
Support	Therapeutic care: psychosocial and care information provision
Collaborative problem solving	Therapeutic care: cognitive understanding and control, therapeutic care: psychosocial, and care environment management
Keeping track	Care need determination and care vigilance

## Limitations

The findings of this study can be generalized only with a great deal of caution. Transfer of the results from the IMPACT program into other contexts will require testing of the trans-

ferred strategies before application because the results are contextually bound to the IMPACT program. Also, this study described practice, but it did not test intervention processes, which will be accomplished in future studies. In addition, patients' perspective of their experience with the NCMs was not part of this study and will need to be explored in the future.

## Implications for Practice and Research

By describing NCM intervention strategies delivered to low-income men with prostate cancer and comparing the strategies with the tenets of the self-efficacy theory, these findings identify NCM interventions that may have potential to empower low-income men with prostate cancer through interventions to enhance self-efficacy. Building on this study, future research is needed to test self-efficacy as an outcome using a standardized NCM intervention and validated measures of self-efficacy. This would be strengthened further with a comparison group that did not receive the intervention. Additionally, the patients' perspective of the NCM interventions should be obtained.

These results begin to provide insights into the process of managing the care of low-income men with prostate cancer through telephone intervention strategies. They demonstrate how a group of oncology nurses selected intervention strategies from standard nursing intervention categories to individualize patient interventions by creatively combining the strategies to meet assessed needs. These processes need to be tested in a variety of practice settings. Evaluation studies of the feasibility and effectiveness of these processes beyond the IMPACT program are needed. However, this study provides a foundation on which NCM interventions to empower low-income men can be developed for implementation and evaluation.

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