Original Article

Patients' perspective on the comprehensive preventive health evaluation in veterans with spinal cord injury

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Study design: Survey research methods.

Objectives: To assess patient satisfaction with the annual comprehensive preventative health evaluation (CPHE) and to determine if the patient's needs were being met.

Setting: Department of Veterans Affairs National Survey, United States.

Methods: A total of 853 subjects with spinal cord injuries participated in a mailed survey regarding the annual CPHE. Subjects were asked about satisfaction with the examination, preferences on how the examination is conducted and whether their needs were being met with the examination.

Results: In all, 76% of the subjects that responded to the survey had completed a CPHE within the previous year. Subjects cited getting their medication and supplies refilled and talking to the doctor as the top two reasons for completing the evaluation. Subjects indicated that they would most like to discuss their muscle strength and weakness, bladder care, chronic pain, digestion and bowel care issues, and equipment problems during their evaluation. The majority of subjects (81%) indicated that they were satisfied with the CPHE. Subjects that were satisfied with the CPHE were also more satisfied with other aspects of care as well.

Conclusion: The majority of respondents had completed a CPHE within the previous year. Most respondents cite health issues related to the spinal cord injury as areas they would most like to discuss during the evaluation. The majority of subjects were satisfied with the conduct of the CPHE.

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Introduction

Spinal cord injury (SCI) is a complex chronic condition with considerable individual and societal implications across the affected person's lifespan. Following SCI, a significant number of lifestyle adaptations are required of the injured individual. The extent of the physiological, psychological and social changes in the life of a person following SCI means that survival and quality of life will depend on a lifetime of dedicated efforts to optimizing and sustaining his/her health. This means learning to recognize the signs/symptoms that indicate the need for health care and understanding the pathway

for gaining entry to health promoting services that include both prevention and intervention/treatment.

The Department of Veterans Affairs (VA) has long recognized the critical importance of prevention in maintaining the health and quality of life of veterans with SCI. Additionally, early detection of secondary complications of SCI and/or comorbidities associated with SCI may decrease morbidity and mortality for this population. Given that there are no nationally accepted clinical guidelines as to what elements should be included in an annual health evaluation for persons with SCI, VA has attempted to address this problem through an annual Comprehensive Preventive Health Evaluation (CPHE). The focus of the SCI-specific CPHE is on the prevention and/or early identification of complications related to SCI. The scope of the

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Figure 1 Abstracted illustration of the Department of Veterans Affairs SCI Annual CPHE. In the illustration the organizational line of responsibility within the SCI center is shown as well as the expected timeline for evaluation follow-up. For complete detail consult the Department of Veterans Affairs VHA Handbook 1176.1; May 21, 2002, pp 15–17

evaluation is comprehensive (see Figure 1) and, provided there are no contraindications, also includes the elements of preventive health care commonly offered to the general veteran population.

Typically, patients are scheduled for the examination by the SCI Center or clinic staff. The annual CPHE is scheduled over one or several days depending on the patient's needs. Examinations are completed on an outpatient basis depending on the patient's acuity level and housing needs. Patients who live far from the center are generally admitted as in-patients or assisted with housing during the course of the examination.

Provision of the annual CPHE closely follows the tenets of by the Chronic Care Model (see Figure 2).¹ The Chronic Care Model is a conceptual system of care that integrates elements of a health system organization to promote productive interactions between an informed activated patient and a prepared practice team.² VA leadership supports care for veterans with SCI. Information systems are available to support these veterans. Additionally, a national registry has been established for those followed within the VA system with SCI/dysfunc-

tions. These systems can be used for both clinical and research purposes. The CPHE is systematized in that there are specific expectations for completing the examination. Built into the CPHE are opportunities to support self-management. For example, patients are encouraged to visit with a nutritionist and/or a psychologist if needed.

Active involvement of the patient being treated is essential to implementation of the Chronic Care Model. To this point, there had been no systematic evaluation of the annual CHPE from a patient perspective. The purpose of this study was to describe what patients find valuable and would like to discuss at their annual CPHE and to assess patient satisfaction with the annual CPHE.

Methods

Study design

Survey research methods were used. The study and survey were approved by the hospital's Human Studies Subcommittee.

Figure 2 Components of the Chronic Care Model and indicators of concordance with the Department of Veterans Affairs Annual CPHE for persons with SCI/disability

Subjects

An initial random sample of 2417 veterans was selected from the 24 266 veterans in the Allocation Resource Center listing who met the SCI diagnostic classification criteria (806.xx, 952.xx, 344.0x, 344.1, or 907.2 ICD-9 Diagnostic Codes) since 1988. Veterans without a known mailing address or classified as deceased on other patient listings were excluded. Additionally, veterans with a concurrent diagnosis of multiple sclerosis were excluded.

The Postal Service returned 344 surveys as undeliverable and 87 surveys were returned with notations that the veteran had died. Undeliverable surveys were catalogued and 154 alternate mailing addresses were found through Veterans Benefit Administration listings. Of these, 26 addresses were in care of fiduciaries, conservators, or guardians and were not used. Thus, 127 veterans were mailed replacement surveys to these alternate addresses. An additional 27 respondents were excluded for reasons including that the survey was not applicable, they were unable to complete the survey due to illness or impairment, or they resided in a correctional

facility. A reminder postcard was sent following the initial mailing. A total, 44% or 853 of 1960 eligible/available veterans completed the survey regarding the SCI annual CPHE.

Data collection

The 21 survey questions were specific to the content and process of the CPHE including when the last examination was conducted, location of the examination, preferences about location and setting, travel arrangements, length of time, satisfaction, whether medical, equipment, and psychosocial needs were met, what the respondent values about the examination, health concerns, and the importance of the examination. Respondents were also asked to describe their health and number of emergency room visits. Answers to many of the questions were dichotomized for the analysis. Additional subject characteristics, including age, race, marital status, level of injury, time of injury, and utilization of outpatient and inpatient services were obtained from VA administrative data.

Table 1 Demographic characteristics of survey respondents and nonrespondents (not all data were available on nonrespondents (empty cells))

Characteristic	Respondents (n = 853)	Nonrespondents (n = 1107)	P
Age (years; mean (range))	58.9 (22–93)	58.3 (20–91)	0.3764
Level of injury			
Paraplegia	59.0	52.9	0.0068
Tetraplegia	41.0	47.1	
Gender			
Male (%)	97.3	96.7	0.4104
Female (%)	2.7	3.3	
Race/ethnicity (n = 701)			0.0069
Caucasian (%)	73.6	66.3	
Hispanic (%)	7.8	7.9	
African American (%)	15.8	23.0	
Other (%)	0.1	0.3	
Unknown (%)	2.6	2.4	
Member of racial or ethnic minority group (%)	24.4	32.0	0.0007
Marital status (n = 720)			0.0413
Married (%)	47.4	43.4	
Divorced (%)	23.9	24.5	
Widowed (%)	4.3	7.1	
Separated (%)	5.0	7.3	
Never married (%)	18.6	16.6	
Unknown (%)	0.8	1.0	
% service connected (mean (range))	71.3 (0–100)	65.7 (0–100)	0.0198
Total in-patient stays (mean (range))	7.6 (0–47)	8.7 (0–55)	0.0021
Recent user (%)	73.6	60.3	< 0.0001

The results of nine selected statistical comparisons between groups are presented

Statistical analysis

Descriptive statistics, including means, standard deviations, percentages and frequencies were calculated to describe characteristics of the sample and their responses to the survey questions. χ^2 -tests were used to compare survey responses for veterans that did and did not receive a CPHE annually and for different levels of satisfaction. χ^2 - and *t*-tests were also used to compare the characteristics of respondents and nonrespondents.

Results

Description of the sample

The analysis included 853 respondents. Characteristics of the sample are presented in Table 1. The mean age was 59 ± 13 years. Of the respondents for whom race and ethnicity data were available 75% were Caucasian, 17% were African American, 8% were Hispanic. The majority of respondents (52.5%) was not married, had been injured for over 20 years (22 ± 14 years), and had injuries that resulted in paraplegia (59%).

The characteristics of respondents and nonrespondents to the survey were compared using χ^2 -tests and

t-tests to determine if survey respondents were representative of the random sample. The respondents and nonrespondents did not significantly differ on variables including how recently they were injured, gender, marital status, age, or income. However, the respondents were more likely to be a veteran with paraplegia ($P = 0.0068$, $\chi^2 = 7.3131$), Caucasian ($P = 0.0007$, $\chi^2 = 11.4905$), a recent user of specialty care ($P < 0.001$, $\chi^2 = 38.4146$), have a higher service connection percentage ($P = 0.0210$, $t = 2.31$), and have more total inpatient stays ($P = 0.0027$, $t = 3.01$) than nonrespondents (see Table 1).

Receipt of yearly annual examination

The majority of respondents (76% of the 822 respondents who answered this question) had a CPHE within the past year. An additional 5% received a CPHE in the last 2 years and 8% had received their last CPHE more than 2 years ago. The rest of the sample was either unsure (7%) or indicated that they had never received a CPHE (4%). When subjects were asked why they had not received a CPHE, the top reasons included that the VA was too far away from home (12%), or the

examination was not offered (17%). Additional reasons are provided in Table 2.

The differences between respondents that received a CPHE in the past year and those that did not receive a CPHE in the past year are detailed in Table 3. Of note, there were no differences between those that received the CPHE in the past year and those that did not based on major demographic variables such as gender ($P=0.5907$, $\chi^2=0.2983$), age ($P=0.3236$, $t=0.99$), race (Caucasian versus all others, $P=0.0849$, $\chi^2=2.9676$) and marital status ($P=0.9901$, $\chi^2=0.0002$). Respondents who received a CPHE in the past year were more likely to have received their most recent CPHE at a VA SCI Center (91%) than those who did not receive a CPHE in the last year (80%, $P=0.0047$, $\chi^2=7.9928$). A higher percentage of veterans who received a yearly a CPHE traveled less than 2 h to get to the VA hospital (63 versus 53%, $P=0.0411$, $\chi^2=4.1712$).

Table 2 Top 10 reasons given by respondents for not receiving a yearly CPHE

Respondents' reasons for not receiving a CPHE	Frequency selected ^a	% of all (n=853) respondents
CPHE was not offered to me	81	9.5
VA is too far from my home	55	6.5
CPHE required hospital stay	32	3.8
I do not need a CPHE	28	3.3
Not sure	28	3.3
I have no one to drive me	25	2.9
CPHE only offered as outpatient	24	2.8
VA is difficult because of access	22	2.6
VA is difficult to use because of expense	19	2.2
The CPHE is not of value to me	15	1.8

^aSubjects were instructed to select all reasons that applied to him/her

Receiving a CPHE in the past year was also associated with different attitudes about the CPHE experience. In total, 72% of veterans who received a CPHE in the past year thought that the length of the CPHE was about right, while only 57% of other veterans agreed ($P=0.0002$, $\chi^2=14.0590$). Veterans that received a CPHE during the past year were more likely to have a satisfaction level of very good (36 versus 27%) or good/average/fair (60 versus 58%, $P<0.0001$, $\chi^2=21.9165$), agree that all or most answers to questions were provided at the CPHE (96 versus 86%, $P<0.001$, $\chi^2=18.3101$), and agree that all or most of their medical (85 versus 66%, $P=0.0001$, $\chi^2=19.8936$), equipment (80 versus 63%, $P=0.0002$, $\chi^2=14.3451$), and psychosocial needs were met (66 versus 48%, $P=0.0008$, $\chi^2=11.1651$). While 94% of respondents that indicated they had a CPHE during the past year thought the annual CPHE was important or essential to health, 89% of other respondents agreed ($P=0.0454$, $\chi^2=4.0036$). There were no significant differences in race/ethnicity, marital status, or whether a respondent was over 65. Yearly CPHE recipients were, however, less likely to agree that their health was worse than others with the same age and SCI (13 versus 28%, $P<0.0001$, $\chi^2=15.7292$) and more likely to agree that they had someone close to them (84 versus 73%, $P=0.0041$, $\chi^2=8.2599$). There was no difference in mean age, income, or utilization measures including inpatient discharges and total SCI outpatient clinic stops.

What respondents find valuable and would like to discuss
Respondents were given a list of reasons the CPHE might be valuable and asked to check all that applied. The five top reasons included getting medications and supplies refilled (62%), talking to the doctor (61%), a chance to discuss concerns (59%), receive test or examination results (59%), and that it promotes good health (56%). See Figure 3.

Table 3 Comparison of the responses of veterans who received and those who did not receive a yearly CPHE

Survey question	Received yearly CPHE		P
	Yes (%)	No (%)	
Received CPHE at VA SCI center	91	80	0.0047
Prefer CPHE as in-patient	40	50	0.0673
Received travel assistance to CPHE	40	37	0.5687
Travel time to CPHE <2 h	63	53	0.0411
Length of CPHE about right	72	52	0.0002
Satisfaction with CPHE above average	75	57	0.0003
All or most answers about health and tests were provided at CPHE	96	86	0.0001
All or most medical needs were met during the CPHE	85	66	0.0001
All or most equipment needs were met during CPHE	80	63	0.0002
All or most psychosocial needs were met during CPHE	66	48	0.0008
Annual CPHE is important or essential to health care	94	89	0.0454
My health is worse than others with the same age and SCI	13	28	0.0001
I had at least one ER visit in last year	48	48	0.9463

Values are the percentage of respondents that agreed with the survey question

Figure 3 Histogram illustrating the percent frequency with which respondents selected reasons why receiving an annual CPHE is important. Respondents were instructed to select all responses that applied to them. An item had to have a 'percentage of total' $\geq 33\%$ to be included in the figure

Subjects were also given a list of issues that they might like to discuss during an annual CPHE and asked to indicate which areas they would be interested in discussing with their providers. Concerns with the highest number of responses included muscles, strength and weakness (60%), bladder care, incontinence, and urinary tract infections (54%), chronic pain/joint pain (52%), digestion, bowel care, incontinence (47%) and equipment problems (44%). The list of concerns and percentage of responses is detailed in Table 4.

Comparison of veterans with and without high levels of satisfaction

To examine satisfaction, the original survey categories were collapsed into three groups: very good, good/average/fair, and poor. Higher than average satisfaction levels were associated with higher percentage levels of agreement with several statements on the survey (Table 5). Veterans with very good and good/average/fair satisfaction levels were more likely to prefer to receive their CPHE at the VA (99 and 95%) compared to veterans who rated their satisfaction as poor (71%, $P < 0.0001$, $\chi^2 = 61.8764$). Highly satisfied respondents were more likely to agree that the length of the CPHE was about right (83 versus 67 versus 21%, $P < 0.0001$, $\chi^2 = 70.6700$), that the CPHE was important or essential to health care (98 versus 91 versus 85%, $P = 0.0006$, $\chi^2 = 14.9541$), that all or most answers about health and tests were provided (99 versus 93 versus 92%, $P = 0.0010$, $\chi^2 = 13.8222$), and that all or most medical (98 versus 79 versus 10%, $P < 0.0001$, $\chi^2 = 182.9761$), equipment (91 versus 75 versus 28%, $P < 0.0001$,

Table 4 Personal health issues subjects would like to discuss with a health care professional during the annual CPHE

Health-related topic	Number of yes responses	% of total (n = 825)
Muscles, strength and weakness	511	60
Bladder care, incontinence, UTI	460	54
Chronic pain/joint pain	442	52
Digestion, bowel care and incontinence	398	47
Equipment problems	373	44
Skin care and pressure ulcers	366	43
Heart and blood circulation	337	40
Diet	327	38
Exercise	279	33
Numbness	258	30
Depression and anxiety	246	29
Dental care	242	28
Planning for future care needs	224	26
Loss of function	193	23
Aging	185	22
Sexuality	172	20
Breathing difficulties	174	20
Autonomic dysreflexia	167	20
Memory or thinking problems	159	19
Transportation	133	16
Coping with challenges	138	16
Caregiver issues	132	16
Finances	104	12
Obesity	84	10
Education/training	59	7
Other	58	7
Alcohol or drug use	39	5
Jobs and employment	40	5
Not sure; never had examination	39	5
Fertility/pregnancy	21	3
None	28	3

$\chi^2 = 84.5716$), and psychosocial needs (80 versus 59 versus 21%, $P < 0.0001$, $\chi^2 = 59.5442$), were met. Level of satisfaction did not significantly differ by race, gender, marital status or age, or by utilization. Veterans that were more satisfied were less likely to agree that their health was worse than others with the same age and SCI (6 versus 19 versus 26%, $P < 0.0001$, $\chi^2 = 28.5768$), were less likely to have had an emergency room visit (39 versus 51 versus 59%, $P = 0.0019$, $\chi^2 = 12.5521$), and more likely to agree that they have someone close to them (88 versus 82 versus 68%, $P = 0.0018$, $\chi^2 = 12.6725$).

Discussion

Annual examinations in the SCI population have received little attention. A literature search revealed only one published manuscript discussing annual follow-up with examinations and this study was outside of the Department of Veterans Affairs healthcare system.³ In 1997, Canupp *et al*³ studied differences between 102 persons with SCI who had been compliant

Table 5 Comparison of veterans' responses to survey questions when the respondents were partitioned by level of satisfaction with their most recent CPHE. The three levels of satisfaction were – very good; good/average/fair; and poor

Survey question	Percentage			P
	Very good (n ~ 261)	Good/average/ fair (n ~ 257)	Poor (n ~ 47)	
Received CPHE in past year	89	86	62	<0.0001
Received CPHE at VA SCI Center or SCI Clinic	90	88	88	0.7173
Received CPHE at same place prescriptions are filled	82	81	67	0.0443
Prefer to receive CPHE at VA	99	95	71	<0.0001
Prefer to receive CPHE as in-patient	40	41	38	0.9476
Received VA travel assistance	41	39	25	0.1335
Travel time to examination less than 2 h	62	64	64	0.8228
Length of examination about right	83	67	21	<0.0001
All or most answers about health and tests provided at CPHE	98	93	90	0.0010
All or most medical needs met at CPHE	98	79	10	<0.0001
All or most equipment needs met at CPHE	91	75	28	<0.0001
All or most psychosocial needs met at CPHE	80	59	21	<0.0001
CPHE important or essential to health care	98	91	85	0.0006
My health is worse than others with the same age and SCI	6	19	26	<0.0001
I had at least one ER visit in last year	39	51	59	0.0019
I have someone close to me	88	82	68	0.0018

with annual urologic examinations and 61 persons who had not been compliant with the annual follow-up (noncompliance was defined as having missed at least two of the most recently scheduled annual urological examination). Noncompliant subjects in the urologic study identified the following obstacles in completing an annual urologic examination: cost of the visit and medical tests (44%), distance to travel (30%), availability of transportation (25%), belief that follow-up was not necessary (25%), the availability of good local doctors (16%), time involved (10%), inconvenience (13%) and discomfort (7%). Respondents in the present sample cited the examination not being offered (10%) as the most common reason for not completing it. It is important to note that not all veterans listed in the Spinal Cord Injury Registry are users of the VA SCI follow-up care. This could not have been an issue in the urologic study as having the urologic examination offered was part of the inclusion criteria. Distance and availability of transportation were less prevalent in the veteran sample than the urologic examination sample. Distance to the hospital may be more of an obstacle when transportation is not available and one cannot afford the treatment being offered. Most respondents in the present study had a service-related connection and were eligible for free or low-cost care and transportation. Likewise, expense of the examination was cited by only 2% of the veteran subjects as a reason for not getting the annual examination but by 44% of the urologic examination study participants.

Those who completed the annual CPHE tended to be more satisfied with the examination when compared to those who did not complete the examination annually. Additionally, a higher percentage of respondents who reported receiving the annual CPHE reported that their

medical, equipment and psychosocial needs were met during the CPHE. It may be that those who completed the annual CPHE did so because they were more satisfied with the care they received or indeed this phenomenon may have been a consequence of respondent bias to our survey. Nonetheless, important lessons can be learned from those who responded to the survey to improve the overall care delivery system for this population. First, since the major issues identified by patients related directly to health concerns unique to persons with SCI, it is important that those with expertise in SCI continue to provide primary care to these patients. Next, examinations need to be offered at the closest VA health-care facility possible. Whenever feasible, patient preferences should be incorporated into the location and scheduling of the examination. Further research is needed to determine how medical, equipment and psychosocial needs can be better met particularly in those who did not receive a yearly CPHE. Focus groups targeted at those who do not complete the CPHE might be convened as a mechanism for improving care to those who did not complete the CPHE.

The authors suggest that regular completion of the annual CPHE is one indicator of the commitment of the veteran with an SCI to the self-management of his/her health. However, it is acknowledged that participation in the annual CPHE is in reality a 'snap-shot' with limited information regarding what a person is doing to promote personal health on a daily bases. The CPHE may represent an opportunity for the health-care provider to extend the influence of the annual examination beyond the restrictive period of 'in hospital' contact. In a recent self-management education program meta-analysis, investigators concluded that self-management programs were moderately effective for certain

chronic diseases treatment when outcomes were well-defined.⁴ For example, asthma attacks were reduced by monitoring peak flow meter results and glycosolated hemoglobin levels were improved with diabetic education.⁴ These same approaches would apply equally to a person with SCI. The annual CPHE affords the clinician with opportunity to guide/counsel the person with SCI in the development of strategies to best manage their health. This could include the identification of well-defined outcomes and concrete ways in which the individual could identify progress towards a health-promoting outcome. For example, if the objective is to control weight gain by achieving a negative caloric balance; the addition of an odometer to the wheelchair to record daily distance traveled would provide quantification of the individual's progress toward the objective of increased daily physical activity. This is analogous to the successful pedometer programs in use today. In the SCI population, similar measures could be development to monitor muscular strength, urinary tract infections and pressure ulcers. Incorporating such procedures as part of the CPHE might further enhance the delivery of care to patients with SCI.⁵

It may be that the VA annual CPHE is designed in such a manner that patients can get all of their needs met in one concentrated time period. In all, 62% of respondents reported that they found the annual examination valuable because they could get their medications and supplies refilled and changed. In total, 37% stated that the annual examination was valuable because they were able to make equipment changes. The CPHE provides scheduled time to discuss concerns and medication/supply issues with the physician or other care provider. The majority of respondents felt that the CPHE promoted good health and assisted them in preventing complications. Over one-third of respondents stated that the annual CPHE provided them with the opportunity to talk with people. Some respondents may feel isolated in their community. Having the opportunity to talk with others who are also spinal cord injured may be an unintended benefit of having the structured annual CPHE.

Respondents were asked to check items that they would like to discuss at their annual CPHE. Items selected by respondents are also the secondary complications of SCI most often identified by providers. In fact, the six top concerns cited by respondents are specific to their SCI. SCI is a multifaceted, life-encompassing problem and concerns by these respondents verify that fact. It is not surprising that muscle strength and weakness are listed first among the items respondents wished to discuss. Muscle strength is vital to function and independence in people with SCI. Additionally, musculoskeletal problems such as curvature of the spine and contractures are complications associated with the increasing number of years since the SCI occurred.⁶ Likewise, chronic pain and joint pain are also more prevalent the longer a person has been injured.^{6,7} Urinary tract infections are one of the most common secondary complications following SCI.⁸

Additionally, kidney and bladder stones are associated with increasing years since the time of injury.⁶ Bowel obstructions are a function of the aging process and rectal bleeding is related to increasing years since a spinal injury.⁶ Interestingly, pressure ulcers are one of the most commonly occurring problems in people with SCI⁷ but was listed as sixth in the hierarchy of items that need to be addressed during the CPHE. Several reasons may account for this finding. It may be that individuals with SCI are well versed in pressure releases and do not need to discuss this or perhaps if pressure ulcers are beginning they do not wait for their regular check-up to discuss the problem. Alternatively, our sample may have been biased toward the more health conscious veteran who regularly performs pressure releases as part of his/her daily routine.

The seventh, eighth and ninth areas of concern were heart, diet and exercise. Usually considered to be health concerns of the able-bodied population, it is well recognized that heart disease, diet management and exercise are influenced by the aging process and more recently potential health issues for those with an SCI.⁶ The survey did not address whether these specific concerns were being addressed only if the respondents would like to have them addressed. Some have suggested that health care providers do not often think about prevention in those with disabilities⁹ or chronic illness.^{1,10} The results of this survey demonstrate that veterans with SCI want to discuss these issues. Of interest, although subjects did want to discuss diet and exercise, the majority of patients did not indicate a desire to discuss obesity. Only 5% of respondents wished to discuss problems with alcohol or drug use. It is not known whether these problems were not prevalent in this group or whether these topics were considered to be less desirable or too difficult to discuss with the health care provider.

Patient satisfaction is viewed by many as an overall indicator of the quality of services provided.¹¹⁻¹³ It is important to note that almost all patients were satisfied with the annual CPHE. Of the patients that answered the patient satisfaction question, 88% were satisfied with the annual CPHE. This high rate of satisfaction is similar to 94% overall satisfaction with medical rehabilitation after SCI.¹¹ Unlike satisfaction with medical rehabilitation, satisfaction with the annual CPHE did not differ by age, ethnicity or utilization.¹¹

Response bias is an important consideration in our sample. Respondents were more likely to be a veteran with paraplegia. Owing to limited hand function, those with tetraplegia may have been unable to respond. For future research, alternative forms of responding should be explored. Additionally, respondents were more likely to be Caucasian. Although there were no differences in our study data among the respondents based on racial background, we cannot rule this out as a potential confounder to our study data.

It is important to indicate areas where this study sample differs from the general SCI population. First, this sample consisted of veterans listed in the Spinal

Cord Injury Registry only. Veterans with SCI receive long-term specialty care that is not typically offered to nonveterans with SCI. Thus, insurance and financial concerns present in the general population may not be as prevalent in this sample. This sample is also older than the general SCI population and a representative sample of women is not included.

As the VA SCI service moves toward increased implementation of a Chronic Care Model in all aspects of providing care for veterans with SCI, this survey provides information from a patient perspective. Patient experience and insights can help guide clinicians toward more productive interactions with patients. Also, clinicians may gain information about the overall conduct and satisfaction with the way the annual CPHE is implemented.

Conclusion

Notwithstanding those special needs incurred by an SCI, variations in health during the course of a person's lifetime are similar for persons with and without disabilities.⁹ According to Healthy People with Disabilities 2010, health promotion for people with disabilities should consist of promoting healthy lifestyles and environments, preventing of health complications, preparing the person to understand and monitor their own health, and promoting opportunities to participate in common life activities.¹⁴ For both the disabled and nondisabled, health-promoting needs may be facilitated through a primary healthcare network that is inclusive of an annual health examination.

This exploratory study provides information about the implementation of the annual CPHE in the Department of Veterans Affairs healthcare system from the perspective of the customer. It also provides insight into what veterans with SCI believe is important to discuss during a routine office visit. Not surprising, the top six topics that patients with SCI want to discuss with their health-care provider are directly related to their SCI. Lastly, most veterans that responded to this survey were satisfied with the annual CPHE.

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