



**Memorial Sloan-Kettering Cancer Center  
IRB Protocol**

**IRB#: 08-155A(8)**

**Electronic Patient-Reported Outcomes from Home in Patients Recovering from Major  
Gynecologic Cancer Surgery: Measuring Symptoms and Health-related Quality of Life**

**MSKCC NON-THERAPEUTIC/DIAGNOSTIC PROTOCOL**

<b>Principal Investigator/Department:</b>	Dennis S. Chi MD	Surgery
<b>Co-Principal Investigator(s)/Department:</b>	Ethan Basch, MD	Epidemiology and Biostatistics
<b>Investigator(s)/Department:</b>	Martee Hensley, MD	Medicine
<b>Consenting Professional(s)/Department:</b>	Dennis S. Chi, MD	Surgery
	Martee Hensley, MD	Medicine
	Alexia Iasonos, PhD	Epidemiology and Biostatistics
	Richard R. Barakat, MD	Surgery
	Carol L. Brown, MD	Surgery
	Nadeem R. Abu-Rustum, MD	Surgery
	Yukio Sonoda, MD	Surgery
	Douglas Levine, MD	Surgery
	Mario Leitao, MD	Surgery
	Ginger Gardner, MD	Surgery
	Elizabeth Jewell, MD	Surgery
	Oliver Zivanovic, MD	Surgery
	Fanny Dao, RSA	Surgery
	Marissa Mezzancello, CRC	Surgery
	Kaity Chang, RSA	Surgery
	Jacquelin Mohr, CRM	Surgery
	Nicholas Maffetone, RSA	Surgery
	Shannon Frank, RSA	Surgery
	Ansley Carnes, RSA	Surgery
	Amanda Eisinger, RSA	Surgery

**Please Note: A Consenting Professional must have completed the mandatory Human Subjects Education and Certification Program.**

**Memorial Sloan-Kettering Cancer Center  
1275 York Ave. New  
York, NY 10021**



**Memorial Sloan-Kettering Cancer Center  
IRB Protocol**

**IRB#:08-155 A(8)**

**Table of Contents**

1.0 PROTOCOL SUMMARY ..... 1

1.1 BACKGROUND ..... 1

1.2 SPECIFIC AIMS ..... 1

1.3 METHODS ..... 2

1.4 SIGNIFICANCE..... 3

2.0 OBJECTIVES AND SCIENTIFIC AIMS..... 4

2.1 OBJECTIVE ..... 4

2.2 SPECIFIC AIMS ..... 4

3.0 BACKGROUND AND RATIONALE..... 5

3.1 OVERVIEW OF PATIENT-REPORTED OUTCOMES (PROS)..... 5

3.2 RATIONALE FOR PATIENT SELF-REPORTING DURING THE POST-  
OPERATIVE PERIOD ..... 5

3.3 TYPICAL POST-OPERATIVE COURSE FOLLOWING GYNECOLOGIC  
SURGERY AT MSKCC..... 8

3.4 THE DEVELOPMENT OF THE ONLINE PLATFORM AT MSKCC..... 8

3.5 PRELIMINARY PRO RESEARCH AT MSKCC ..... 9

3.6 COMPUTER AND INTERNET USE AMONG MSKCC PATIENTS ..... 9

3.7 FUTURE DIRECTIONS ..... 11

4.0 OVERVIEW OF STUDY DESIGN/INTERVENTION ..... 11

4.1 DESIGN ..... 11

4.2 INTERVENTION ..... 14

5.0 CRITERIA FOR SUBJECT ELIGIBILITY ..... 17

5.1 SUBJECT INCLUSION CRITERIA ..... 17

5.2 SUBJECT EXCLUSION CRITERIA..... 17

6.0 RECRUITMENT PLAN..... 18

7.0 ASSESSMENT/EVALUATION PLAN ..... 18

7.1 BASELINE INFORMATION QUESTIONNAIRE ..... 18

7.2 DEMOGRAPHIC DATA ..... 18

7.3 WEBCORE QUESTIONNAIRE ITEMS..... 19

7.4 PATIENT SATISFACTION ..... 20

7.5 CLINICIAN EVALUATION OF WEBCORE ..... 20

8.0 TOXICITIES/SIDE EFFECTS ..... 21

9.0 PRIMARY AND SECONDARY OUTCOMES ..... 22

9.1 PRIMARY OUTCOME..... 22

9.2 SECONDARY OUTCOMES ..... 23

10.0 CRITERIA FOR REMOVAL FROM STUDY ..... 24

11.0 BIOSTATISTICS ..... 24

11.1 SAMPLE SIZE AND ACCRUAL ..... 24

11.2 PRIMARY OBJECTIVE..... 26

11.3 SECONDARY OUTCOMES FOR PATIENTS ..... 26

11.4 SECONDARY OUTCOMES FOR CLINICIANS..... 27

11.5 MISSING DATA ..... 28



**Memorial Sloan-Kettering Cancer Center  
IRB Protocol**

**IRB#: 08-155A(8)**

12.0	RESEARCH PARTICIPANT REGISTRATION PROCEDURES.....	29
13.0	DATA MANAGEMENT ISSUES .....	29
13.1	QUALITY ASSURANCE.....	29
13.2	WEB SECURITY .....	29
13.3	DATA AND SAFETY MONITORING.....	29
14.0	PROTECTION OF HUMAN SUBJECTS .....	30
14.1	RAPID REPORTING OF POTENTIALLY SERIOUS TOXICITIES (WEBCORE AUTOMATED ALERTS):.....	30
14.2	PRIVACY.....	31
14.3	SERIOUS ADVERSE EVENT (SAE) REPORTING.....	31
15.0	INFORMED CONSENT PROCEDURES .....	32
16.0	REFERENCE(S).....	33
17.0	APPENDICES .....	36



**Memorial Sloan-Kettering Cancer Center  
IRB Protocol**

**IRB#: 08-155A(8)**

**1.0 PROTOCOL SUMMARY**

**1.1 Background**

There is a paucity of research on health-related quality of life (HRQL) in patients with gynecologic cancer in the 6-week period after major cancer surgery. Publications from other surgical disciplines have found that physicians tend to underestimate patient symptoms [1, 2]. The NIH, the FDA, and other regulatory agencies [3-5] have recognized patient-reported outcomes (PROs) as important in evaluating disease and treatment. Reducing the burden of treatment-related symptoms, especially during aggressive therapy, is an important cancer care goal. Gynecologic cancer surgery is associated with multiple moderate to severe symptoms and potential severe surgical complications, especially during the first postoperative month. Effective symptom control is depending on timely symptom assessment and sufficient feedback from patients to practitioners so that adjustment in symptom control can be initiated. Patients are often reluctant to report symptoms, enduring high levels of symptoms. The main purpose of this pilot study is to clarify whether patients are willing to self-report common toxicity information and quality of life using the WEBCORE system via the Internet. Web-based patient self-reporting from home between clinic visits could potentially improve the quality of post-operative care through earlier detection of symptoms; improve patient-doctor communication; and provide an efficient means for data capture in clinical trials evaluating the effects of surgical interventions on patient safety and HRQL [6]. However, it is not known as to whether patients will be able or willing to self-report symptoms during this period, or if clinicians will find this information to be clinically useful. If WEBCORE is utilized and patient feedback is generally positive, future investigation will be considered reasonable in order to assess the potential value of WEBCORE in postoperative care of cancer patients and in the setting of clinical treatment trials.

**1.2 Specific Aims**

**1.2.1 Primary Aim**

This pilot study will assess patient use of WEBCORE, an online system designed for cancer patients to self-record toxicity-related symptoms based on NCI Common Terminology Criteria for Adverse Events and global quality of life (QoL) by European Organization for Research and Treatment of Cancer (EORTC QLQ-C30). The primary aim is to determine whether electronic capture of patient-reported symptoms and QoL from home is feasible in women recovering from major gynecologic cancer surgery during the 6-week post-operative period.





**Memorial Sloan-Kettering Cancer Center  
IRB Protocol**

**IRB#: 08-155A(8)**

**1.2.2 Secondary Aims**

1. To measure the patient assessments of the usefulness of online symptom self-reporting in the early post-operative period, and clinician perceptions of its potential value in routine outpatient post-operative cancer care.
2. To evaluate the impact of online symptom self-reporting on patient care processes as measured by the number of telephone calls between nurses and patients, resulting interventions (as defined as new appointments scheduled, instructions to the patient to go to Urgent Care, or additions/subtractions/modifications to medications), and patient satisfaction with care delivery.
3. To identify most commonly reported and most distressing symptoms reported by patients after gynecologic cancer surgery and to measure quality of life (QoL) during the immediate postoperative period.

**1.3 Methods**

This is a single-arm pilot study in which patients with gynecologic malignancies will self-report their own symptoms and HRQL during the post-operative period using the online platform WEBCORE, which is currently in use in two other MSKCC protocols and has previously undergone extensive privacy and security review at MSKCC [7-13]. The purpose of the study is to clarify whether patients are willing to self-report common toxicity information, and QoL using the WEBCORE system via the internet.

In an evaluation of feasibility, 110 patients recovering from major gynecologic cancer surgery with home internet access and regular email use undergoing surgery for presumed or confirmed gynecologic cancer will be recruited from MSKCC outpatient clinics. Participants will be encouraged to logon to WEBCORE and complete a questionnaire once pre-operatively and then weekly starting 7 days after surgery until the 6-week post-operative period has ended. Entered information will be stored in a secure database located on a firewall-protected MSKCC server. Patients will be reminded to logon via email (Appendix 10). Patients who do not logon will receive a backup phone call to complete the symptom questionnaire, and to ascertain reasons for non-completion of the online survey.

A WEBCORE report summarizing patient symptom trends will be printed and made available to the clinician at the time of the post-operative visit. Additionally, if a patient submits a response that is concerning according to pre-specified limits set by the gynecologic oncology service, an automated email alert flagged as “urgent” and titled “severe Patient-reported symptom” will be sent in real-time to the research fellow, the designated RSA and the PI of the study. They will forward the email to the POA of the patient’s gynecologic oncologist and to the clinic nurse taking patient calls for that gynecologic oncologist that day. (This is the same system used presently to triage patient phone calls.) If the research fellow is not available, coverage will be provided by the designated RSA. In that event, the designated RSA



## Memorial Sloan-Kettering Cancer Center IRB Protocol

**IRB#: 08-155A(8)**

will notify the POA of the patient's gynecologic oncologist and the clinic nurse taking patient calls for that gynecologic oncologist that day. No specific responses to these emails will be required, but any actions taken in response to these alerts by clinicians will be tracked (ie, telephone calls, supportive medication prescriptions, new appointments made, etc) using a form emailed to the nurse after the automated email alert (Appendix 5) and the "Ambulatory Care Phone/Email Communication Form" in the EMR. The forms will be collected by the research fellow or by the designated RSA.

It will be emphasized to patients that there is no regular monitoring of information entered into WEBCORE, and that they should call their physician's office if they feel that they require medical attention. This will be emphasized to patients in the informed Consent, during a WEBCORE training session, and on the WEBCORE website. In addition, anytime a patient enters a potentially concerning response into WEBCORE, a popup box will appear on the screen reminding her to consider calling her physician.

If 80% of enrolled patients with home Internet access login to WEBCORE at least four times during the study period we will consider WEBCORE a strategy warranting larger scale evaluation. Patient assessment of the usefulness of WEBCORE will be measured via an exit survey. Clinician perceptions of the potential value of WEBCORE will be evaluated via an email survey and questions asked at a team meeting. Reasons for patient non-compliance will be assessed via results of the backup telephone calls to those who failed to login, and with the exit survey.

Potential benefits of this use of the WEBCORE platform in this context will be assessed by measuring the number and type of clinical interventions made in response to WEBCORE alerts, and by analyzing patient use of WEBCORE in relation to dates of surgery and development of documented post-surgical complications.

### **1.4 Significance**

Cancer patients commonly express an interest in shared decision-making and access to information towards treatment decisions [14-17]. Reducing the burden of treatment-related symptoms, especially during aggressive therapy, is an important cancer care goal. Gynecologic cancer surgery is associated with multiple moderate to severe symptoms and potentially severe adverse events and complications, especially during the first postoperative month. Effective symptom control is depending on timely symptom assessment and sufficient feedback from patients to practitioners so that adjustment in symptom control can be effective. Patients are often reluctant to report symptoms, enduring high levels of symptoms. If electronic patient self-reporting is found to be a feasible strategy for post-operative monitoring of symptoms, this could potentially become a widespread approach for communicating with patients between visits, automatically monitoring for concerning symptoms, reducing morbidity, and improving patient satisfaction overall. Real-time electronic reporting also affords an opportunity to increase the response time of physicians to



Memorial Sloan-Kettering Cancer Center  
IRB Protocol

IRB#: 08-155A(8)

severe toxicities, which may have particular relevance in the postoperative setting. Enhanced timely provider-patient communication about symptoms could reduce postoperative symptom burden, severity of complications and readmission/hospitalization. In the future, data collected online, could be analyzed and used for the development of patient education tools. In the clinical trial setting, this approach could improve the efficiency of collecting data from patients, and provide a source of symptom and HRQL information for use as clinical trial endpoints and/or toxicity documentation. This is consistent with the mission of the NIH [4], and will inform future grant submissions.

## 2.0 OBJECTIVES AND SCIENTIFIC AIMS

### 2.1 Objective

The overall objective of this study is to assess if online self-reporting of symptoms in the post-operative period is feasible and well-accepted by patients and clinicians.

### 2.2 Specific aims

#### 2.2.1 Primary Aim

To determine whether electronic capture of patient-reported symptoms from home is feasible in women recovering from major gynecologic cancer surgery during the 6-week post-operative period.

#### 2.2.2 Secondary Aims

- To measure patient assessments of the usefulness of online symptom self-reporting in the post-operative period, and clinician perceptions of its potential value in routine outpatient post-operative cancer care.
- To evaluate the impact of online symptom self-reporting **on patient care processes as measured by the number of telephone calls between nurses and patients, resulting interventions (as defined as new appointments scheduled, instructions to the patient to go to Urgent Care, or additions/subtractions/modifications to medications), and patient satisfaction with care delivery.**
- To identify most commonly reported and most distressing symptoms reported by patients after gynecologic cancer surgery and to measure quality of life (QoL) during the acute postoperative period.





**Memorial Sloan-Kettering Cancer Center  
IRB Protocol**

**IRB#: 08-155A(8)**

**3.0 BACKGROUND AND RATIONALE**

**3.1 Overview of Patient-Reported Outcomes (PROs)**

The purpose of this pilot study is to clarify whether patients are willing to self-report common toxicity information and quality of life using the WEBCORE system via the Internet. The impact on patients of cancer treatment and its adverse effects have been identified as essential outcomes for health professionals to consider during routine clinical practice and in clinical trials [3]. We are interested in two types of PRO's: HRQL and post-operative symptoms. HRQL has been described by Cella as, "the extent to which one's usual or expected physical, emotional and social well-being is affected by a medical condition and/or its treatment" [3]. Patients are interested in how surgery will affect their HRQL, and surgeons are interested in how to maximize their patients' HRQL. Clinically speaking, post-operative symptoms and HRQL are important indicators of the impact of surgery and could be used for earlier identification of complications. The FDA and NCI have asserted that these phenomena are best evaluated by patients directly without being filtered by clinicians or anyone else, in the form of patient reported outcomes (PROs)[5]

According to the 2006 FDA Draft Guidance on the use of PROs in clinical research, "a PRO is any report that comes directly from a patient about a health condition or its treatment without interpretation of the patient's response by a clinician or anyone else" [3,5]. As a result of this guidance, increasing emphasis has been placed on the appropriate use of PROs in clinical trials for detecting potentially concerning adverse effects and complications of cancer and its treatments. The NIH has sponsored a national initiative (PROMIS), a key project of the Roadmap Initiative, with an overarching goal to improve assessment methods of self-reported symptoms and HRQL outcomes in chronic diseases including cancer [4]. Included in that project is the development of a national databank of PRO items and instruments. The NCI and the American Cancer Society have both prioritized the integration of PROs into clinical practice and research, as demonstrated by the joint NCI-ACS-FDA hosting of the Patient Reported Outcomes in Cancer Trials (PROACT) conference in September of 2006. The conference sought to identify circumstances in which PROs are indicated, best practices for their use, and to establish a platform from which PROs can be efficiently incorporated into NCI clinical trails [18].

**3.2 Rationale for Patient Self-Reporting during the Post-Operative Period**

There is a paucity of data available regarding patient-reported symptoms and HRQL in gynecologic cancer patients in the immediate 6 weeks following surgery. In most trials of post-operative gynecologic cancer patients, HRQL surveys have been administered at baseline and 3 months post-operatively, time points that do not address the immediate post-operative period. The only well-publicized trial to do so was LAP-2, a Gynecologic Oncology Group (GOG) study comparing laparoscopy to laparotomy in early stage endometrial cancer that evaluated HRQL using validated



## Memorial Sloan-Kettering Cancer Center IRB Protocol

**IRB#: 08-155A(8)**

study have not yet been published. Due to the lack of data on symptoms and HRQL in post-operative gynecologic cancer patients, gynecologic surgeons' expectations of what symptoms "normally" occur in the post-operative period are based largely on anecdotal experiences. Furthermore, it is not clear which symptoms are most commonly reported and which are found to be most distressing for patients undergoing gynecologic cancer surgery.

While there is no data on PROs in patients recovering from major gynecologic cancer surgery, there is data comparing patient-reported symptoms to surgeon's observations from other surgical specialties. Studies in urology indicate that physicians tend to underestimate patient symptoms [1, 2]. For example, in a review of patient-reported complications after radical prostatectomy, authors noted a discrepancy in estimates of urinary wetness and post-surgical procedures compared to clinician reports [1]. Over 60% of study respondents reported some problem with wetness with 40% of patients stating that they drip urine when coughing or experiencing full bladders. These figures were also greater overall than the weighted average number of patients having "any incontinence" based on published literature. Published rates of erectile dysfunction after various radical prostatectomy techniques based on clinician reporting have been reported as inaccurately low as well compared to patient reporting. In a cohort study of self-reported sexual and urinary dysfunction among patients receiving nerve-sparing radical prostatectomy, patients did not report better-preserved postoperative sexual function despite younger age, better pre-operative sexual function and favorable clinical prognostic factors [19]. Recently, a group from M.D. Anderson presented their results of a randomized trial using a computerized telephone monitoring system to reduce postoperative symptoms in cancer patients after thoracic surgery [20]. Their goal was to see if enhancing timely provider-patient communication about symptoms would reduce post-operative symptom burden. They identified 5 most common and distressing symptoms reported by patients after surgery (pain, distress, sleep problems, shortness of breath and constipation). Providers were alerted via e-mail when symptom severity was exceeded. The used symptom tracking system was associated with fewer supra-threshold symptoms, reduced symptom severity, and lower symptom-related interference in cancer patients after thoracic surgery.

The discrepancy between surgeons' clinical impressions and patient's self-reported symptoms underscores the need for patient-reported HRQL data.

The lack of normative data available for the post-operative period has implications for patients and clinicians. Without information on the post-operative period from the perspective of the patient, it is difficult to adequately prepare patients for what to expect as they recover from major surgery. Montgomery et al. found, in a cohort of women undergoing ambulatory breast cancer surgery, that post-surgical pain and fatigue is related to pre-surgical expectations [21]. A Cochrane review of pre-



## Memorial Sloan-Kettering Cancer Center IRB Protocol

**IRB#: 08-155A(8)**

operative patient education in patients undergoing hip and knee surgery found a significant decrease in post-operative pain related to the intervention, but a decrease in pre-operative anxiety was observed [22, 23]. A qualitative study of nurses working on a surgical unit at a large teaching hospital in Ireland revealed a wide variation in skill and comfort delivering pre-operative education, which was related to knowledge of the material and lack of structured programs [24]. Pre-operative teaching is likely hampered by limited knowledge about what symptoms and effects on HRQL are to be expected during the post-operative period.

Home-reported symptom and HRQL data could be useful in the early identification of post-operative complications. At our service, between 2001 and 2005 there was an 8% rate of major complications (those that led to invasive radiologic intervention, re-operation, unplanned ICU admission, chronic disability or death within 30 days of surgery) associated with laparotomy on the gynecology service (internal data). When considering all complications, major and minor, the rate is close to 15%. Common complications include ileus, urinary tract infection, wound breakdown or wound infection. Less common but more serious complications include pulmonary embolism, bleeding, abscess and small or large bowel obstruction. While it is possible to identify characteristics that place patients at higher risk for complications, definitive predictors have not yet been established. Potentially a deviation from “normal” expected symptoms or HRQL in the post-operative course could be an early indicator of a developing complication (eg, increasing abdominal pain, intractable nausea, vomiting, appetite loss, change in bowel function, shortness of breath, excessive fatigue, etc). Effective symptom control is depending on timely symptom assessment and sufficient feedback from patients to practitioners so that adjustment in symptom control can be effective. Patients are often reluctant to report symptoms, enduring high levels of symptoms. Thus, enhanced timely provider-patient communication about symptoms could reduce post-operative symptom burden, severity of complications and readmission/ hospitalization. .

Web-based reporting could be an efficient form of data capture for clinical trials that evaluate the effects of surgical interventions on patient safety and quality of life. Online PROs minimize error and allow for prospective data banking. Web-based surveys have the potential to decrease the number of steps involved in data collection, maximizing efficiency and minimizing error. With home internet access becoming more widespread, online surveys may increase the accessibility to subjects and, in turn, increase response rate. Studies of response rates in patients and physicians have been conflicting so far—in some studies internet response rates are lower than those with pen-and-paper, though others show internet response rates at higher than 90% [25-27]. It is unclear if patients recovering from major gynecologic cancer surgery will be more or less apt to respond to questionnaires electronically, which is a rationale for conducting this study of feasibility.



## Memorial Sloan-Kettering Cancer Center IRB Protocol

**IRB#: 08-155A(8)**

The goal of post-operative care is to identify and deal with potential surgical complications, as well as promote a rapid recovery to the maximal level of functioning attainable, and to control symptoms. Patients are integral to these processes and are generally instructed to self-monitor for concerning symptoms and call or come to the Urgent Care Unit if specific or severe symptoms occur. It is therefore already recognized that the patient is best equipped to evaluate her own level of functioning.

However, there is currently no standard protocol for post-operative monitoring on the gynecology service at MSKCC, which is related to the lack of available data on symptoms in the post-operative period (Section 3.2). Patients who have a vertical skin incision closed with staples return on average will be discharged on postoperative day 6 (internal data). They return to the hospital between ten to fourteen days following surgery for staple removal and an incision check by a physician's assistant or fellow. A post-operative visit with the attending surgeon occurs anywhere between 3 and 6 weeks after surgery, depending on surgeon preference. If a patient has a problem after surgery, she will call the surgeon's nurse, or at night, the fellow on call. Patients who have more concerning symptoms such as dyspnea, intractable emesis, obstipation or bleeding will be encouraged to come to the Urgent Care Center or to the office. Less concerning symptoms like mild nausea, constipation or moderate pain often can be addressed via phone. This approach depends on the willingness of the patient to call and a clinician to respond and intervene in a timely manner. However, patients have different thresholds for calling. Patients could be enduring unnecessary discomfort and experience potentially life-threatening conditions due to under-reporting or underestimation of the severity of specific symptoms – but this is currently unknown due to lack of data in this area. Enhanced timely provider-patient communication about symptoms could reduce post-operative symptom burden, severity of complications and readmission/hospitalization.

### **3.4 The Development of the Online Platform at MSKCC**

The online platform we plan to use in his study is the WEBCORE system, which is currently being used in MSKCC protocols 04-020 and 07-034 (CALGB 70501) and has previously undergone security and privacy reviews at MSKCC. The WEBCORE system was developed at MSKCC as a collaboration between study Investigators in the Departments of Medicine, Epidemiology and Biostatistics (including members of its Computing Resource group who maintain the infrastructure of the CRDB), and Information Systems. During the creation of WEBCORE, aesthetic aspects of the questionnaire and user-friendliness of the interface were improved based on feedback from the initial cohort of patients in the gynecologic oncology clinic receiving chemotherapy. Usability testing was also conducted. The technical functionality of



**Memorial Sloan-Kettering Cancer Center  
IRB Protocol**

**IRB#: 08-155A(8)**

**3.3 WEBCORE Postoperative Course following Gynecologic Surgery at MSKCC**  
By collaboration from members of the Computing Resource Group in Epidemiology and Biostatistics. Security issues are described in Section 13.2, the logistics of logging into WEBCORE in Section 4.2.3, and generation of WEBCORE Reports for clinician use in Section 4.2.4. A diagram of the system architecture/server configuration is reproduced in Appendix 7.

**3.5 Preliminary PRO Research at MSKCC**

Ethan Basch MD, a Co-Investigator for this protocol, conducted a feasibility study in 110 patients with gynecologic malignancies receiving chemotherapy to evaluate patients' ability and willingness to self-report toxicity-related symptoms of chemotherapy toxicity online or on clinic portals [13]. The WEBCORE secure web-based PRO platform was used for this study [10]. During an 8-week observation period, 80% of patients used the system to self-report without prompting. Most patients (96%) found WEBCORE easy to use, and 98% would recommend it to others. In addition, clinicians responded to WEBCORE-generated alerts for potentially concerning symptoms: there were 42 automated email alerts sent to clinicians due to grade 3 or 4 chemotherapy toxicities triggered by 16 different patients from home computers. These alerts prompted seven telephone contacts, three medication changes, and three new scheduled appointments.

A follow-up study in 100 patients with lung cancer receiving chemotherapy yielded similar results [7, 10], demonstrating that WEBCORE has been pilot tested for general feasibility and acceptability. Dr. Basch is currently conducting a randomized controlled trial to determine if patient self-reporting of symptoms during chemotherapy impacts on efficiency or clinical outcomes, as well as a multi-center feasibility study of PROs in the CALGB.

While electronic capture of PROs has been shown to be longitudinally feasible in patients treated nonsurgically for gynecologic cancer [13, 28], this group is different than women undergoing extensive surgery, who experience significant short-term disability during recovery. The ability and willingness of gynecologic cancer patients to electronically report post-operative outcomes has not been assessed. Symptom and HRQL information elicited via these methods could potentially improve outcomes and detect complications earlier.

**3.6 Computer and Internet Use Among MSKCC Patients**

Implementation and evaluation of an Internet-based tool for patients depends on the ability of patients to access and use a computer/the Internet. In order to characterize Internet use by MSKCC patients and their companions, Dr. Basch and Dr. Deborah Schrag conducted an anonymous waiting-room survey of patients presenting to the general surgical and medical oncology outpatient departments between December 1999 and February 2000 [29]. Of the 625 individuals approached, 443 completed and returned questionnaires (223 patients and 220 companions). The mean age of patients



**Memorial Sloan-Kettering Cancer Center  
IRB Protocol**

**IRB#: 08-155A(8)**

diagnosis (45%), followed by pancreatic/biliary (8%), gastro-esophageal (8%), hepatic (6%), sarcoma (5%), and endocrine (5%). Among the respondents, 64% of patients and 76% of companions owned computers, and Internet access was available at home to 58% and 68% respectively (Table 1).

**Table 1: MSKCC Survey Results (12/99 – 2/00)**

<b>Cancer patients with home computers</b>	<b>64%</b>
<b>Companions of cancer patients with home computers</b>	<b>76%</b>
<b>Cancer patients with home Internet access</b>	<b>58%</b>
<b>Companions of cancer patients with home Internet access</b>	<b>68%</b>

In November-December 2003, Dr. Basch conducted an informal anonymous survey of 90 patients (30 with gynecologic malignancies, 30 with lung cancer, 30 with prostate cancer) in waiting-areas of the MSKCC outpatient clinics (Table 2). Ages ranged from 40 to 84. The majority of patients noted regular access to the Internet. All patients without regular access to a computer or the Internet were older than 75 years, whereas all patients younger than 75 years had regular access. Of the patients who used the Internet, one patient used the Internet at a library, all others at home. All patients with home access expressed interest in electronic symptom self-tracking. When shown a demonstration of WEBCORE (the version used for tracking chemotherapy toxicity), all patients with Internet experience stated they would be interested in regularly using WEBCORE.

**Table 2: Informal MSKCC Survey of 90 Outpatients Receiving Chemotherapy (11-12/03)**

	<b>GYN</b>	<b>LUNG</b>	<b>PROSTATE</b>
<b>Do you have regular access to a computer (home, library, other)?</b>	<b>83%</b>	<b>68%</b>	<b>83%</b>
<b>Do you use the Internet regularly? (If not, is there somebody at home who does?)</b>	<b>73% (50%)</b>	<b>65% (56%)</b>	<b>70% (60%)</b>
<b>Do you use email?</b>	<b>60%</b>	<b>48%</b>	<b>64%</b>
<b>Would you be interested in regularly using WEBCORE to enter symptom information into an electronic diary over the Internet?</b>	<b>80%</b>	<b>70%</b>	<b>88%</b>



## Memorial Sloan-Kettering Cancer Center IRB Protocol

**IRB#: 08-155A(8)**

As of October 2007, 79% of U.S. adults are online, and of those, 72% access the internet from home. Use is generally greatest among individuals who are younger, more affluent, better-educated, and white, although use is increasing among those over 50 years-old and with incomes below \$25,000 [30].

A 2006 study by the Pew Research Center found that 80 percent of internet users, or 113 million U.S. adults, seek health information online, and that women are more likely to do so than men [31]. Surveys suggest significant numbers of patients want to communicate with physicians over the Internet [32, 33]. Many patients consider use of the Internet to enhance the patient-physician relationship [34, 35]. Most U.S. physicians regularly access the Internet and use daily email, and an increasing number communicate with patients via email [36-41]. Preliminary research suggests that online access to patient records and secure online communication with health providers may decrease the amount of patient follow up visits among chronically ill patients [42], leaving more time for new patient visits, or patients with more pressing concerns.

Despite a large number of informational web sites available for cancer patients [43], there is little opportunity for patients to use electronic resources to record their symptoms or communicate with clinicians. For cancer patients receiving routine outpatient care, the development of resources such as WEBCORE may allow for linking to more appropriate informational services, may foster better discussions with clinicians, save time, and inform better treatment decisions.

### 3.7 Future Directions

If this preliminary work finds the PRO approach to data collection to be feasible in the post-operative setting, it could lay the groundwork for: 1) further evaluations of feasibility in other populations (ie, underserved, non-English speaking); 2) a randomized trial to determine if patient self-reporting in the post-operative setting improves clinical outcomes (complication rates/morbidity, satisfaction with care, etc); and 3) assessments of this data collection method in the multi-center clinical trial setting (eg, nested in a GOG or CALGB treatment trial). In addition, follow-up work would be merited to refine the questionnaire items and electronic platform, and to devise backup data collection methods for patients who are unable or unwilling to complete electronic questionnaires.

## 4.0 OVERVIEW OF STUDY DESIGN/INTERVENTION

### 4.1 Design

This pilot study will assess patient use of WEBCORE, an online system designed for cancer patients to self-record toxicity-related symptoms based on NCI Common Terminology Criteria for Adverse Events and global quality of life (QoL) by European Organization for Research and Treatment of Cancer (EORTC QLQ-C30).

The overall objective of this study is to assess if online self-reporting of symptoms in



**Memorial Sloan-Kettering Cancer Center  
IRB Protocol**

**IRB#: 08-155A(8)**

the post-operative period is feasible and well-accepted by patients and clinicians. This is a single-arm pilot study in which patients with gynecologic malignancies will self-report their own symptoms and HRQL during the post-operative period using the online platform WEBCORE.

Eighty patients with home internet access and regular email use undergoing laparotomy for presumed or confirmed gynecologic cancer will be recruited from MSKCC outpatient clinics. Enrollees will be sent weekly email reminders to login to WEBCORE from home (Appendix 10). Participants will be expected to complete the questionnaire once pre-operatively and then weekly starting 7 days after surgery until the 6-week post-operative period has ended. Entered information will be stored in a secure database located on a firewall-protected MSKCC server. If an enrolled patient fails to login and self-report within 24 hours of the automated reminder, a second reminder email will be sent. If the patient again fails to respond, a backup telephone call to the patient will be made by the clinical research fellow coordinating this study. The back-up phone call will be made within a week of the initial missed questionnaire. If the patient is unreachable, a total of 3 attempts will be made to reach the patient. The fellow will use a semi-scripted approach to complete the symptom questionnaire, and to ascertain reasons for non-completion of the online survey.

A WEBCORE report summarizing patient symptom trends will be printed and made available to the clinician at the time of the post-operative visit. Additionally, if a patient submits a response that is concerning according to pre-specified limits set by the gynecologic oncology service, an automated email alert flagged as “urgent” and titled “severe Patient-reported symptom” will be sent in real-time to the research fellow, the designated RSA and the PI of the study. The research fellow will forward the email to the POA of the patient’s gynecologic oncologist and to the clinic nurse taking patient calls for that gynecologic oncologist that day. (This is the same system used presently to triage patient phone calls.) If the research fellow is not available, coverage will be provided by the designated RSA. In that event, the designated RSA will notify the POA of the patient’s gynecologic oncologist and the clinic nurse taking patient calls for that gynecologic oncologist that day. No specific responses to these emails will be required, but any actions taken in response to these alerts by clinicians will be tracked (ie, telephone calls, supportive medication prescriptions, new appointments made, etc) using a form emailed to the nurse after the automated email alert (Appendix 5) and the “Ambulatory Care Phone/Email Communication Form” in the EMR. The forms will be collected by the research fellow or by the designated RSA.

It will be emphasized to patients that there is no regular monitoring of information entered into WEBCORE. In addition, anytime a patient enters a potentially concerning response into WEBCORE, a popup box will appear on the screen reminding her to consider calling her physician.





## Memorial Sloan-Kettering Cancer Center IRB Protocol

**IRB#: 08-155A(8)**

We will consider the results of this feasibility study to suggest that WEBCORE is a strategy warranting larger scale evaluation if approximately 80% of enrolled patients login to WEBCORE at least four times from the time of enrollment until six weeks following surgery. Patient assessment of the usefulness of WEBCORE will be measured via an exit survey. Clinician perceptions of the potential value of WEBCORE will be evaluated via an email survey and questions asked at a team meeting. Reasons for patient non-compliance will be assessed via results of the backup telephone calls to those who failed to login, and with the exit survey.

Potential benefits of this use of the WEBCORE platform in this context will be assessed by measuring the number and type of clinical interventions made in response to WEBCORE alerts, and by analyzing patient use of WEBCORE in relation to dates of surgery and development of documented post-surgical complications.

### **4.1.2 Patient Accrual**

This pilot study will be undertaken in patients undergoing laparotomy for presumed or confirmed gynecologic malignancy at MSKCC. Approximately 80% of all laparotomies on the gynecology service are performed for endometrial or ovarian cancer, split relatively evenly between the two (internal data). We anticipate a similar representation in our study population. We will enroll the first 5 patients of 110 patients as a small pilot to identify potential problems and correct any issues that may arise. After the evaluation of the first 5 patients the accrual period will remain open until at least 80 evaluable patients are enrolled.

### **4.1.3 Study Period**

**Duration:** For each patient, we will define a study interval beginning on the day of the pre-operative consent when the baseline questionnaire is performed, until the exit patient satisfaction interview takes place, which will be 6-8 weeks following the operative date.

**Justification:** There is no absolute definition of the post-operative period, although the Agency for Healthcare Research and Quality (AHRQ) [44] and the Surgical Care Improvement Project (SCIP) [45] generally set patient safety goals for the 30 day period following surgery. At Memorial Sloan-Kettering Cancer Center, post-operative complications are defined as those events occurring within 30 days of surgery [46], and the gynecology service has prospectively tracked and graded surgical complications for the last several years. We chose to have patients report symptoms up to and including the sixth week post-operatively because the duration of the post-operative period is poorly defined, and there may be value to the data we collect beyond 30 days. We expect to see an improvement in patients' scores on the EORTC QLQ-30, and the individual items from the CTCAE by the end of the reporting period (6 weeks).



**Memorial Sloan-Kettering Cancer Center  
IRB Protocol**

**IRB#: 08-155A(8)**

**4.2 Intervention**

Descriptions of the specific instruments are available in Section 7, and the instruments themselves are available in the appendices.

**Table 3: List of Interventions**

<b>Instrument</b>	<b>Method of Administration</b>	<b>Population</b>	<b>Evaluates</b>
<b>European Organization for Research and Treatment of Cancer QLQ-C30</b> (Appendix 4)	WEBCORE	Patients	HRQL, specific post-operative symptoms
<b>Common Toxicity Criteria</b> (Appendix 3)	WEBCORE	Patients	Urinary symptoms, wound symptoms
<b>Baseline Patient Information Questionnaire</b> (Appendix 1)	Paper	Patients	Demographics, computer knowledge
<b>Patient Satisfaction Interview</b> (Appendix 2)	WEBCORE	Patients	Satisfaction with WEBCORE
<b>Nurse Intervention Report</b> (Appendix 5)	Email	Clinic Nurses	Response(s) to automated email alerts
<b>Clinician Survey</b> (Appendix 8)	Email	Clinic Nurses	Satisfaction with WEBCORE
<b>Clinician Exit Meeting Questions</b> (Appendix 6)	Focus Group	Physicians, Nurses, Session Assistants	Satisfaction with WEBCORE

**4.2.1 The Online Platform**

This design consists of a homepage for patients to login to WEBCORE, followed by screens containing a single question on each page. This design was refined through usability testing at MSKCC.

**4.2.1 Patient Training Sessions**

At the time of enrollment, each subject will undergo a 10-minute training session for the WEBCORE system on an Internet-enabled computer. This training session will be conducted by the clinical research fellow coordinating this study or a designated RSA/session assistant using a computer located in a private



**Memorial Sloan-Kettering Cancer Center  
IRB Protocol**

**IRB#: 08-155A(8)**

patient computing area on the 6<sup>th</sup> floor of the MSKCC 53<sup>rd</sup> street outpatient clinic



## Memorial Sloan-Kettering Cancer Center IRB Protocol

**IRB#: 08-155A(8)**

building. The designated RSA will be trained by the research fellow before training the enrolled subjects. A wall-mounted touch-screen computer has previously been installed in a private area on this floor for 04-020 which may be used, or a wireless touch-screen laptop may be brought to the patient in a private area. Training will be identical to the training in currently open WEBCORE studies, and will include:

- Provision of a unique username/password and URL for WEBCORE.
- Instruction on how to navigate to the WEBCORE data entry frontpage using the Internet.
- Instructions on how to login to WEBCORE, enter personal information about symptoms and quality of life.
- Instructions that information entered into WEBCORE will not be reviewed by MSKCC personnel in real-time. It will be clearly stated during training that WEBCORE cannot be relied upon as a means of communicating information to clinicians. Patients will therefore be instructed to contact their health care provider(s) by telephone in cases of severe or concerning symptoms that arise between appointments, exactly as they would be instructed to do in the absence of WEBCORE use.
- A telephone number for technical assistance.

### 4.2.2 Clinician Training

Standardized training for participating MSKCC staff will be instituted prior to initiation of this protocol. In addition, a study investigator will be available during clinic visits to answer questions of staff, and to remind them of training points. Initial staff training will include:

- Showing applicable staff how to access and login to the WEBCORE administrative site using computers located in clinic.
- Explaining logoff procedures in order to assure the privacy of PHI.
- Demonstrating how to view and print WEBCORE Reports for participating patients, for use during clinic visits.
- Explaining to clinicians how to interpret WEBCORE Reports.
- Clarifying that printing WEBCORE Reports for inclusion with other visit materials is a mandatory part of this protocol, and must be done each time a participating patient has an appointment.
- Encouraging clinicians to discuss the results of WEBCORE reports with patients during visits.



## Memorial Sloan-Kettering Cancer Center IRB Protocol

**IRB#: 08-155A(8)**

### **4.2.3 Logging into WEBCORE**

Subjects are expected to login to WEBCORE once weekly from a home computer to fill out the online questionnaire. Subjects will be able to login to WEBCORE from any Internet-accessible computer whenever they wish to record symptoms, even if it is more frequently than the recommended weekly interval. Patients will be sent email reminders on the day they are due to login to WEBCORE which are identical to the email reminders currently in use in 04-020 (Appendix 10), and a follow-up email reminder email will be sent when they are overdue to login. Those who fail to respond to the follow-up email will receive a backup telephone call to administer the questionnaire and assess reasons for non-compliance.

Each time a patient logs in to the WEBCORE website, he or she will respond to items in the questionnaire, and these responses will be securely stored in the MSKCC Clinical Research Database (CRDB).

Technical assistance accessing the system will be available 24 hours. Patients will not be offered any financial incentives to login.

### **4.2.4 Generation of WEBCORE Reports at Outpatient Visits**

Based on information entered into WEBCORE and recorded in the WEBCORE database, it will be possible to generate summary “WEBCORE Reports” which track symptom trends over time for each patient who is assigned to use WEBCORE, in list or graphic form.

When a study participant comes for an office visit either during the study time period and/or for her first visiting following the end of the study period, her WEBCORE Report will be printed by clinic session assistants or an RSA. The report will then be added to other materials that are routinely reviewed by the nurse and/or gynecologic oncologist as a part of standard care (eg, laboratory test printouts, radiology results, procedure reports, or past clinic visit dictations). The Report printout will be the second page of these materials.

The technical functionality of WEBCORE will be designed such that information entered by patients just prior to clinic visits will be available immediately for printing in WEBCORE Reports (and thus for clinician review during that visit). Printing capabilities in the clinician work areas are readily available.

### **4.2.5 Warning Emails and Popup Messages**

If a patient self-reports a severe or disabling level of severity for any symptom(s) into WEBCORE an automated warning email flagged as “urgent” and titled “severe Patient-related symptom” will be sent in real-time to the research fellow, the designated RSA and the PI of the study. They will forward the email to the POA of the patient’s gynecologic oncologist and to the clinic nurse taking patient calls for that gynecologic oncologist that day. (This is the same system used presently to triage patient phone calls.) If the research fellow is not available,



**Memorial Sloan-Kettering Cancer Center  
IRB Protocol**

**IRB#: 08-155A(8)**

coverage will be provided by the designated RSA. In that event, the designated RSA will notify the POA of the patient's gynecologic oncologist and the clinic nurse taking patient calls for that gynecologic oncologist that day. No specific responses to these emails will be required, but any actions taken in response to these alerts by clinicians will be tracked (ie, telephone calls, supportive medication prescriptions, new appointments made, etc) using a form emailed to the nurse after the automated email alert (Appendix 5) and the "Ambulatory Care Phone/Email Communication Form" in the EMR. The forms will be collected by the research fellow or by the designated RSA. In addition, a warning popup message will advise the patient that WEBCORE information is not monitored in real-time and therefore to consider calling her physician's office about the symptom of concern.

## **5.0 CRITERIA FOR SUBJECT ELIGIBILITY**

### **5.1 Subject Inclusion Criteria**

- Participants must be 18 years or older.
- Participants must be able to provide informed consent.
- Participants must be scheduled to undergo laparotomy for presumed or known gynecologic cancer.
- The assessments were designed and validated in English and are not currently available in other languages. Translation of questionnaires into other languages would require reestablishing the reliability and validity of these measures. Therefore, participants must be able to communicate in English to complete the tests. Participants must be able to speak and read English fluently.
- Participants must have access to a home computer, have a personal email account, and check email at least once weekly by self-report

### **5.2 Subject Exclusion Criteria**

- Patients who have a cognitive or psychiatric deficit resulting in an inability to provide meaningful informed consent, as judged by the consenting professional, and/or as noted in the medical record.
- Patients who are undergoing pelvic exenterative surgery (with the exception of patients undergoing modified pelvic exenteration in the context of debulking for ovarian or uterine cancer).





**Memorial Sloan-Kettering Cancer Center  
IRB Protocol**

**IRB#: 08-155A(8)**

**6.0 RECRUITMENT PLAN**

The recruitment process will take place during office visits on the 6<sup>th</sup> floor of the MSKCC 53<sup>rd</sup> street outpatient clinic building. New patients, scheduled to undergo surgery, and consent visits, who are potentially eligible for the study will be identified by the treatment team. The investigator/ research staff of the study will be notified by the patient's treatment team.

After identifying potentially eligible patients the patients will be approached by the investigator/ research staff (Research Fellow and/ or Surgery RSA) either during the time of the initial visit or during the time of the consent for the surgical procedure. During the initial conversation between the investigator/research staff and the patient, the patient may be asked to provide certain health information that is necessary to the recruitment and enrollment process. The investigator/research staff may also review portions of their medical records at MSKCC in order to further assess eligibility. They will use the information provided by the patient and/or medical record to confirm that the patient is eligible and to inform the patient regarding study enrollment. If the patient turns out to be ineligible for the research study, the research staff will destroy all information collected on the patient during the initial conversation and medical records review, except for any information that must be maintained for screening log purposes (see Appendix 9).

**7.0 ASSESSMENT/EVALUATION PLAN**

**7.1 Baseline Information Questionnaire**

Variables that we expect may be predictors of WEBCORE utilization include age, education level, employment status, and prior Internet experience. These will be measured at baseline via a paper patient questionnaire (Appendix 1). This questionnaire will be administered by the consenting professional immediately after obtaining Informed Consent and Research Authorization. The paper questionnaire will be done at the time of the initial training session. Together, the training and the questionnaire will take 15 minutes.

**7.2 Demographic Data**

Basic demographic data, including age, race, American Society of Anesthesiologists Score (ASA), cancer type, stage of disease, current/planned therapy, procedure type, and details of any complications will be obtained by the research assistant or research fellow using the MSKCC electronic medical record.

**7.3 WEBCORE Questionnaire Items**

Based on expert consultation and literature review, questionnaires and items were selected to upload to WEBCORE for this study in order to focus on symptoms that may reflect general and specific post-operative complications, or which might cause distressing symptoms. The WEBCORE Questionnaire is a composition of items of validated instruments with a focus on postoperative symptom and QoL assessment.

These include a single-item assessments of symptoms using the patient-adaptation of





## Memorial Sloan-Kettering Cancer Center IRB Protocol

**IRB#: 08-155A(8)**

the NCI's CTCAE developed for prior WEBCORE studies [13]; and the well-established HRQL instrument, the European Organization for Research and Treatment of Cancer's QLQ-C30 [47]. Each validated instrument included in this protocol has undergone extensive prior psychometric testing and meets established standards for validity and reliability as detailed in the FDA Draft guidance for PROs [3, 5]. These questionnaires/items are described below:

### **7.3.1 European Organization for Research and Treatment of Cancer QLQ-C30 (EORTC QLQ-30 version 3.0)**

EORTC QLQ-30 version 3.0 (Appendix 4) is a validated instrument that broadly assesses health-related quality of life in cancer patients. In addition, many of the specific questions address clinically relevant symptoms in the post-operative period, including nausea, vomiting, constipation, diarrhea, fatigue, shortness of breath and ability to ambulate. It was developed by the EORTC Study Group on Quality of Life in response to a mandate to develop an integrated measurement system for evaluating HRQL of cancer patients participating in international clinical trials therefore the evaluation in the postoperative setting should be considered exploratory in nature [48]. The module has been tested in international populations of patients with heterogeneous diagnoses including lung, breast, and ovarian cancers. The module is comprised of 30 items which evaluate 6 major sub-scales of functioning: physical, role, emotion, social, cognition and a global assessment of quality of life. In addition, three symptom scales are used to measure fatigue, pain, emesis; and six single items assess financial impact, dyspnea, sleep disturbance, appetite, diarrhea and constipation [49]. This core instrument covers a general range of quality of life issues relevant to all patients with cancer. All multi-items scales have been found to significantly correlate with each other ( $p < .001$ ). Cronbach's alpha is near 0.80 or higher for all items. Test-retest reliability has ranged from 0.63 to 0.91 depending on the subscale [47].

This measure generally takes approximately 6 minutes to complete. For the purposes of this pilot study patients will be asked to take the EORTC QLQ-30 at baseline, three weeks after surgery and 6 weeks after surgery.

The first question of the EORTC QLQ-30 version 3.0 is, "Do you have any trouble doing strenuous activities, like carrying a heavy shopping bag or a suitcase?" and the available responses are "not at all", "a little", "quite a bit" and "very much". However, post-operatively patients are instructed to avoid lifting anything heavy, like a shopping bag or suitcase, for at least 6 weeks after surgery. After consultation with experts, including the Behavioral and Psychosocial Research Consultation Program at MSKCC, the decision was made to preserve the integrity of the validated instrument and to instruct the patients to choose the response "very much".



**Memorial Sloan-Kettering Cancer Center  
IRB Protocol**

**IRB#: 08-155A(8)**

**7.3.2 Individual Symptom Items**

To assess symptoms not addressed within the QLQ-C30, individual items will be included for symptoms of potential concern in the post-operative period. These symptoms were chosen based on expert consultation and literature search, and include general postoperative symptoms such as pain, fever, shortness of breath, surgical wound symptoms, nausea and vomiting, bowel function, fatigue as well as more specific gynecologic symptoms such as dysuria, urinary retention, and finally cardiac, cardio-vascular and pulmonary symptoms. These will be assessed via patient adaptations of NCI CTCAE items [13].

**7.4 Patient Satisfaction**

Patient assessment of the usefulness of WEBCORE will be measured via an exit questionnaire (Appendix 2) available on WEBCORE 6 to 8 weeks after surgery. Items in this questionnaire are adapted from validated measures used in prior studies evaluating satisfaction with information technology interventions [50-54] and instruments developed by the Picker Institute [55], and makes use of an ordinal scale for recording responses. Questions address two specific areas: ease of use (ease of login, ease of data entry, understandability of questions), and perceived usefulness (memory triggering, use of information by doctors/nurses, feeling of control over own care, feeling that care was improved).

**7.5 Clinician Evaluation of WEBCORE**

**7.5.1 Nurse Intervention Report**

If a patient submits a response that is concerning according to pre-specified limits set by the gynecologic oncology service, an automated email alert flagged as “urgent” and titled “sever Patient-reported symptom” will be sent in real-time to the research fellow, the designated RSA and the PI of the study. They will forward the email to the POA of the patient’s gynecologic oncologist and to the clinic nurse taking patient calls for that gynecologic oncologist that day. (This is the same system used presently to triage patient phone calls.) If the research fellow is not available, coverage will be provided by the designated RSA. In that event, the designated RSA will notify the POA of the patient’s gynecologic oncologist and the clinic nurse taking patient calls for that gynecologic oncologist that day. No specific responses to these emails will be required, but any actions taken in response to these alerts by clinicians will be tracked (ie, telephone calls, supportive medication prescriptions, new appointments made, etc) using a form emailed to the nurse after the automated email alert (Appendix 5) and the “Ambulatory Care Phone/Email Communication Form” in the EMR. The forms will be collected by the research fellow or by the designated RSA. The form will list the patient’s name, diagnosis, date of surgery, surgery and the symptom(s)



## Memorial Sloan-Kettering Cancer Center IRB Protocol

**IRB#: 08-155A(8)**

that triggered the alert. The form will take approximately 5 minutes to fill out. If the nurse indicates that a patient was contacted as a result of the automated email, the research fellow or RSA will look at the “Ambulatory Care Phone/Email Communication Form” in the EMR and record what action was taken. Forms will be collected by the research fellow or RSA. Possible responses include: diagnostic test, prescription, office visit scheduled, UCC visit recommended, no action, other.

### **7.5.2 Clinician Group Meeting Questions: Focus Group**

At the completion of the study period, a focus group will be scheduled with all clinicians and support personnel involved in the care of enrolled patients (physicians, nurses, Session Assistants). Specific open-ended questions will be asked verbally to assess qualitative impressions of WEBCORE, and to obtain suggestions for future development of WEBCORE (Appendix 6). Questions will include whether WEBCORE was felt to be useful overall, not useful, or detrimental; whether it saved or consumed time; whether summary reports should be used to replace other assessment documents in the patient chart; and whether clinicians feel that patient self-generated reports accurately depict levels of toxicity.

### **7.5.3 Clinician Satisfaction**

At the completion of the study, nurses and physicians will be emailed a survey to evaluate clinician satisfaction, strengths and weaknesses of WEBCORE (Appendix 8). It will take 10 minutes to complete.

## **8.0 TOXICITIES/SIDE EFFECTS**

Minimal risk of psychological distress is posed by study questions that ask participants to identify their current problems. However, since study items were chosen to reflect what are likely to be existing concerns, the present study is not expected to markedly increase participants' psychological distress above their routine concerns. WEBCORE allows a participant to skip any question(s) that she chooses, without compromising her ability to complete the rest of the questionnaire. Formal testing of depression is not included as part of the questionnaire, however, if a patient responds “quite a bit” or “very much” to the question, “Did you feel depressed?”, an automatic email alert will be sent to the clinic nurse and the research fellow, who will follow up with the patient. In addition, any patient who communicates distress to the RSA or research fellow verbally will be referred for counseling. In the unlikely event of significant acute distress, participants will be referred to a staff member from the Department of Psychiatry and Behavioral Sciences. If a research participant indicates that s/he is acutely suicidal and poses a significant and acute risk of self-harm, this information will be shared with their attending physician so that timely and appropriate psychiatric assessment and care can be provided by the MSKCC



**Memorial Sloan-Kettering Cancer Center  
IRB Protocol**

**IRB#: 08-155A(8)**

Social Work or Psychiatry Service staff. There is no guarantee of benefit to participants based on study participation. Participants can withdraw from the study at any time.

## **9.0 PRIMARY AND SECONDARY OUTCOMES**

### **9.1 Primary Outcome**

The primary objective of this study is to evaluate the feasibility of patients using WEBCORE to track their own symptoms and HRQL while recovering from laparotomy for presumed or confirmed gynecologic cancer. In this pilot feasibility study, we will measure several parameters related to patients' utilization of the WEBCORE system, in order to evaluate the potential for implementation of collecting patient self-reported measures in a gynecologic oncology practice and/or in clinical trials.

- To gauge patients' willingness to record their experiences we will record the ratio of the number of patients approached for study participation to the number who enroll. The proportion of patients approached versus consented will be tracked continuously by the Research Fellow and the designated Surgery RSA.
- We will evaluate the extent to which patients who enroll in the protocol use the WEBCORE system to self-report symptoms and HRQL. Specifically, we will measure how often each user accesses the WEBCORE system, and will note the time and date that utilization occurs. Perfect compliance would be logging on and completing all the questions seven times: once pre-operatively, and then weekly for six weeks following surgery. In keeping with standards for the assessment of feasibility of online platforms, as a crude measure of feasibility, we will consider the study results to suggest that WEBCORE is a strategy warranting larger scale evaluation if approximately 80% of participants login to WEBCORE at least four times during the study period [13]. In our analysis, we will look at WEBCORE utilization (1) over time and (2) in relation to the presence or absence of documented minor and major surgical complications. The proportion of users who logged in with or without a follow-up reminder email will be tabulated. We will assess for attrition of compliance over time by measuring the proportion of patients who login during each consecutive week of observation.
- Results of backup telephone calls made when patients have not logged in will be tabulated to assess if the reported symptoms of such patients differ from reports of patients who have logged in on time, and reasons for non-compliance.
- Variables that we expect may affect levels of utilization include cancer type diagnosis, procedure type, age, education level, employment status, prior Internet experience, baseline ASA score and baseline HRQL. Therefore, these will be measured at baseline via a questionnaire (Appendix 1), chart review, and by the patient's initial score on the EORTC QLQ-C30 when she logs in pre-operatively.



**Memorial Sloan-Kettering Cancer Center  
IRB Protocol**

**IRB#: 08-155A(8)**

**9.2 Secondary Outcomes**

**9.2.1 Patient Assessment of WEBCORE**

Patient assessment of the usefulness of WEBCORE will be measured via an exit questionnaire (Appendix 2).

**9.2.2 Clinician Assessment of WEBCORE**

At the completion of the study period, an email clinician survey will be administered (Appendix 8), and a focus group will be scheduled with all clinicians and support personnel involved in the care of enrolled patients (physicians, nurses, Session Assistants). Specific open-ended questions will be asked verbally to assess qualitative impressions of WEBCORE, and to obtain suggestions for future development of WEBCORE (Appendix 6). Questions will include whether WEBCORE was felt to be useful overall, not useful, or detrimental; whether it saved or consumed time; whether summary reports should be used to replace other assessment documents in the patient chart; and whether clinicians feel that patient self-generated reports accurately depict levels of toxicity.

**9.2.3 Clinician Responses to Alerts**

Each time an automated email alert is sent to the primary clinical team (nurse), the clinician will be emailed a form to assess the response to the alert (Appendix 5), which the clinical fellow coordinating the study will collect. If the nurse indicates that a patient was contacted as a result of the automated email, the research fellow or RSA will look at the “Ambulatory Care Phone/Email Communication Form” in the EMR and record what action was taken. Possible responses include: diagnostic test, prescription, office visit scheduled, UCC visit recommended, no action, other.

**9.2.4 Individual Symptom items and Quality of Life**

EORTC, and Individual Symptom Items (ISI, NCI-CTC) as described in section 7 will be collected at predefined time points. A composite score for the EORTC questionnaire will be calculated following the EORTC scoring manual at each time point. In addition, individual items from these instruments will be summarized at each time point and patients’ profiles over time will be described graphically to assess which of these items fluctuate over time, or whether they capture patients’ symptoms in this post-op period. A descriptive analysis of individual symptoms reported will be performed. Most commonly reported and most distressing symptoms will be documented.



**Memorial Sloan-Kettering Cancer Center  
IRB Protocol**

**IRB#: 08-155A(8)**

**Table 4. Study Timetable**

	Pre-op Consent Visit	Post-op Week 1	Post-op Week 2	Post-op Week 3	Post-op Week 4	Post-op Week 5	Post-op Week 6	Post-op Week 6-8
Informed Consent / Research Authorization	<b>X</b>							
Paper Baseline Questionnaire	<b>X</b>							
Online Patient Study (CTC)- Questionnaire	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	
Online Patient Study (EORTC)- Questionnaire	<b>X</b>			<b>X</b>			<b>X</b>	
Patient Satisfaction Questionnaire								<b>X</b>
Clinician Feedback Email Questionnaire								<b>X</b>

**Pre-op, Pre-operative; Post-op, Post-operative**

**10.0 CRITERIA FOR REMOVAL FROM STUDY**

If a patient is enrolled but does not subsequently undergo planned surgery, she will be removed from the study and will not be evaluated in the feasibility assessment. A participant can be removed from the study at any time if her doctor believes it is in her best interest to do so, or if she develops cognitive impairment as judged by her doctor or noted in the medical record. A participant may withdraw from the study at any time.

**11.0 BIOSTATISTICS**

**11.1 Sample Size and Accrual**

The sample size of 110 patients is based on the personnel resources (one dedicated clinical fellow) and time available (approximately one year) to conduct this study. A responder is defined as a patient who logs in and completes at least half of the questionnaire at least 4/7 potential logins. The hypotheses being tested are: 80% is considered acceptable whereas 65% is considered too low. The study requires 79 patients to show a difference from 65% to 80% in percent responders with 90% power and type I error of 4%. If at the end of the study 58/79 are responders then the study will conclude that the use of WEBCORE in this population is feasible.

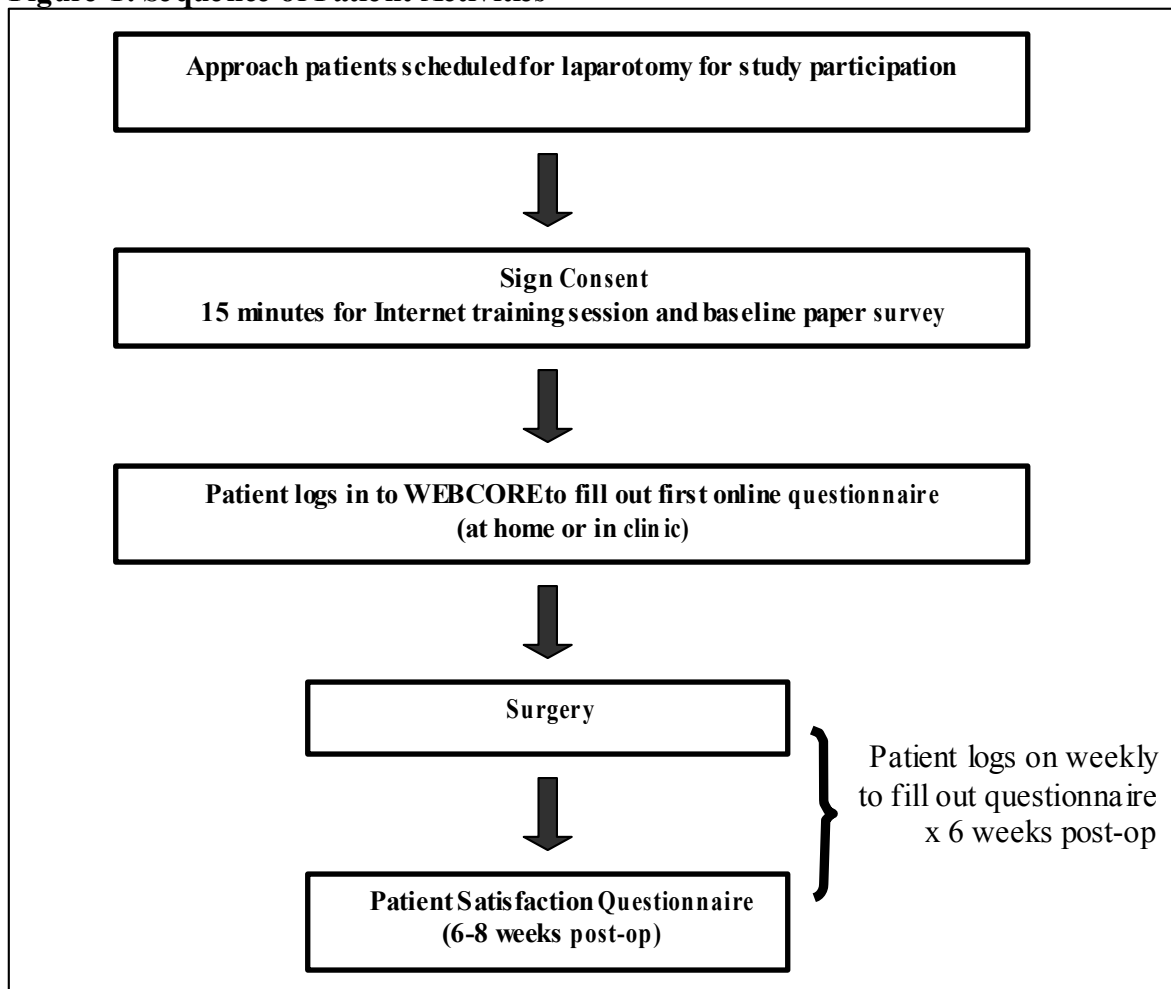


## Memorial Sloan-Kettering Cancer Center IRB Protocol

**IRB#: 08-155A(8)**

Based on prior MSKCC research in this population, we anticipate that 90% of approached patients will agree to participate, of which 75% will be regular email users [13]. We will track the proportion of patients approached who consent as one of the measures of feasibility. The proportion of patients approached versus consented will be tracked continuously by the Research Fellow and the designated Surgery RSA. There are approximately 570 laparotomies performed on the gynecology service annually (internal data). We anticipate that accrual for the study will be complete within 6-9 months. We will enroll the first 5 patients of 110 patients as a small pilot to identify potential problems and correct any issues that may arise. After the evaluation of the first 5 patients the accrual period will remain open until at least 80 evaluable patients are enrolled. The sequence of patient activities following accrual is shown in Figure 1.

**Figure 1: Sequence of Patient Activities**





**Memorial Sloan-Kettering Cancer Center  
IRB Protocol**

**IRB#: 08-155A(8)**

**11.2 Primary Objective**

The primary objective of this study is to evaluate the feasibility of patients using WEBCORE to track their own symptoms and HRQL while recovering from laparotomy for presumed or confirmed gynecologic cancer. We will calculate summary statistics for several measures of utilization, including the frequency with which each user logs in and completes a WEBCORE online questionnaire; the proportion of patients who log in at each sequential week of follow-up; and when utilization occurs in relation to surgery and/or complications. If at the end of the study 58/79 are responders (a responder is a person who has logged in at least 4/7 times and completed at least half of the questions each time) then we will conclude that the use of WEBCORE in this population is feasible. If this hypothesis is true, we will consider the study results to suggest that WEBCORE is a strategy warranting larger scale evaluation [13]. Baseline patient characteristics and disease information will be examined via a logistic regression for their relationship to a patient's likelihood of being a responder. The following predictors will be considered: type of cancer, type of surgery, stage of disease, computer experience/age/education

In our analysis, we will look at WEBCORE utilization (1) over time and (2) in relation to the presence or absence of documented minor and major surgical complications. We will tabulate the proportion of users who logged in with or without a follow-up reminder email. We will assess for attrition of compliance over time by measuring the proportion of patients who login during each consecutive week of observation. Results of backup telephone calls made when patients have not logged in will be tabulated to assess if the reported symptoms of such patients differ from reports of patients who have logged in on time, and reasons for non-compliance. We will calculate the proportion of WEBCORE responders compared to the total number of enrollees (responders: enrollees), as well as the proportion of responders compared to total number of patients eligible (responders: eligible). Baseline characteristics for those who refuse enrollment will be compared to those who agree to participate.

**11.3 Secondary Outcomes for Patients**

QOL Measures:

EORTC, and Individual Symptom Items (ISI, NCI-CTC) as described in section 7 will be collected at predefined time points. A composite score for the EORTC questionnaire will be calculated following the EORTC scoring manual at each time point. In addition, individual items from these instruments will be summarized at each time point and patients' profiles over time will be described graphically to assess which of these items fluctuate over time, or whether they capture patients' symptoms in this post-op period.





## Memorial Sloan-Kettering Cancer Center IRB Protocol

**IRB#: 08-155A(8)**

### Exit survey:

Patient assessment of the usefulness of WEBCORE will be measured via an exit patient satisfaction questionnaire which will be given via WEBCORE website. This will take place between 6 and 8 weeks post-operatively, and will be given online via WEBCORE website (Appendix 2). Items in this questionnaire are adapted from validated measures used in prior studies evaluating satisfaction with information technology interventions [50-54] and instruments developed by the Picker Institute [55], and makes use of an ordinal scale for recording responses.

Patients who recover quickly from surgery may choose not to use WEBCORE because they feel well, whereas patients experiencing the most severe post-operative symptoms or complications may feel too ill to login. The follow-up telephone call for those who fail to login is intended to address such questions. In addition, in the patient exit survey, questions will specifically address reasons why WEBCORE was not used (Appendix 2). The exit survey will be summarized descriptively in order to understand whether patients failed to use WEBCORE because of technical obstacles, or severity of symptoms, or if they used WEBCORE in a limited fashion despite their symptoms. We anticipate that WEBCORE may be utilized less frequently by patients with the worst symptoms.

### **11.4 Secondary Outcomes for Clinicians**

We will tabulate the number of phone calls made to patients as a result of the automated alerts, and the actions that were taken. This data will be purely descriptive and hypothesis-generating. If it appears that the automated alerts led to important patient contacts and interventions, further studies could be conducted to evaluate the use of WEBCORE in real time as an additional method of communication between nurses and patients in the post-operative period.

Clinician qualitative impressions of WEBCORE will be gathered at the end of the study during a focus group, at which open-ended questions will be asked (Appendix 6). A Clinician's Satisfaction Survey will be sent out once at the end of the study. This will be filled out by each participating clinician once, and will be summarized descriptively (Appendix 8). Information gathered from the focus group and the exit survey, and will be used towards future development of WEBCORE automated alerts and printed reports.

Clinician impressions of WEBCORE are of interest because they may influence how WEBCORE or a similar system is used clinically. The purpose of this group meeting is to obtain feedback regarding how the WEBCORE system impacted clinician workflow. Physicians and RNs will be asked for specific suggestions regarding how the system could be altered and whether it is perceived as potentially valuable, neutral, or a hindrance to the provision of patient care.



**Memorial Sloan-Kettering Cancer Center  
IRB Protocol**

**IRB#: 08-155A(8)**

**11.5 Missing Data**

The WEBCORE system allows patients to skip individual items when completing the online form. Therefore, we will tabulate the number of missing items from each of the included questionnaires in this study (BPI, QLQ-C30, and CTCAE). These will be reported descriptively, to assess if any particular items are skipped with excess frequency compared to others. Based on prior WEBCORE studies, however, we anticipate that the frequency of skipped individual items will be very low (~1%). In addition, as a part of the overall feasibility evaluation, we will tabulate the frequency with which patients fail to complete the entire form on schedule.

**12.0 RESEARCH PARTICIPANT REGISTRATION PROCEDURES**

**12.1 Research Participant Registration**

Confirm eligibility as defined in the section entitled Criteria for Patient/Subject Eligibility.

Obtain informed consent, by following procedures defined in section entitled Informed Consent Procedures.

During the registration process registering individuals will be required to complete a protocol specific Eligibility Checklist.

All participants must be registered through the Protocol Participant Registration (PPR) Office at Memorial Sloan-Kettering Cancer Center. PPR is available Monday through Friday from 8:30am-5:30pm at 646-735-8000. Registrations must be submitted via the PPR Electronic Registration System (<http://ppr/>). The completed signature page of the written consent/RA or verbal script/RA, a completed Eligibility Checklist and other relevant documents must be uploaded via the PPR Electronic Registration System.

**13.0 DATA MANAGEMENT ISSUES**

A dedicated Clinical Research Fellow and a Research Study Assistant (RSA) will be assigned to this study. The responsibilities of the Clinical Research Fellow will include project compliance, data collection, abstraction and entry, data reporting, regulatory monitoring, problem resolution and prioritization, and coordination of the activities of the protocol study team. The responsibilities of the Surgery RSA will include project compliance, data collection, and abstraction and entry.

The data collected for this study will be entered into a secure database. Source documentation will be available to support the computerized patient record.



## Memorial Sloan-Kettering Cancer Center IRB Protocol

**IRB#: 08-155A(8)**

### 13.1 Quality Assurance

Weekly registration reports will be generated to monitor patient accruals and completeness of registration data. Routine data quality reports will be generated to assess missing data and inconsistencies. A log of all eligible patients will be maintained. Accrual rates and extent and accuracy of evaluations and follow-up will be monitored periodically throughout the study period and potential problems will be brought to the attention of the study team for discussion and action.

Random-sample data quality and protocol compliance audits will be conducted by the study team, at a minimum of two times per year, more frequently if indicated.

### 13.2 Web Security

This study will use the WEBCORE online platform which was developed at MSKCC and has previously undergone privacy and security review. The current design for the WEBCORE system architecture is reproduced in a diagram in Appendix 7. This configuration has been developed with input from and review by computer security/privacy experts in the MSKCC Information Systems office and is designed to assure that WEBCORE conforms with current MSKCC and HIPAA standards for the protection of PHI. A Security Evaluation Peer Working Group (SEPWG) form has previously been reviewed by the MSKCC Information Security Department outlining the configuration and functionality of the WEBCORE system. WEBCORE is currently being used in MSKCC protocols 04-020 and 07-034 (CALGB 70501).

Patient data collected through WEBCORE will be stored in the secure MSKCC Clinical Research Database (CRDB). Access to data will be password protected, and user-level access will be controlled to allow access to a specific patient's data only for clinicians and research staff responsible for that specific patient. Data will only be reviewed by staff when directly related to patient care or conduct of this study.

### 13.3 Data and Safety Monitoring

The Data and Safety Monitoring (DSM) Plans at Memorial Sloan-Kettering Cancer Center were approved by the National Cancer Institute in September 2001. The plans address the new policies set forth by the NCI in the document entitled "Policy of the National Cancer Institute for Data and Safety Monitoring of Clinical Trials" which can be found at: <http://cancertrials.nci.nih.gov/researchers/dsm/index.html>. The DSM Plans at MSKCC were established and are monitored by the Office of Clinical Research. The MSKCC Data and Safety Monitoring Plans can be found on the MSKCC Intranet at: <http://mskweb2.mskcc.org/irb/index.htm>

There are several different mechanisms by which clinical trials are monitored for data, safety and quality. There are institutional processes in place for quality assurance (e.g., protocol monitoring, compliance and data verification audits,



**Memorial Sloan-Kettering Cancer Center  
IRB Protocol**

**IRB#: 08-155A(8)**

therapeutic response, and staff education on clinical research QA) and departmental procedures for quality control, plus there are two institutional committees that are responsible for monitoring the activities of our clinical trials programs. The committees: *Data and Safety Monitoring Committee (DSMC)* for Phase I and II clinical trials, and the *Data and Safety Monitoring Board (DSMB)* for Phase III clinical trials, report to the Center's Research Council and Institutional Review Board.

During the protocol development and review process, each protocol will be assessed for its level of risk and degree of monitoring required. Every type of protocol (e.g., NIH sponsored, in-house sponsored, industrial sponsored, NCI cooperative group, etc.) will be addressed and the monitoring procedures will be established at the time of protocol activation.

#### **14.0 PROTECTION OF HUMAN SUBJECTS**

As this is an observational quality of life study of the impact of treatment on QOL, it is unlikely that there will be any adverse effects due to this protocol. Participation is voluntary and the protocol will not interfere with routine treatment. It is possible that patients may experience distress when answering questions. Any participant who demonstrates severe depressive symptoms or requests counseling will be referred for counseling. Participants can withdraw at any time. Information for each participant will be recorded using a unique identification number in a separate database. This number will not be linked to personal data which may compromise the anonymity of the participant. Access to the database will be limited to the research team. All participants will be 18 years or older. Each participant will be required to sign an informed consent prior to completing the baseline questionnaire. Consent forms will be signed by a consenting professional upon enrollment at which time all questions may be answered. There will be no financial burden incurred by participants.

##### **14.1 Rapid Reporting of Potentially Serious Toxicities (WEBCORE Automated Alerts):**

Patients will be informed at multiple time points that WEBCORE is not a rapid response system, is not a replacement for contacting a physician's office for serious health concerns (such as severe toxicity-related symptoms), and that there is no regular formal monitoring of information entered into WEBCORE. This will be printed in the Informed Consent, told verbally to enrollees at the time of accrual, and will be included on a screen (browser page) in WEBCORE every time a patient logs in.

In addition, for selected symptom items in the online questionnaire, if a patient self-reports a severe or disabling level grade ( $\geq 7/10$  for QLQ-C30,  $\geq 4$  for "pain now" and  $\geq 5$  for "pain worst" on the BPI;  $\geq 3$  for CTCAE) [personal communication, CS



## Memorial Sloan-Kettering Cancer Center IRB Protocol

**IRB#: 08-155A(8)**

Cleeland], a popup box will appear on the screen recommending that the patient call her physician's office.

In such cases, an automated email alert will be generated by WEBCORE and sent to the primary clinicians (nurse and/or physician) as well as to the coordinating Clinical Research Fellow and designated study RSA. This e-mail will be flagged "urgent" and titled "severe Patient-reported symptom" to ensure prompt response by MSK. No specific clinical response to the alert email will be required. The WEBCORE - generated email will state the following, for example: "*Jane Smith MRN #XXXXXXX*, a patient of *Dr. Chi*, reported she vomited "quite a bit", had "very much" constipation, in the last week, potentially serious symptoms, into the WEBCORE online system, at 4:47pm on 8/3/08." Clinicians' responses to the WEBCORE Report will be tracked by the Clinical Research Fellow (Appendix 5).

### 14.2 Privacy

This study will involve the collection of confidential patient self-reports of HRQL and symptoms over the Internet. Security and privacy precautions have been taken in the design of the WEBCORE online platform. Patient data collected via WEBCORE will be stored in the secure MSKCC Clinical Research Database (CRDB). User-level access to data will be password protected, and only individual patients, appropriate clinical staff, and research study staff will have access to data.

MSKCC's Privacy Office may allow the use and disclosure of protected health information pursuant to a completed and signed Research Authorization form. The use and disclosure of protected health information will be limited to the individuals described in the Research Authorization form. A Research Authorization form must be completed by the Principal Investigator and approved by the IRB and Privacy Board.

### 14.3 Serious Adverse Event (SAE) Reporting

Only SAEs related to using the online **WEBCORE** system will be reported to the IRB. Any SAE must be reported to the IRB/PB as soon as possible but no later than 5 calendar days. The IRB/PB requires a Clinical Research Database (CRDB) SAE report be submitted electronically to the SAE Office at [sae@mskcc.org](mailto:sae@mskcc.org). This report should contain the following information:

Fields populated from CRDB:

- Subject's name (generate the report with only initials if it will be sent outside of MSKCC)
- Medical record number
- Disease/histology (if applicable)



**Memorial Sloan-Kettering Cancer Center  
IRB Protocol**

**IRB#: 08-155A(8)**

- Protocol number and title

Data needing to be entered:

- The date the adverse event occurred
- The adverse event
- Relationship of the adverse event to the treatment (drug, device, or intervention)
- If the AE was expected
- The severity of the AE
- The intervention
- Detailed text that includes the following information:
  - A explanation of how the AE was handled
  - A description of the subject's condition
  - Indication if the subject remains on the study
  - If an amendment will need to be made to the protocol and/or consent form

The PI's signature and the date it was signed are required on the completed report.

## **15.0 INFORMED CONSENT PROCEDURES**

Before protocol-specified procedures are carried out, consenting professionals will explain full details of the protocol and study procedures as well as the risks involved to participants prior to their inclusion in the study. Participants will also be informed that they are free to withdraw from the study at any time. All participants must sign an IRB/PB-approved consent form indicating their consent to participate. This consent form meets the requirements of the Code of Federal Regulations and the Institutional Review Board/Privacy Board of this Center. The consent form will include the following:

1. The nature and objectives, potential risks and benefits of the intended study.
2. The length of study and the likely follow-up required.
3. Alternatives to the proposed study. (This will include available standard and investigational therapies. In addition, patients will be offered an option of supportive care for therapeutic studies.)
4. The name of the investigator(s) responsible for the protocol.
5. The right of the participant to accept or refuse study interventions/interactions and to withdraw from participation at any time.

Before any protocol- specific procedures can be carried out, the consenting professional will fully explain the aspects of patient privacy concerning research specific information. In addition to signing the IRB Informed Consent, all patients must agree to the Research Authorization component of the informed consent form.



Memorial Sloan-Kettering Cancer Center  
IRB Protocol

IRB#: 08-155A(8)

Each participant and consenting professional will sign the consent form. The participant must receive a copy of the signed informed consent form.

**16.0 REFERENCE(S)**

1. Fowler, F.J., Jr., et al., *Patient-reported complications and follow-up treatment after radical prostatectomy. The National Medicare Experience: 1988-1990 (updated June 1993)*. Urology, 1993. **42**(6): p. 622-9.
2. Litwin, M.S., et al., *Differences in urologist and patient assessments of health related quality of life in men with prostate cancer: results of the CaPSURE database*. J Urol, 1998. **159**(6): p. 1988-92.
3. Lipscomb, J., C.C. Gotay, and C.F. Snyder, *Patient-reported outcomes in cancer: a review of recent research and policy initiatives*. CA Cancer J Clin, 2007. **57**(5): p. 278-300.
4. <http://nihroadmap.nih.gov/clinicalresearch/promis/>. accessed 10-23-07.
5. *Guidance for industry: patient-reported outcome measures: use in medical product development to support labeling claims: draft guidance*. Health Qual Life Outcomes, 2006. **4**: p. 79.
6. Velikova, G., et al., *Measuring quality of life in routine oncology practice improves communication and patient well-being: a randomized controlled trial*. J Clin Oncol, 2004. **22**(4): p. 714-24.
7. Basch, E., et al., *Long-term toxicity monitoring via electronic patient-reported outcomes in patients receiving chemotherapy*. J Clin Oncol, 2007. **25**(34): p. 5374-80.
8. Trotti, A., et al., *Patient-reported outcomes and the evolution of adverse event reporting in oncology*. J Clin Oncol, 2007. **25**(32): p. 5121-7.
9. Basch, E.M., et al., *American Society of Clinical Oncology endorsement of the Cancer Care Ontario Practice Guideline on nonhormonal therapy for men with metastatic hormone-refractory (castration-resistant) prostate cancer*. J Clin Oncol, 2007. **25**(33): p. 5313-8.
10. Basch, E., et al., *Evaluation of an online platform for cancer patient self-reporting of chemotherapy toxicities*. J Am Med Inform Assoc, 2007. **14**(3): p. 264-8.
11. Basch, E., et al., *Patient versus clinician symptom reporting using the National Cancer Institute Common Terminology Criteria for Adverse Events: results of a questionnaire-based study*. Lancet Oncol, 2006. **7**(11): p. 903-9.
12. Basch, E., et al., *An evidence-based systemic review Echinacea E. angustifolia DC, E. pallida, E. purpurea by the Natural Standard Research Collaboration*. J Herb Pharmacother, 2005. **5**(2): p. 57-88.
13. Basch, E., et al., *Patient online self-reporting of toxicity symptoms during chemotherapy*. J Clin Oncol, 2005. **23**(15): p. 3552-61.
14. Sutherland, H.J., et al., *Cancer patients: their desire for information and participation in treatment decisions*. J R Soc Med, 1989. **82**(5): p. 260-3.
15. Mossman, J., M. Boudioni, and M.L. Slevin, *Cancer information: a cost-effective intervention*. Eur J Cancer, 1999. **35**(11): p. 1587-91.



Memorial Sloan-Kettering Cancer Center  
IRB Protocol

IRB#: 08-155A(8)

16. Davison, B.J. and L.F. Degner, *Feasibility of using a computer-assisted intervention to enhance the way women with breast cancer communicate with their physicians*. *Cancer Nurs*, 2002. **25**(6): p. 417-24.
17. Jefford, M. and M.H. Tattersall, *Informing and involving cancer patients in their own care*. *Lancet Oncol*, 2002. **3**(10): p. 629-37.
18. <http://outcomes.cancer.gov/publications/workshops/proact/>. accessed 10-23-07.
19. Talcott, J.A., et al., *Patient-reported impotence and incontinence after nerve-sparing radical prostatectomy*. *J Natl Cancer Inst*, 1997. **89**(15): p. 1117-23.
20. Cleeland, C.S., et al., *A Computerized Telephone Monitoring and Alert System to Reduce Postoperative Symptoms: A Randomized Trial*. *Journal of Clinical Oncology, ASCO Annual Meeting Proceedings 2008*, 2008.
21. Montgomery, G.H. and D.H. Bovbjerg, *Presurgery distress and specific response expectancies predict postsurgery outcomes in surgery patients confronting breast cancer*. *Health Psychol*, 2004. **23**(4): p. 381-7.
22. McDonald, S., S. Hetrick, and S. Green, *Pre-operative education for hip or knee replacement*. *Cochrane Database Syst Rev*, 2004(1): p. CD003526.
23. Palmer, J.A., *Decreasing anxiety through patient education*. *Plast Surg Nurs*, 2007. **27**(4): p. 215-20.
24. Fitzpatrick, E. and A. Hyde, *Nurse-related factors in the delivery of preoperative patient education*. *J Clin Nurs*, 2006. **15**(6): p. 671-7.
25. Formica, M., et al., *Can clinical trials requiring frequent participant contact be conducted over the Internet? Results from an online randomized controlled trial evaluating a topical ointment for herpes labialis*. *J Med Internet Res*, 2004. **6**(1): p. e6.
26. Kongsved, S.M., et al., *Response rate and completeness of questionnaires: a randomized study of Internet versus paper-and-pencil versions*. *J Med Internet Res*, 2007. **9**(3): p. e25.
27. Leece, P., et al., *Internet versus mailed questionnaires: a controlled comparison (2)*. *J Med Internet Res*, 2004. **6**(4): p. e39.
28. Gil, K.M., et al., *Effect of method of administration on longitudinal assessment of quality of life in gynecologic cancer: an exploratory study*. *Health Qual Life Outcomes*, 2005. **3**: p. 6.
29. Basch, E.M., et al., *Use of information resources by patients with cancer and their companions*. *Cancer*, 2004. **100**(11): p. 2476-83.
30. Anderson, K.O., et al., *Symptom burden in patients undergoing autologous stem-cell transplantation*. *Bone Marrow Transplant*, 2007. **39**(12): p. 759-66.
31. Fox, S. *Pew Internet and American Life Project*. 2006 [cited 2008 April 2, 2008]; Available from: [http://www.pewinternet.org/pdfs/PIP\\_Online\\_Health\\_2006.pdf](http://www.pewinternet.org/pdfs/PIP_Online_Health_2006.pdf).
32. Liederman, E.M. and C.S. Morefield, *Web messaging: a new tool for patient-physician communication*. *J Am Med Inform Assoc*, 2003. **10**(3): p. 260-70.
33. Baldwin, F.D., *The doctors is in. With physician-patient messaging via Web portals, everyone is better served*. *Healthc Inform*, 2002. **19**(10): p. 44-8.
34. Murray, E., et al., *The impact of health information on the internet on the physician-patient relationship: patient perceptions*. *Arch Intern Med*, 2003. **163**(14): p. 1727-34.





Memorial Sloan-Kettering Cancer Center  
IRB Protocol

IRB#: 08-155A(8)

35. Murray, E., et al., *The impact of health information on the Internet on health care and the physician-patient relationship: national U.S. survey among 1,050 U.S. physicians*. J Med Internet Res, 2003. **5**(3): p. e17.
36. Ferguson, T., *Online patient-helpers and physicians working together: a new partnership for high quality health care*. BMJ, 2000. **321**(7269): p. 1129-32.
37. Hobbs, J., et al., *Opportunities to enhance patient and physician e-mail contact*. Int J Med Inform, 2003. **70**(1): p. 1-9.
38. Taylor, K., *The clinical e-mail explosion*. Physician Exec, 2000. **26**(1): p. 40-5.
39. Gaster, B., et al., *Physicians' use of and attitudes toward electronic mail for patient communication*. J Gen Intern Med, 2003. **18**(5): p. 385-9.
40. Kalsman, M.W. and D.A. Acosta, *Use of the Internet as a medical resource by rural physicians*. J Am Board Fam Pract, 2000. **13**(5): p. 349-52.
41. Baraff, L.J., et al., *Use of the Internet and e-mail for medical advice and information by parents of a university pediatric faculty practice*. Clin Pediatr (Phila), 2003. **42**(6): p. 557-60.
42. Zhou, Y.Y., et al., *Patient access to an electronic health record with secure messaging: impact on primary care utilization*. Am J Manag Care, 2007. **13**(7): p. 418-24.
43. Matthews, S.C., et al., *The internet for medical information about cancer: help or hindrance?* Psychosomatics, 2003. **44**(2): p. 100-3.
44. Cleeland, C.S., *Symptom burden: multiple symptoms and their impact as patient-reported outcomes*. J Natl Cancer Inst Monogr, 2007(37): p. 16-21.
45. Efficace, F., et al., *Health-related quality of life and symptom assessment in clinical research of patients with hematologic malignancies: where are we now and where do we go from here?* Haematologica, 2007. **92**(12): p. 1596-8.
46. Martin, R.C., 2nd, M.F. Brennan, and D.P. Jaques, *Quality of complication reporting in the surgical literature*. Ann Surg, 2002. **235**(6): p. 803-13.
47. Hjermstad, M.J., et al., *Test/retest study of the European Organization for Research and Treatment of Cancer Core Quality-of-Life Questionnaire*. J Clin Oncol, 1995. **13**(5): p. 1249-54.
48. Aaronson, N.K., et al., *The European Organization for Research and Treatment of Cancer QLQ-C30: a quality-of-life instrument for use in international clinical trials in oncology*. J Natl Cancer Inst, 1993. **85**(5): p. 365-76.
49. Fayers PM, A.N., Bjordal K, Groenvold M, Curran D, Bottomley A, on behalf of the EORTC Quality of Life Group., *EORTC QLQ-C30 Scoring Manual, 3rd Edition*. 2001: Brussels.
50. Mair, F. and P. Whitten, *Systematic review of studies of patient satisfaction with telemedicine*. BMJ, 2000. **320**(7248): p. 1517-20.
51. Lee, F., et al., *Implementation of physician order entry: user satisfaction and self-reported usage patterns*. J Am Med Inform Assoc, 1996. **3**(1): p. 42-55.
52. Sittig, D.F., G.J. Kuperman, and J. Fiskio, *Evaluating physician satisfaction regarding user interactions with an electronic medical record system*. Proc AMIA Symp, 1999: p. 400-4.
53. Whitten, P.S. and F. Mair, *Telemedicine and patient satisfaction: current status and future directions*. Telemed J E Health, 2000. **6**(4): p. 417-23.



**Memorial Sloan-Kettering Cancer Center  
IRB Protocol**

**IRB#: 08-155A(8)**

54. Mair, F., et al., *Patients' perceptions of a telemedicine specialty clinic*. J Telemed Telecare, 2000. 6(1): p. 36-40.
55. Institute, P. *The Picker Patient Care Survey (eight dimensions of patient centered care)*. [cited 2003 November 30, 2003]; Available from: [www.pickerinstitute.org/about.htm](http://www.pickerinstitute.org/about.htm).

## **17.0 APPENDICES**

- Appendix 1: Baseline Patient Information Questionnaire
- Appendix 2: Patient Satisfaction Interview Questions
- Appendix 3: CTC-Symptom Items
- Appendix 4: EORTC QLQ-C30
- Appendix 5: Nurse Intervention Report
- Appendix 6: Clinician Exit Meeting Questions
- Appendix 7: System Architecture Diagram
- Appendix 8: Clinician Survey
- Appendix 9: Screening Form
- Appendix 10: Reminder Email