

Statement of Work

Independently and not as an agent of the Government, the Contractor shall furnish all necessary services, qualified personnel, material, equipment and facilities, not otherwise provided by the Government as needed to perform this Statement of Work.

Scope:

The Contractor shall develop the Patient-Reported Outcomes version of symptom elements that are contained within the Common Terminology Criteria for Adverse Events (PRO-CTCAE). This system will collect cancer patient responses to questions about their health status, symptoms, functioning and health-related quality of life and integrate this information within the NCI adverse reporting system. The contractor may be required to work with other contractors designated by NCI who are developing new versions of the CTCAE or other adverse event reporting systems to ensure the systems are interoperable with each other. System development shall be in consultation with NCI program staff and NCI-sponsored clinical trial networks [e.g., Clinical Trials Cooperative Group Program, <http://ctep.cancer.gov/resources/coop2.html> ; Community Clinical Oncology Program (CCOPS), <http://prevention.cancer.gov/programs-resources/programs/ccop>].

Contract Requirements:

For all phases of this contract, the contractor shall:

- a. Work with NCI Program Staff (designated by NCI Project Officer) to discuss plans, progress, findings, and next steps.
- b. Conduct monthly teleconference calls with NCI Program Staff (designated by NCI Project Officer) to review progress, findings, and next steps. The Contractor, in consultation with the Project Officer, will set up the schedule, agenda, and provide summaries of the calls.
- c. Travel to NCI (Rockville, MD) at the beginning, middle, and end of project period to meet with NCI program staff.
- d. Travel once per year to the NCI Symptom Management and Quality of Life (SxQOL) Steering Committee meetings.

PHASE 1 (Year 1):

1. The offeror shall produce a detailed document that identifies barriers, ideal conditions, and solutions to implement the PRO-CTCAE.*

Working with NCI program staff, the Contractor shall review the literature; talk with relevant NCI staff, and interview clinicians and trial sponsors to:

- a. Demonstrate a clear understanding of the clinical utility of CTCAE (<http://ctep.cancer.gov/reporting/ctc.html>) in its current use within NCI-sponsored trials;
- b. Review adverse event reporting systems used by other federal agencies (FDA, NIH, AHRQ) and identify opportunities for integrating with NIH Roadmap initiatives to harmonize the Federal adverse event reporting system;

- c. Identify multiple approaches for integrating the PRO-CTCAE into CTCAE (version 4.0) and future versions of the CTCAE. These approaches should consider how the PRO information is used to grade the symptom whether there is or is not additional clinician judgment. Determine which approach is ideal for multiple types of symptoms;
- d. Create a blueprint for how the open source IT software system of PRO-CTCAE will interact with the Adverse Event Expedited Reporting System (AdEERS), Clinical Data Update System (CDUS) web applications, or other software systems being created for reporting adverse events. This requirement may involve the contractor working with other NCI contractors who are creating AE reporting software systems;
- e. Determine which symptoms of the CTCAE may be enhanced by PRO measures;
- f. Identify barriers for implementing the PRO-CTCAE in NCI sponsored trials;
- g. Determine ideal properties of the PRO-CTCAE including reliability, validity, feasibility and minimal patient and administrative burden;
- h. Identify existing PRO measures that may serve as a source for questions to be used in the PRO-CTCAE;
- i. Determine minimal criteria (age, education, cognitive abilities) to collect patient-reports;
- j. Start developing a detailed study plan, entitled *Detailed Design of Validation/Feasibility Studies Plan*, for the evaluation of the validity and reliability of the PRO-CTCAE and the feasibility of implementing the PRO-CTCAE in NCI-sponsored trials (this Plan will be implemented under phase II of the contract)
- k. Develop a plan for best practices, entitled *Plan for Best Practices for Application of PRO-CTCAE in Community and Comprehensive Cancer Care Setting*, for implementation of PRO-CTCAE in both community and comprehensive cancer care settings
- l. Define system specifications

The contractor shall produce a report, *Ideal Conditions, Potential Barriers, and Strategies to Implement the PRO-CTCAE* that provides a detailed review of the findings and incorporates the Plans from the above with recommendations for moving forward to the design and implementation of the PRO-CTCAE system. This report shall be maintained and updated throughout the contract period of performance as historical documentation for the creation of the PRO-CTCAE. Following Phase I, the *Detailed Design of Validation/Feasibility Studies Plan* will be extracted and expanded upon to prepare for the full validation studies.

2. The offeror shall develop the PRO-CTCAE assessment software system fully integrated with the CTCAE*.

The Contractor shall develop the PRO-CTCAE software system using methods from health survey research, cognitive aspects of survey methodology, qualitative research, psychometrics, and informatics. Development of the instrument will include input from Government, clinicians, trialists, and patients. The PRO-CTCAE is not meant to replace the current comprehensive CTCAE, but rather enhance the CTCAE with the integration of specific patient-reported outcomes.

The resulting PRO-CTCAE shall:

- a. Be comprehensive to capture a range of symptoms and functioning that enhances monitoring of adverse events;
- b. Have minimal burden on the patient in terms of survey length and comprehension;
- c. Have minimal administrative burden for health care providers to collect and to interpret data for reporting adverse events and for informing patient care;
- d. Meet the standards for a psychometrically-robust PRO measure including sensitivity and specificity;
- e. Have minimal bias due to cross-cultural, ethnic, age, or gender differences;
- f. Include both paper and electronic administration of the instrument;
- g. Be fully integrated and complement the revised CTCAE (version 4.0);
- h. Have a user-friendly and easy navigation interface for both patients and clinicians;
- i. Meet the standards of security, confidentiality, compatibility with other NCI adverse event reporting systems, and interoperability within the CaBIG specifications;
- j. Be adaptable for translation into multiple languages to accommodate the diversity of patients that participate in NCI-sponsored clinical trials

The PRO-CTCAE system will both collect patient responses, but also include the ability to electronically integrate the patient response data with the clinician AE data reported in AdEERS or other NCI-supported adverse event reporting system. The data collected by patients should be through electronic assessment (e.g., laptops, computers, or handhelds) but options for paper versions should be provided in case patients lack access to computers. If PRO-data is collected by paper, then there must be plans to enter the data into the electronic AE reporting system.

The process of developing the PRO-CTCAE will likely utilize qualitative and/or quantitative methods to include cancer patient feedback. To meet the criteria for Clinical Exemption of the OMB review process, cancer patients participating in this process should be undergoing treatment or clinical examination for care of their cancer and must be enrolled in a research protocol.

PHASE 2 (Year 2):

3. Conduct studies to evaluate the validity, reliability, feasibility and clinical utility of the new PRO-CTCAE*

The Contractor shall develop protocols and coordinate studies to determine the validity and reliability of the PRO-CTCAE and feasibility of implementing the PRO-CTCAE in NCI-sponsored trials. These usability studies should be designed in a way to address the qualities of an efficient, reliable, and valid system as described in parts (a) to (j) in the above description under Phase 1, Part 2.

The contractor shall conduct these usability studies with access to patients within their institution/organization or a sub-contractors' institution/organization. To meet the criteria for Clinical Exemption of the OMB review process, cancer patients participating in this process should be undergoing treatment or clinical examination for care of their cancer and must be enrolled in a research protocol.

Further, the Contractor shall work with NCI-sponsored Clinical Trials Networks (e.g., NCI Clinical Trials Cooperative Groups Program and the CCOPS) to select clinical trials in which to conduct additional studies to determine the feasibility and validity for implementing this system in multi-center trials.

4. Create Training and Educational Materials to Support the PRO-CTCAE*

The Contractor shall work with the Government to create training and educational materials to enhance the understanding and application of the PRO-CTCAE. This includes development of a User's Guide (both brief and detailed versions) and a website. These materials should document the background, need for the PRO-CTCAE, the development process, results from validity, reliability, and feasibility tests, recommendations for use, and how to score and interpret the PRO-CTCAE. Further, the contractor will develop a training module to be available on DVDs or downloadable through the Internet. The training module will be used by clinicians and patients.

Electronic and Information Technology Accessibility

The Section 508 standards applicable to the resultant contract are:

Software Applications and Operating Systems (1194.21)

Web-based Intranet and Internet Information and Applications (1194.22)

Video and Multimedia Products (1194.24)

Desktop and Portable Computers (1194.26)

*All documents (including source code and documentation), software, training material, and other material developed under this contract are property of the National Cancer Institute, National Institutes of Health.