

# **A Review of Electronic Patient-Reported Outcomes Systems used in Cancer Clinical Care**

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**A. What are the general characteristics of the patient populations that have used this system (including in pilots)?**

1. Age Range:
2. Is computer access and literacy assessed? Y/N
3. Cancer Type(s):
4. Cancer Stages:

Information about the institution using this system:

5. Academic: Y/N
6. Community hospital/clinic: Y/N
7. U.S.: Y/N

**B. System Features:**

8. Primary location system is used (Select: oncology clinic, radiation, surgery):
9. Where is the system accessed? (Select: Clinic, Home/Web, Both )
10. What type of device is used? (Select Handheld, Computer, Kiosk)
11. How is electronic information collected? (Select: Touch Screen, Mouse/Keyboard, Stylus)
12. Is there an IVR/Phone option? Y/N
13. Visual format of PRO questions:
  - a. How many questions per page/screen? (Select: One, Multiple)
14. Number of questions administered per patient? (range)
  - a. Are visual graphics (e.g., body map, faces) used? Y/N
  - b. Is a progress bar included on the screen, indicating percent completion? Y/N
  - c. How do patients advance through questions? (Select: separate mouse click, auto-advance)
  - d. Can questions be skipped?
  - e. Can patients to select N/A (not applicable)? Y/N
  - f. Do items have a pre-selected default response? Y/N (if yes, what response?)
15. Does the system allow multiple sessions (e.g., log-ins) to complete one assessment?
16. What are the system goals?
  - a. To screen or identify HRQOL/PRO issues? Y/N
  - b. To monitor patients over time/treatment? Y/N
  - c. To be used as a decision aid? Y/N
17. Does the system:
  - a. Allow both clinicians and staff to access patient scores? Y/N
  - b. Evaluate quality of care? Y/N
  - c. Measure patient satisfaction? Y/N
18. Security:
  - a. What device-specific security is present?
  - b. What type of internet-based security elements is present? (patient login method, PHI protection method)
19. Infrastructure:
  - a. Is technical support available for this system? Y/N
  - b. Is any training available? Y/N (If yes, for whom?)
  - c. How is data storage handled?
  - d. Is there backup reporting or a data collection plan for missing assessments?

20. Integration with other Electronic Patient Information: (all Y/N)
- a. Is this system integrated with the EHR? Y/N
  - b. Is it integrated with a patient portal? Y/N
  - c. Is it integrated with patient visit appointment/scheduling information? Y/N
  - d. Ability to distribute PRO results to multiple providers? Y/N
  - e. Accessible by clinicians in other cancer-specific settings? Y/N
  - f. Accessible in non-cancer settings? Y/N
  - g. Coding/Billing (any linking)? Y/N
21. How are PRO assessment areas chosen? (Select by patient, provider, and/or computer))

### **C. System Automation**

22. Are there assessment reminders? Y/N
- a. What is the level of automation for these reminders? (fill-in level of staff involvement (e.g., none, phone follow-up, etc.))
  - b. Type of reminders? (Select: e-mail, text message, automated telephone call)
23. Are there System Notifications/Alerts based on PRO data collected? Y/N
- a. Who receives them (Select: Clinicians, Staff, Patients)
  - b. How are they received (Select: e-mail, text message)
  - c. What type of response occurs?
24. Does the system document patient education? Y/N
25. Does this system administer patient education? Y/N (e.g., Links to web-sites, self-management)
- a. Is patient education linked to PRO responses? Y/N
26. Accreditation Reporting: Y/N

### **D. System Development History**

27. Where/how was it developed and when? (Select: in-house, adapted from commercially available system)
- a. Was usability/pilot testing conducted? Y/N

### **E. Information about Current use**

28. Is the system currently in use Y/N (if yes, please provide details)?
- a. Number of users?
  - b. Size of current technical support team?
29. Is IRB approval/Patient Consent required? Y/N

### **F. Detailed information about the PRO instruments/data collected by the system**

30. What instruments/assessments are currently administered (list by name, please include custom instruments)?
- a. Were the instruments modified for use? Y/N (if yes, how)
31. Administration of Instruments
- a. When are they administered? (Select: prior, during, post visits)
  - b. How are they administered? (Select: self-report, interview)
  - c. What is the purpose of the instruments--general or to monitor *specific* treatments? Select (if for treatment select type: Chemotherapy, Radiation)

- d. What is the administration method? (Select Static, Dynamic)
  - e. During what phase of care are these instruments administered? (Select: during active treatment, post-treatment)
  - f. Length of time instruments are administered?
  - g. Frequency of assessments (Select one time, multiple visits, between visits, as necessary)
32. Other patient-reported data currently collected by the system:
- a. Clinical review of systems: Y/N
  - b. Identification of issues patients want to discuss: Y/N (if yes then list)
  - c. Patient self-reported health behaviors (physical activity, diet, smoking, alcohol)? Y/N (if yes then list)
  - d. Patient-reported clinical data (e.g., weight, comorbid conditions, compliance with medications) Y/N (if yes then list)

### **G. PRO Reports**

33. Who receives a report? (Select patient, specific provider, any provider, staff)
34. When is a report generated? (Select at visit, prior to visit, after visit, at home)
35. Content of reports:
- a. Current Scores: Y/N
  - b. Longitudinal change: Y/N
    - i. Is interpretation included in the report? Y/N (If not, is it available separately?)
    - ii. General guidelines: Y/N
    - iii. Identification of Meaningful change: Y/N
    - iv. Cut-scores: Y/N
    - v. General and Population-specific Norms: Y/N
36. What is the visual presentation of the report (Select: numbers, tables, graphs, other)

### **H. Other:**

37. How is this ePRO system funded?
38. What type of training do staff members receive? (Manual, In-person training)
39. What system software is used?
40. How is data storage handled? (MySQL, SQL, Oracle, other)
41. When was this system developed?
42. Which instruments/assessments have been administered in the past?
43. Can specific instruments be manually selected? Y/N
44. Can administration windows be manually selected? (as opposed to the system following a strict schedule) Y/N
45. Can Additional Questions be easily added into the system? Y/N
46. Are reports easily modifiable? Y/N