

Table Reference Number/Authors/ Text Section	Sample	Health Topic Area/Locus of Use/ Technology	Description of the Tool	Overview	Measures	Outcomes
<b>Single Group Designs</b>						
46. Barnes MD, Penrod C, Neiger BB, Merrill RM, Thackeray R, Eggert DL, et al. Measuring the relevance of evaluation criteria among health information seekers on the Internet. <i>Journal of Health Psychology</i> 2003;8:71-82. [Appropriateness]	578 adults who were employees of Idaho National Engineering and Environmental Labs who were enrolled in the Occupational Medicine Health Promotion Program; 57% male, 84% attended at least some college	Health information: lab computer with Internet	Three publicly available Web sites about cold and flu information	Participants first ranked 12 criteria in importance for evaluating health information. Then they used those criteria to evaluate three preselected Web sites that had been chosen on the basis of low, medium, and high quality.	Ranking of the criteria, rating of the Web sites	Participants ranked criteria related to credibility of information and reliability of source as most important with design and aesthetics seen as least important. When rating actual Web sites, six criteria proved to be significant predictors of quality: content, design and aesthetics, currency of information, intended audience, contact addresses, and user support. Those younger than age 50 were better able to select the high-quality site.
47. Beebe TJ, Asche SE, Harrison PA, Quinlan KB. Heightened vulnerability and increased risk-taking among adolescent chat room users: results from a statewide school survey. <i>Journal of Adolescent Health</i> 2004;35:116-23. [Applicability]	40,376 ninth grade students who had Internet at home, of which 19,511 reported accessing chat rooms	Social support: home computer with Internet	World Wide Web	Data from the Minnesota Student Survey were analyzed to determine demographic, psychological, environmental, and behavioral differences between chat room users versus nonusers.	Psychological, environmental, and behavioral factors; Internet activities	Chat room use was consistently, positively, and significantly associated with adverse psychological and environmental facts and engagement in risk behaviors among ninth grade boys and girls. Other Internet activities, such as use of e-mail or games, did not show a consistent pattern of positive associations with these factors. Cannot infer causality: possible that teens who need support are trying to attain it via the chat rooms.

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48. Birru MS, Monaco VM, Lonelyss C, Drew H, Njie V, Bierria T, et al. Internet usage by low-literacy adults seeking health information: an observational analysis. <i>Journal of Medical Internet Research</i> 2004;6:e25. [Appropriateness]	Eight adults with low literacy; mean age 41.5; seven African American, one Asian	Health information: lab computer with Internet	World Wide Web	All participants had a computer skills session. Then participants were asked to use Internet and Google to research information on three health-related questions, using a think-aloud protocol. Then they were asked to navigate a specific Web site.	Search engine usage, ability to answer questions, information accessed, attitudes	Most found generating search terms challenging, difficulty remembering to space between words, some difficulty with spelling; generally retained navigational skills learned in skills session; difficulty generating independent queries and answering specific questions. Participants at times able to locate answers, but could not put into their own words, thus suggesting comprehension difficulties. Average reading level of sites accessed was 10th grade. Seven of eight accessed sponsored sites. All were at least moderately comfortable with their searching experience. Seven of eight felt it was easy to locate trustworthy information. All were enthusiastic about improving skills and using computers.
49. Block G, Miller M, Harnack L, Kayman S, Mandel S, Cristofar S. An interactive CD-ROM for nutrition screening and counseling. <i>American Journal of Public Health</i> 2000;90:781-5. [Acceptability]	281 adults	Nutrition: clinic-based computer with CD-ROM	Interactive program designed to assess fat and fiber intake; compare to recommendations; and provide tailored information to intake, stage of change, and lifestyle habits	Users interacted with the program, then completed questionnaire, followup phone calls made 2 to 4 weeks later.	Satisfaction, new learning, goal setting, and attainment	Large majority found the program easy to use, would recommend it to a friend, thought it could be longer; 78% reported learning something new. 60% had selected a personal goal. Of those who could be reached for followup, 50% tried to reach their goal.

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50. Bowen DJ, Ludwig A, Bush N, Meischke J, Wooldridge JA, Robbins R. Early experience with a Web-based intervention to inform risk of breast cancer. <i>Journal of Health Psychology</i> 2003;8:175-86. [Acceptability]	Study 1: Utilization: 268 women; 88% white, 56% college degree. Study 2: Interviews with nonusers: 83 women	Cancer: home computer with Internet	WIRES: a multicomponent Web site that includes information tailored to personal risk, exercise, eating habits, mammogram history, and age. Components include information, interactive features ("make a commitment" quizzes), contact with study staff, discussion forums.	This study included an analysis of usage by those who actually used the Web site along with identification of predictors of usage, and interviews with nonusers.	Quality of life, healthcare coverage, risk factors for breast cancer, perceived risk, usage patterns	Usage: by week 3, only 21.5% of users had logged into the Web site. After a cue at 3 weeks, usage increased to 37.2%. By 3 months, 47.6% had logged into the Web site. An additional cue at 3 months increased usage by 3.4%. By 6 months, usage was 58.7%. Average length of visit was 30 minutes. Most frequently used pages were home page, personal risk information, exercise and healthy eating pages; then pages on breast cancer, risk factors, and Tamoxifen use. Main reason for not logging in was being too busy. Most difficult part of getting online was finding time. Women with higher incomes and employed full time were less likely to use Web site. Women with higher mental health scores were more likely to use the Web site. Those with lower perceptions of their general current health were less likely to use the Web site. Those with higher perceptions of risk were more likely to use Web site.

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51. Cimino JJ, Li J, Mendonca EA, Sengupta S, Patel VL, Kushniruk AW. An evaluation of patient access to their electronic medical records via the WWW. <i>Proceedings of the American Medical Informatics Association Symposium</i> 2000:151-5. [Acceptability]	Eight adults recruited from private practices of internists at NY Presbyterian Hospital. Only five were actual users; the others did not participate after consent.	Patient-provider interaction: home computer with Internet	PatCIS gives patients access to their electronic medical record, allowing them to add data, review online health information, and apply their own clinical data to guideline programs that offer health advice. System supports security functions and records user activities. User functions: data entry data review, education, advice, comments, and help.	Review of system usage logs—sessions were analyzed by the success of the login, number of functions used during the sessions, duration of the sessions, and whether the user logged out.	User logs	Logged in 243 times, 33 logins failed due to incorrect password or code, 14 sessions had OK login but no other activity. No illegal logins. 196 logins used one or more functions. Log out used 122 times, not 74 times. Most frequently used function: checking lab data 140 times (71%), reports 40 times. Data entry functions: vitals entered 31 times, diabetes information 14 times. Educational functions (links) used 35 times, advice functions 6 times. No adverse reports received from physicians.
52. Colvin J, Chenoweth L, Bold M, Harding C. Caregivers of older adults: advantages and disadvantages of Internet-based social support. <i>Family Relations</i> 2004;53:49-57. [Acceptability]	63 caregivers recruited from 15 Web sites; 89% women, mean age 54.9 years; 59% not employed outside the home; spent 88 hours/week caregiving; 12.6 hours on Internet	Social support for caregivers: home computer with Internet	Web sites offering social networks	Surveyed caregivers of older adults who used Internet support groups.	Advantages and disadvantages of online social support	Advantages cited: anonymity and nonjudgmental atmosphere; asynchrony; able to personalize use of computer-mediated communication (can lurk if desired and delete content); allows expansion of network. Disadvantages: absence of physical presence, social cues; desire for more intimacy; desire to give/receive tangible support; anonymity (not being sure if people are really who they say they are); technical problems; loss of anonymity so they screen what they say; online cliques. Disadvantages cited by small numbers, 24% did not cite any, five left blank.

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53. Czaja SJ, Rubert, MP. Telecommunications technology as an aid to family caregivers of persons with dementia. <i>Psychosomatic Medicine</i> 2002;64:469-76. [Acceptability]	44 caregivers of family members with dementia: 21 Cuban American, 23 white; 34 female; mean age 67.5; 62% with income <30,000; 41% high school or less	Social support for caregivers: home computer-integrated telephone system	CTIS is an information-network that uses computer-telephone technology. It uses screen phones and allows both text and voice messages. Phone system allows users to conference call, join phone support group, leave/send messages to family and care providers; provides caregiver resources, respite functions for patients.	Participants used telephone system for 6 months, then completed survey.	Usability, satisfaction	Generally, participants liked the system and found it easy to use. System use averaged 49 calls/caregiver. Most used function was calling family members. 80% participated in the discussion group. 82% of those liked participating in the discussion groups, and 86% found participation valuable. Several caregivers could participate who could not get to face-to-face support groups.
54. Davis JJ. Disenfranchising the disabled: the inaccessibility of Internet-based health information. <i>Journal of Health Communication</i> 2002;7:355-67. [Access]	NA	Health information: lab computer with Internet	Web sites about health and illness	500 Web sites representing common illnesses/conditions were evaluated for accessibility for visually impaired users who use automated screen readers.	Accessibility	Only 19% of sites were found to be accessible. 64.7% failed because of inability to satisfy a single Priority 1 criteria as specified by the Web Accessibility Initiative of the World Wide Web Consortium. Most failed to provide text descriptions of graphic elements or provided inadequate descriptions.

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55. Epstein YM, Rosenberg HS, Grant TV, Hemenway N. Use of the Internet as the only outlet for talking about infertility. <i>Fertility and Sterility</i> 2002;78:507-14. [Applicability]	589 adults; 99.1% female, >85% at least some college education	Infertility; home computer with Internet	Web site for the International Council on Infertility Information Dissemination	Survey was completed by visitors to the Web site. Researchers then compared two groups: those whose only support was online (OO) and those with additional support (AO).	Diagnostic and treatment information; medication usage; current treatment status; Internet activity; perceived consequences of Internet activity; self-assessment of ways of dealing with infertility; current social and emotional well-being; depression	Greater proportion of OO than AO are not college educated, have no health insurance coverage for infertility, and have a lower household income. OOs spend more hours/day on the Internet for any activity and infertility-related activity; 1/5 of each group are lurkers. Both groups report that their participation has had important cognitive, behavioral, and relationship consequences (switching to a specialist, learning how to deal with doctors, decreasing communication about infertility with partner [OO more than AO]). OOs are more depressed, consider infertility more stressful, report poorer coping strategies for dealing with infertility, worry more, are less satisfied with important relationships, perceive that they receive less support. Lower income predicted greater depression. Time spent on Internet did not predict depression.

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56. Erwin BA, Turk DL, Heimberg RG, Fresco DM, Hantula DA. The Internet. Home to a severe population of individuals with social anxiety disorder? <i>Journal of Anxiety Disorders</i> 2004;18:629-46. [Applicability]	434 participants recruited from Internet sites on social anxiety; 291 women, 140 men, 3 no response; also 229 who sought face-to-face treatment and 36 controls without psychological distress	Anxiety: home computer with Internet	World Wide Web	Surveyed Internet users with social anxiety disorders, those who sought face-to-face treatment, and controls.	Internet use, clinical and impairment variables	Internet survey respondents reported greater severity of and impairment due to social anxiety disorder than treatment-seeking sample. They reported positive (more social support, developing increased confidence) and negative effects of Internet use (fewer face-to-face social bonds, more comfortable interacting on Internet than in person).
57. Escoffery C, McCormick L, Bateman K. Development and process evaluation of a Web-based smoking cessation program for college smokers: innovative tool for education. <i>Patient Education and Counseling</i> 2004;53:217-25. [Acceptability]	35 college students from one campus; 20 women, 15 men	Smoking cessation: home computer with Internet	Kick It!: a four-session program of smoking cessation information, support (ask an expert, message boards, personal stories). Information tailored by stage of change. Each available for 2 weeks.	Users interacted with site, then completed surveys or were interviewed.	Process information, quit rate	14.3% (5) participants quit at end of intervention; at 6-month followup, 25.7% quit. Quit rates of this program were as good as and better than other reports of face-to-face and online interventions. Users rated reading the text, taking quizzes, and using the links as the top activities. Limited use of ask-the-expert and message boards. Participants found the program somewhat useful, interesting, valuable, and personally relevant. Many found it easy to use. Log files and usage self-report showed 82.4% agreement, with some users reporting attending one more session than logs indicated. Interviews also yielded mostly positive feedback.

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58. Eysenbach G, Kohler C. How do consumers search for and appraise health information on the World Wide Web? Qualitative study using focus groups, usability tests, and in-depth interviews. <i>British Medical Journal</i> 2002;324:573-7. [Availability, Appropriateness]	21 adults in focus groups (5 men, 16 women; mean age 37); 17 adults in usability study and interviews (6 men, 11 women; mean age 38)	Health information: lab computer with Internet	World Wide Web	Focus groups, usability study in which participants used the Internet to find answers to specific researcher-generated health questions and individual interviews	Self-report and performance of how they search for health information and determine its credibility	Users reported that Web sites from official authorities, with professional layout, understandable and professional writing, and citation of scientific references, were the most often mentioned criteria. Observation showed all users started with search engine, most used suboptimal search strategy; usually chose one of first displayed results. Users could answer all but 7 of the 136 total questions, but quality of answers was not assessed. Also, users did not attend to the source of the information while searching.
59. Fallows D. Search engine users: Internet searchers are confident, satisfied and trusting—but they are also unaware and naive. Pew Internet & American Life Project, 2005. Available online at <a href="http://www.pewinternet.org/PPF/r/146/report_display">www.pewinternet.org/PPF/r/146/report_display</a> . [Availability]	1,399 adult Internet users	Health information: home computer with Internet	NA	Survey of Internet users	Search engine use and satisfaction	84% of Internet users have used search engines; 92% who use search engines are confident, and 87% report successful search experiences most of the time.



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60. Goldsmith DM, Silverman LB, Safran C. Pediatric Cancer CareLink—supporting home management of childhood leukemia. <i>Proceedings of the American Medical Informatics Association Symposium</i> 2002:290-4. [Availability]	25 parents, all with greater than high school education, 92% had home computers with Internet; 34 clinicians	Cancer: home computer	NA	Formative interviews to determine parents' and clinicians' information needs and interest in computer-based tool	Help needed, satisfaction with providers, current communication	Parents report need for help with medication management, less than satisfied with help from providers, currently communicate with providers via telephone; 38% said they used Internet weekly to find information. Clinicians report decision support, prescription refill support, and education support would be important to include for home management tool and concern about impact on workflow.
61. Han HR, Belcher AE. Computer-mediated support group use among parents of children with cancer—an exploratory study. <i>Computers in Nursing</i> 2001;19:27-33. [Acceptability]	73 parents; mean age 38, 75% women, 89% white, >80% at least some college	Cancer: home computer with Internet	Three online support groups for family members of children with cancer. Groups were part of more than 70 groups hosted by Association of Cancer Online Resources (ACOR)	Parents were recruited from online support groups and surveyed about their support group use.	Use of computer for support	Advantages cited by parents: getting information, sharing experiences, general support, venting of feelings, accessibility, and use of text. Disadvantages: noise, negative emotions, large volume of mail, lack of physical contact.

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62. Hassol A, Walker JM, Kidder D, Rokita K, Young D, Pierdon S, et al. Patient experiences and attitudes about access to a patient electronic healthcare record and linked Web messaging. <i>Journal of the American Medical Informatics Association</i> 2004;11:505-13. [Acceptability]	1,421 adults recruited from a medical practice, needed own computer; 60% female, 78% between the ages of 31-64, more than 25% had 4-year degree, almost all were non-Hispanic whites	Patient-provider interaction/electronic medical record; home computer with Internet	MyChart is a new feature in the electronic health record (EHR) in use throughout the Geisinger Health system. This allows patients to view selected portions of their EHR and exchange electronic messages with their doctor's practice. Application is Web-based, password protected, encrypted. Patients can view 25 lab tests; review allergies, medications, and problem lists; view past and future office visits; review health history; send messages and queries to providers; and request an appointment, prescription renewals, and referrals.	Survey of MyChart users with focus groups conducted to supplement survey findings, interviews with physicians	Ease of use, completeness and accuracy of information	Users had little difficulty using the system even among adults whose education was high school or less. Patients very satisfied with system. 65% rated their information as complete, and 75% rated medical history as accurate. Most patients were not concerned about security/privacy of their medical information or about learning of test results before discussing them with their providers. Patients least preferred written or telephone communication and had higher preference for in-person and online communication (especially for prescription renewals, general medical questions). MDs preferred in-person and telephone communication.

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63. Kaufman DR, Starren J, Patel VL, Morin PC, Hilliman C, Pevzner J, et al. A cognitive framework for understanding barriers to the productive use of a diabetes home telemedicine system. <i>Proceedings of the American Medical Informatics Association Symposium</i> 2003:356-60. [Overview, Access, Acceptability]	25 elderly diabetic Medicare patients living in rural Upstate New York (mean age=73, mean educational level 12.1 years, 45% had internet experience, 100% English speaking) and New York City (mean age=69.6, mean educational level 8.6 years, 36% had internet experience, 86% Spanish speaking)	Diabetes: home telemedicine system	IdeaTel: a home telemedicine-synchronous video-conferencing, electronic transmission of fingerstick glucose and blood pressure readings, e-mail to a physician and nurse case manager, review of clinical data, access to Web-based educational materials in English and Spanish	Usability testing included a cognitive walkthrough analysis to characterize task complexity and identify potential problems. Also included a field usability testing in patients' homes during which patients interacted with the equipment and performed specified functions.	Cognitive walkthrough, observation	Cognitive walkthrough highlighted areas of complexity. Usability testing showed difficulty using the mouse; all of the novice users had difficulty developing a mental model of the system, thereby making navigation difficult; impact of health literacy (e.g., users had difficulty reading/interpreting tables, understanding charts, recognizing abnormal values).

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64. Kusec S, Brborovic O, Schillinger D. Diabetes Websites accredited by the Health on the Net Foundation Code of Conduct: readable or not? <i>Studies in Health Technology and Informatics</i> 2003;95:655-60. [Appropriateness]	NA	Diabetes: lab computer with Internet	Diabetes Web sites	Using the HONcodeHUNT search engine, 99 Web sites on diabetes were identified for evaluation. 100-200 words of text were then copied and pasted into Microsoft Word, where the Flesch Reading Ease (FRE) and Flesch-Kincaid evaluations were used to determine readability.	Readability	Mean FRE score of 41.7 corresponding to "difficult" reading ease. Mean Flesch-Kincaid score of 10.8th grade level. Reading level of average U.S. adult is 8th grade. 86.9% of reviewed Web sites would be too difficult for the average adult.
65. Lenert L, Cher D. Use of meta-analytic results to facilitate shared decision-making. <i>Journal of the American Medical Association</i> 1999;6:412-19. [Overview, Acceptability]	191 patients with benign prostatic hypertrophy (BPH) recruited over Internet; 81% had at least some college, 71% had e-mail addresses	Benign prostatic hypertrophy: home or clinic computer with Internet	Internet site that measures current symptoms and desired level of symptom reduction, describes alternative treatments for BPH and potential effects of alpha blocker terazosin, computes and displays the probability of user achieving objective of symptom reduction by using terazosin or placebo	Users interact with site, then complete online questionnaire.	Perceived usefulness of information	93% found the information useful; 71% believed this type of information should be discussed before prescribing medications.

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66. Lieberman MA, Golant M, Giese-Davis J, Winzlenberg A, Benjamin H, Humphreys K, et al. Electronic support groups for breast carcinoma: a clinical trial of effectiveness. <i>Cancer</i> 2003;97:920-5. [Acceptability]	32 women with breast carcinoma (CA), recruited from Web sites related to breast CA and physicians' offices, hospitals, community centers. 82% between 40-60, 67% married, 70% had at least some college	Cancer: home computer with Internet	Closed electronic support group. Users also had access to private news group in which they could post pictures, share their cancer stories, and chat.	Four groups of eight participants, met for 1.5 hours/week for 16 sessions. Groups were therapist-led, but group determined discussion.	Depression, pain, posttraumatic growth	Technical problems: provider "timed them out" during a session. Significant reductions in depression, reactions to pain. Positive trend posttraumatic growth, expressing somewhat more zest for life. 67% found group beneficial. Those who withdrew from study had lower scores in ability to contain anxiety, more likely to suppress their thoughts and feelings regarding their illness.

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67. Liederman EM, Morefield CS. Web-messaging: a new tool for patient-physician communication. <i>Journal of the American Medical Informatics Association</i> 2003;10:260- 70. [Acceptability]	238 patients from University of California Davis Primary Care Network. Also eight clinicians, nine medical assistants, four office staff	Patient- provider interaction: home computer with Internet	RelayHealth system provides Web-based communication services that are secure and clinically structured. Offers messaging, non-urgent asynchronous consults, appointments, medication refills, and preventive care reminders. Can be used by doctor, authorized staff, and patients with login and password.	Survey of RelayHealth system participants on use of Web-messaging system	Usability, satisfaction	Only 3% had never used system, 49.6% once or twice, 26% three to four times, 21% five or more times. 66.4% found system very easy, 22.4% easy, 3% found it somewhat difficult, and one respondent found it very difficult. 61.2% were satisfied, 24.6 satisfied, 6% somewhat or very dissatisfied (related to lack of or slow response from clinic). All who received a timely response were very satisfied. 78% rated Web messaging better or much better than calling their doctor, 78% said access to provider was better/much better with electronic communication. Three reasons patients used phone included (1) when electronic method was not yet in place; (2) they wanted quicker answers; or (3) it was easier to explain the problem over the phone. Patients' suggestions for improvement include quicker response times and adding additional features to the site such as lab results and medical records access.

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68. Masys D, Baker D, Butros A, Cowles KE. Giving patients access to their medical records via the Internet: the PCASSO experience. <i>Journal of the American Medical Informatics Association</i> 2002;9:181-91. [Acceptability, Applicability]	41 patients enrolled (needed to have own computer and Internet). Typical patient enrollee was female (73%), well educated (71% with college degree), excellent computer skills (49%), and excellent Internet knowledge; 68 physicians	Electronic medical record: home computer with Internet	Patient-Centered Access to Secure Systems Online (PCASSO): a secure system allowing patients to view their medical records online. Requires a multistep procedure for secure login.	Monitored usage data and also surveyed users.	Usability, satisfaction	No penetration of system by intruders during 12-month period. 88% of those patients providing feedback reported the multistep secure login to be reasonable or very reasonable. 60% of doctors found it reasonable, but 40% found it unreasonable or intolerable. Majority of both groups rated having electronic access to medical records very highly. Both groups were satisfied with the security safeguards. Large majority of both groups felt there was very high value in having access to records via the Internet.

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69. Preese J, Nennecke B, Andrews, D. The top five reasons for lurking: improving community experiences for everyone. <i>Computers and Human Behavior</i> 2004;20:201-23. [Acceptability]	1,188 survey responders, of whom 219 were lurkers; 79% had at least some college, 56.3% women	Social support: home computer with Internet	MSN bulletin board communities	Survey posted to a random sample of MSN bulletin board communities. Total of 375 communities selected. Lurkers' responses were compared to posters' responses.	Attitudes toward posting	No difference between lurkers and posters based on demographics. Found that both groups go online looking for information. Lurkers less enthusiastic about community membership, posters have a greater sense of belonging and satisfaction with the community. Lurkers state they do not post because just reading is enough, still learning about the group/shy, being helpful by not posting if nothing new to offer, nothing to offer, no requirement to post, want to remain anonymous, could not make the software work to be able to post.



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70. Radvan D, Wiggers J, Hazell T. HEALTH C.H.I.P.S.: opportunistic community use of computerized health information programs. <i>Health Education Research</i> 2004;19:581-90. [Overview, Access]	Study 1: 386 people age 18-83, mean age 42.9; 70.2% female. Study 2: 55.3% male, age range of users from <12 to >60 with the greatest proportion (31.4%) of users children under age 12	Health information: community-based touch screen computer in free-standing kiosks	HEALTH CHIPPS (Computerized Health Information Programs): health education modules (smoking, blood pressure, cervical cancer) available on a touch-screen computer kiosk. Modules include information, personal risk assessment with tailored feedback, and quizzes. Modules also include text, photos, diagrams, animations, sound, and video.	1. Intercept: a kiosk loaded with three modules (blood pressure, cervical cancer, and smoking) was in a shopping center for 7 months. Then, trained interviewers approached subjects every 15 minutes for intercept-interviews. Utilization study: kiosks established at 17 venues over 12 months with 17 modules on many health topics. Program database collected usage data.	1. Intercept: exposure, attention, and use; usefulness and information; barriers to use 2. Utilization	1. Intercept: a total of 99.7% of participants were in the vicinity of the kiosk (exposure); 77.4% of these noticed it, and 20.8% of these used it. Program acceptability was high. Most common barriers to use were time constraints, disinterest, kiosk already in use, not comfortable using kiosk in public. 2. Utilization: there were 57,064 uses in 2,943 days (19.4 uses per kiosk per day). Most used the following topics: sexual health, smoking, and drunk driving. Most often submodules used were quizzes and self-assessments. Also had a comparison of use across different community settings.
71. Reeves, PM. Coping in cyberspace: the impact of internet use on the ability of HIV-positive individuals to deal with their illness. <i>Journal of Health Communication</i> 2000;5(Suppl):47-59. [Acceptability]	10 adults with HIV; 60% male, 80% Caucasian, all at least with some college	HIV: home computer with Internet	NA	Semi-structured interviews about Internet use and coping	History of Internet use, how they use the Internet, and coping strategies	Internet use promotes empowerment, augments social support, and facilitates helping others.
72. Rozmovits L, Ziebland S. What do patients with prostate or breast cancer want from an Internet site? A qualitative study of information needs. <i>Patient Education and Counseling</i> 2004;53:57-64. [Availability, Appropriateness]	28 adults with breast or prostate cancer for focus groups; 8 adults with breast or prostate cancer for individual interviews	Cancer: home computer with Internet	DIPEX Web site: presents video, audio, and written clips from interview studies with people about their experiences of health and illness. Modules available for breast and prostate cancer; hypertension; and cancer of the testis, cervix, and bowel.	Interviews and focus groups with members of the target audience	Information needs, sources of information, review of Web site content	Cancer patients have information needs that change over time, and some information needs are unmet. Sample seems aware of issues with getting information from the Internet. Interviewees liked DIPEX site, but site could be improved to provide other needed information, such as financial help and benefits, practical advice, non-Internet resources.

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73. Ryan R, Kobb R, Hilsen P. Making the right connection: matching patients to technology. <i>Telemedicine Journal and e-Health</i> 2003;9:81-8. [Overview, Access, Acceptability]	911 veterans with chronic medical or mental health problems	Patient- provider interaction: home with traditional telehealth technology; Web-based messaging devices; disease management tool; cameras, PC with Internet for supervised chat rooms	See technology column.	Developed an algorithm to match patients to technology based on education, vision, manual dexterity, willingness to use technology, and compliance to medical regimen.	Satisfaction, ease of use, self-reported functional status (physical function, bodily pain, general health, vitality, mental health, and role function)	94% satisfied with their primary technology device at 12 months; 93% found the technology easy to understand, 95% easy to use, 87% device generally reliable; 90% felt the Community Care Coordination Service program helped educate them about their chronic disease, 88% helped them manage their health better; 82% improved communication with providers, 95% would recommend participation to other veterans. Initial medication compliance at 63%, increased to over 93% during the study. Self- reported functional status either improved or remained unchanged for all but one parameter (physical function).

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74. Shaw BR, McTavish F, Hawkins R, Gustafson DH, Pingree S. Experiences of women with breast cancer: exchanging social support over the CHES computer network. <i>Journal of Health Communication</i> 2000;5:135-59. [Acceptability]	12 women participating in the Comprehensive Health Enhancement Support System (CHES). Mean age 51, all at least high school educated, one-half college educated	Cancer: home computer connected to central server	CHES: contains 11 tools that provide information, decisionmaking, and support services.	Women with breast cancer who used CHES were interviewed to examine the experience of giving and receiving support in a computer-mediated environment.	How they used CHES, how do CHES support groups compare with other support groups, how could CHES work better	Some findings include: equalized participation important; no social cues to bias. Could not see others' reactions, so not discouraged from venting painful feelings. Online support can compensate when participants do not feel good about appearance, do not feel well enough to go out. Asynchronous nature had pros and cons (could use any time, might not get response in timely manner). Other advantages: do not have to travel, good for those who are geographically isolated. In CHES, groups are size-limited, so people can create more intimate ties. Even with size limitations, still get an abundance of messages; membership requires a serious time commitment. Motivations: CHES groups provide support especially when family members do not understand the stresses of living with breast cancer, may change over time—start out needing support/information then become a provider of support/information. Benefits: realizing that others have similar problems—helps to feel less isolated; reducing uncertainty; knowing what to expect from noxious treatments, altruism, and showing caring to others in group help take focus from preoccupation with self to others; social comparison ("maybe what you have isn't so bad compared to someone else").

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75. Shaw LH, Gant LM. In defense of the Internet: the relationship between Internet communication and depression, loneliness, self-esteem, and perceived social support. <i>Cyberpsychology and Behavior</i> 2002;5:157-71. [Acceptability]	40 undergraduate students	Social support: home computer with Internet	Web site with chat rooms, requiring login name and password to enter	Participants engaged in five structured chats with an anonymous partner from the study.	Depression, loneliness, social support, self-esteem	Scores on depression and loneliness scales decreased, and scores on social support and self-esteem scales increased, indicating positive effects over time.
76. Tang PC, Black W, Buchanan J, Young CY, Hooper D, Lane SR. PAMFOnline: integrating ehealth with an electronic medical record system. <i>Proceedings of the American Medical Informatics Association Symposium</i> 2003;649-53. [Acceptability, Applicability]	914 adults recruited from the Palo Alto Medical Foundation; gender equally split; mean age 52	Patient-provider interaction/electronic medical record: home computer with Internet	PAMFOnline provides access to summary data from medical records: users can view test results, make appointments, refill prescriptions, update demographics, view doctor-approved health information, get advice from doctors and nurses. All services were available free, except messaging service, which required a nominal subscription fee.	Surveyed users of PAMFOnline, conducted focus groups to determine who would be the most likely users.	Satisfaction	Survey findings: 73% satisfied with existing functionality. Majority of users ranked viewing lab test results as most important benefit. Online messaging with clinicians also rated highly, even though this was available only with an extra charge. Patients wanted more of the medical record available to them, especially old lab results.

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77. Weis R, Stamm K, Smith C, Nilan M, Clark F, Weis J, et al. Communities of care and caring: the case of MSWatch.com. <i>Journal of Health Psychology</i> 2003;8:135-48. [Acceptability]	943 adults; 76% female, mean age 43.7	Multiple sclerosis (MS): home computer with Internet	MSWatch.com: a Web site designed for patients with MS. Site provides information (community news, humor, ask-an-expert, personal stories, tips, library, newsletter, diary, and MS news) and support (chat rooms, discussion groups, instant messaging, e-mail, and postcards).	Users of MSWatch were surveyed.	Perceived usefulness of information and support functions	Information functions showed greater perceived usefulness than support features. Only between 10% and 30% of users found the support features useful. Usefulness of the Web site was greater for those in the early stages of the disease and then again in the third year of the disease. Use of support features did not relate to disease progression. Those using the Web site to answer general questions rated the information as useful, while those who were referred to the site by other MS patients found the support features useful. Women rated the information function of greater importance than males. Adults with children rated both support and information functions higher than those without children. Younger people rated the support functions more highly than older people did. The highest rating of the site overall came from those who found it useful for information and support.

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78. Wilkie D, Huang H, Berry D, Schwartz A, Lin Y, Ko N, et al. Cancer symptom control: feasibility of a tailored, interactive computerized program for patients. <i>Family and Community Health</i> 2001;24:48-62. [Acceptability]	41 outpatients with cancer; age 18 or older; all participants were white except for one Asian; 26% had never used computer	Pain management: clinic-based computer program with touch screen	SymptomReport is a software program that asks questions about pain and fatigue. SymptomConsult provides tailored management strategies.	Two groups of patients: all used SymptomReport, then randomly interacted with SymptomConsult or computer games; 4 weeks later completed SymptomReport again.	Completion time, acceptability	Mean completion time for SymptomReport was less than 40 minutes, for SymptomConsult 20 minutes. High acceptability scores for SymptomReport; some felt SymptomConsult was not targeted to their needs or provided no new information. Some reported they had increased understanding, awareness, and medical compliance.
79. Wilkie D, Judge M, Berry D, Dell J, Zong S, Gillespie R. Usability of a computerized PAINReportit in the general public with pain and people with cancer pain. <i>Journal of Pain and Symptom Management</i> 2003;25:213-24. [Acceptability]	213 patients with pain. Outpatients: N=10, all white, 40% male and 60% female; Inpatients N=106, 46% male and 64% female, 86% white and 14% people of color; general public N=97, 58% male and 42% female, 73% white and 27% people of color	Pain management: clinic-based computer program with touch screen	PAINReportit is a computerized version of the McGill Pain Questionnaire.	Three different groups of participants interacted with PAINReportit.	Completion time, completeness of pain data, acceptability	Mean completion time 15.8 minutes. All gave responses to at least 3/4 domains (location, intensity, quality, pattern). High acceptability overall, with highest acceptability among participants of color.

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80. Woodruff SI, Edward CC, Conway TL, Elliott SP. Pilot test of an Internet virtual world chat room for rural teen smokers. <i>Journal of Adolescent Health</i> 2001;29:239-43. [Acceptability]	18 high-risk youth recruited from 6 small alternative schools; mean age 15, 66% male; 55% Caucasian, 28% Hispanic, 17% other	Smoking cessation: school computer with Internet	Breathing Room: Internet-based virtual "world" in which young smokers interact with a trained cessation facilitator and with each other; primarily offered chat; also created billboards to address teens' reasons to quit smoking and coping strategies. Also had access to links, shopping, and other features.	Participants interacted with facilitator and other teens in chat room for seven 1-hour sessions.	Acceptability, attitudes about quitting, quitting intentions	Participated in an average of 5.3 out of 7 sessions, 95% would recommend this to another teen smoker. Positive but not significant changes in "abstinence in the past week" from pretest to posttest. 39% called themselves former smokers at posttest, maintained at 1-month followup. Reduction in number of cigarettes smoked, intention to quit greater, attitudes toward quitting more positive.
81. Zarcadoolas C, Blanco M, Boyer JF. Unweaving the Web: an exploratory study of low-literate adults' navigation skills on the World Wide Web. <i>Journal of Health Communication</i> 2002;7:309-24. [Availability]	24 adults with low-literacy, low incomes; 17 Hispanic, 3 African American, 2 Asian, 2 white; recruited from literacy or computer classes at community-based organizations; 10 reported owning computers, 15 had used the Internet before.	Health information: lab computer with Internet	Specific Web sites on the World Wide Web	Participants were asked to assess the content and information available on specific Web sites as well as perform specific tasks. Methods used included observation, contextual inquiry, and a think-aloud protocol.	Satisfaction, navigation	23/24 excited to use Internet. 23/24 thought they would use Internet more in next few years. Navigation difficulties: scrolling, using back arrow, typing/spelling to enter Web address, using graphic links. 11/24 thought people should not trust everything on Web, 9/24 thought they should trust everything, 4/24 not sure. None could identify how to determine what to trust.

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82. Zimmerman DE, Akerelrea CA, Buller DB, Hau B, Leblanc M. Integrating usability testing into the development of a 5 a day nutrition Website for at-risk populations in the American Southwest. <i>Journal of Health Psychology</i> 2003;8:119-34. [Appropriateness]	Study 1: 43 adults; mean age 42.8, 32% income <\$15,000, 61% Hispanic/Latino, 15% Native American, 24% Caucasian; 91% had computer experience. Study 2: 35 participants; mean age 43.7, 74% women, 25% income <\$15,000, 47% Hispanic/Latino, 26% Native American, 27% other (8 white, 1 Asian); 66% with more than 1 year computer experience, 34% with less than 1 year experience. Study 3: 31 adults; mean age 43, 60% female; 35% income <\$15,000, 42% Hispanic/Latino, 35% Native Americans, 23% Caucasians	Nutrition: lab computer with Internet	"5 a Day, the Rio Grande Way": a nutrition education Web site for multicultural adults living in southern Colorado and northern New Mexico	Study 1: card-sorting task used to identify how target population categorized nutrition concepts. Study 2: talk aloud protocol and observation as users interacted with a prototype Web site. Study 3: same protocol as study 2, but with a larger and near-final version of the Web site	Categorization of nutritional concepts; satisfaction and ease of use	Card-sort task results were used to create the site map for the Web site. Study 2 found that most users (86%) were satisfied with the Web site, 85% found it easy to use. Observation showed some areas of difficulty including: assumption of user content knowledge that was lacking, text type too small, unclear titles, participants reluctant to use page links, some difficulty initially locating information, need for additional visuals. Study 3 found that 83% found site interesting, 74% useful, 55% easy to read. Observation showed problems with navigation and locating information. Of the study participants, about 33% had never used computers, and they had difficulty with the hand-eye coordination required for navigating the site, recognizing navigational aids, and understanding the Web site organization and structure. Mouse skills were difficult for users with physical impairments. Only 23% completed all 12 tasks in the protocol. This version was less well-received than previous prototype. Those with more computer experience reported that the site was easier to use.



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83. Cheh, JA, Ribisi KM, Wildemuth, BM. An assessment of the quality and usability of smoking cessation information on the Internet. <i>Health Promotion Practice</i> 2003;4(3):278-87. [Appropriateness]	NA	Smoking cessation: lab computer with Internet	Smoking cessation Web sites	Reviewed 30 Web sites identified from online and print resources	Informational content, accessibility and usability, source credibility, currency of information	Majority of sites contained information content congruent with published smoking cessation guidelines. 93.3% of sites written above a fifth-grade Flesch-Kincaid reading level; 9 sites contained >50 pages of content; 16 had site map or search mechanism; 63.3% were created by organizations with authors having health credentials; 3 sites supported claims with reference to scientific research; 5 sites displayed when their content was last updated.

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84. Evers KE, Prochaska JM, Prochaska JO, Driskell M, Cummin CO, Velicer WF. Strengths and weaknesses of health behavior change programs on the Internet. <i>Journal of Health Psychology</i> 2003;8:63-70. [Appropriateness]	NA	Health information: lab computer with Internet	37 public Web sites on health behavior change for disease prevention and management	273 Web sites addressing 7 targeted problem areas (tobacco use, physical activity, alcohol, diet, diabetes, depression, and pediatric asthma) were identified and screened according to quality criteria that would determine whether the sites had the minimum criteria for having the potential to change behavior. 15% (42) of the programs met 4 of 5 of the criteria, and these sites underwent a full review.	The five "A's" for effective health behavior change treatment on the Internet (advise, assess, assist, anticipatory guidance, and arrange followup), use of behavior change theory, single vs. multiple behaviors, interactivity, security, privacy and confidentiality, accountability, evaluation	Found that the types of assessments varied across types of programs; 81% of programs gave a rationale for the assessment; 84% of the programs provided feedback that followed appropriately from the assessment, although only five used individualized, tailored feedback; 73% offered some form of anticipatory guidance to prevent relapse; 11% specified when a user should come back, and 22% used e-mail reminders to keep in contact; 29% explicitly stated use of a theoretical model; 78% were part of a site addressing multiple risk behaviors. Interactive features included assessments (100%), chat room (49%), bulletin boards or discussion lists (73%), ask-the-expert (49%), behavior tracking tool (49%), e-mail reminders or newsletters (70%). 76% required registration with a password to access all of site. 92% posted a privacy policy statement. 100% had some form of contact, either e-mail or phone. None of the sites included information about evaluation for effectiveness.

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85. Fahey D, Weinberg J. LASIK complications and the Internet: is the public being misled? <i>Journal of Medical Internet Research</i> 2003;5:e2. [Appropriateness]	NA	LASIK surgery: lab computer with Internet	Web sites about LASIK surgery	Content analysis of 21 Web sites related to LASIK surgery	Authorship (recognized authority, credentials, contact information), content (details of complications, easy to understand, ease of locating complications, accuracy of references, currency, balanced information), and technical quality (quality of page layout, ease of identifying site's header and footer).	17/21 sites were commercial; 5/21 (24%) had no information on complications. Of the 16 sites that had information on complications: the author of the information was clearly identified in 5 (31%), the content was referenced in 2 (12.5%), and evidence of the information having been updated was seen in 2 (12.5%).
86. Finn J. An exploration of helping processes in an online self-help group focusing on issues of disability. <i>Health and Social Work</i> 1999;24:220-31. [Acceptability]	NA	Social support: lab computer with Internet	An online group whose purpose was to allow discussion and support between individuals coping with physical or mental limitations	Analyzed 3 months of messages from an online support group	Types of posts	Messages focused on health and disability-related information (38.2% of posts), emotional and interpersonal issues related to disability (28.4%), empowerment of members through legal and political means (11.2%), plus more than 1/10 messages devoted to social interchange unrelated to issues of health or disability.

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87. Madan AK, Frantzides CT, Pesce CE. The quality of information about laparoscopic bariatric surgery on the Internet. <i>Surgical Endoscopy</i> 2003;17:685-7. [Appropriateness]	NA	Bariatric surgery: lab computer with Internet	Web sites about laparoscopic bariatric surgery	Evaluation of 119 Internet sites found via 6 search engines and 2 metasearch engines. The first 20 "hits" for each separate search engine were included in the study.	Educational information on laparoscopic obesity surgery, discussion of procedure related to the surgery, procedure details, discussion of other procedures, discussion of risks, including death, and discussion of this surgery as an option for obesity surgery. Sites were also evaluated for inclusion of misleading or biased information.	A total of 602 hits found with search engines. Of these, only 119 unique sites. Of these, 63/119 had educational information about bariatric surgery, 56 discussed laparoscopic surgery as an option, 33 gave details of the procedure, 30 discussed accurate weight loss results, 26 discussed death as a complication, 18 contained biased or misleading information. Only 89 of the original 602 hits led to sites that discussed this type of surgery, procedure details, and complications in an unbiased manner.

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88. McTavish FM, Pingree S, Hawkins R, Gustafson D. Cultural differences in use of an electronic discussion group. <i>Journal of Health Psychology</i> 2003;8:105-17. [Overview, Applicability]	113 women who received the Comprehensive Health Enhancement Support System (CHES) and who had participated in the discussion group: 86 white, 23 African American, 2 Native American, 2 Asian	Cancer: lab computer with Internet	CHES breast cancer module: study focused on use of the Women's Only Discussion Group, which only allowed access to women with breast cancer.	Messages from the discussion group were randomly selected for analysis.	Use of discussion group, message content	Women of color used the discussion group significantly less than Caucasian women. Most of their use was in the first 3 months, while the Caucasian women's use of the discussion group declined much more gradually. Women of color wrote a greater proportion of messages specific to breast cancer and its treatment, and fewer dealing with daily life than Caucasian women. The groups did not differ in self-disclosure, but Caucasian women were more likely to offer support to other women. Message focus changed over time. Caucasian women wrote more about daily life than breast cancer as time went on. Women of color initially wrote more about breast cancer, and then overall usage dropped off significantly.
89. Mendelson C. Gentle hugs: Internet listservs as sources of support for women with lupus. <i>Advances in Nursing Science</i> 2003;26:299-306. [Acceptability]	NA	Lupus: lab computer with Internet	Three online listservs for women with lupus	Three online listservs for women with lupus were identified. Content analysis of posting was completed.	Types of posts	Themes emerged: exchanging information and advice, living with illness, life goes on/friendly banter; life in cyberspace (introduction of self to list/welcome from member), support.

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90. Oermann M, Lowery N, Thornley J. Evaluation of Web sites on management of pain in children. <i>Pain Management Nursing</i> 2003;4:99-105. [Appropriateness]	NA	Pain management: lab computer with Internet	Web sites about pain management	40 Web sites identified from Google and MSN were rated for quality using the Health Information Technology Institute (HITI) criteria (credibility, content, disclosure, links, design, interactivity, and caveats).	Quality, readability	9/40 sites met all of the HITI criteria and were at an appropriate reading level for most users. The mean reading grade level of all sites was 10.8—too high for many consumers.
91. Seidman J, Steinwachs D, Rubin H. Design and testing of a tool for evaluating the quality of diabetes consumer-information Web sites. <i>Journal of Medical Internet Research</i> 2003;5:e30. [Appropriateness]	NA	Diabetes: lab computer with Internet	Web sites about diabetes	Researchers developed a tool, based on the American Diabetes Association's Clinical Practice Recommendations, that would allow evaluation of the quality of diabetes-related Web sites. Then they assessed 90 diabetes-related Web sites using the tool.	Quality	Found wide variation in the quality of consumer diabetes information on the Internet. Average score of 50% suggests substantial level of inaccurate and missing information.