Chapter 59. Listing of All Practices, Categorical Ratings, and Comments

Ch. #	Patient Safety Target	Patient Safety Practice	Impact	Study Strength	Effect Size	Vigilance	Cost	Complexity
6	Medication errors and adverse drug events (ADEs) primarily related to ordering process	Computerized physician order entry (CPOE) with clinical decision support system (CDSS)	High	Medium ¹	Modest	Medium	High ²	High
7	Medication errors and ADEs related to ordering and monitoring	Clinical pharmacist consultation services	High	Medium	Modest ³	Low	High	Low
8	ADEs related to targeted classes (analgesics, KCl, antibiotics, heparin) (focus on detection)	Use of computer monitoring for potential ADEs	Medium	Medium	Robust ⁴	Low	Medium ⁵	Low
9	Adverse events related to anticoagulation	Protocols for high risk drugs: nomograms for heparin	Medium	Medium ⁶	Robust ⁷	Medium	Low	Low
9	Adverse events related to anticoagulation	Anticoagulation services and clinics for coumadin ⁸	High	Medium	Unclear	Low	Medium	Low
9	Adverse events related to chronic anticoagulation with warfarin	Patient self- management using home monitoring devices	High	High	Robust	Medium	Medium ⁹	High ¹⁰
10	ADEs in dispensing medications	Unit-dosing distribution system	Medium	Medium	Unclear	Low	Low	Low
11	ADEs in drug dispensing and/or administration	Use of automated medication dispensing devices	High	Medium 12	Unclear	Medium	Medium 13	Low
12	Hospital-acquired infections	Improved handwashing compliance (via education/behavior change; sink technology and placement;	High	Medium 14	Unclear ¹⁵	Low	Low	Low ¹⁶

Ch. #	Patient Safety Target	Patient Safety Practice	Impact	Study Strength	Effect Size	Vigilance	Cost	Complexity
		washing substance)						
13	Serious nosocomial infections (eg, vancomycin- resistant enterococcus, <i>C.</i> <i>difficile</i>)	Barrier precautions (via gowns & gloves; dedicated equipment; dedicated personnel)	High	Medium 17	Robust	Medium 18	Medium	Low ¹⁹
14	Hospital-acquired infections due to antibiotic-resistant organisms	Limitations placed on antibiotic use	High ²⁰	Medium	Modest	Medium 21	Low	Low
15.1	Hospital-acquired urinary tract infection	Use of silver alloy- coated catheters	High	High	Unclear ²²	Low	Low	Low
15.2	Hospital-acquired urinary tract infection	Use of suprapubic catheters	High	High	Unclear 23	Medium	High	High
16.1	Central venous catheter-related blood infections	Use of maximum sterile barriers during catheter insertion	Medium	High	Robust	Low	Low	Low ²⁴
16.2	Central venous catheter-related blood infections	Antibiotic- impregnated catheters	Medium	High	Robust	Low ²⁵	Low	Low
16.3	Central venous catheter-related blood infections	Cleaning site (povidone-iodine to chlorhexidine)	Medium	High	Unclear	Low	Low	Low
16.4	Central venous catheter-related blood infections	Changing catheters routinely	Medium	High	Negligible ±	NA	High	High
16.4	Central venous catheter-related blood infections	Use of heparin	Medium	High	Unclear	Medium	Low	Low
16.4	Central venous catheter-related blood infections	Tunneling short- term central venous catheters	Medium	High	Unclear	Low	Low	High

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 $[\]pm$ Actually, studies show a detrimental effect of practice.

Ch. #	Patient Safety Target	Patient Safety Practice	Impact	Study Strength	Effect Size	Vigilance	Cost	Complexity
16.4	Central venous catheter-related blood infections	Routine antibiotic prophylaxis	Medium	Medium	Negligible	Medium	Medium	Low
17.1	Ventilator- associated pneumonia	Semi-recumbent positioning	High	Medium	Robust ²⁶	Low	Low	Low
17.1	Ventilator- associated pneumonia	Continuous oscillation	High	High	Robust ²⁷	Medium	Medium	Low
17.2	Ventilator- associated pneumonia	Continuous aspiration of subglottic secretions (CASS)	High	High	Robust ²⁸	Low	Low	High ²⁹
17.3	Ventilator- associated pneumonia	Selective decontamination of digestive tract	High	High	Robust ³⁰	Medium 31	Low	Low
17.4	Ventilator- associated pneumonia	Sucralfate	High	High	Unclear	High ³²	Low	Low
18	Mortality associated with surgical procedures	Localizing specific surgeries and procedures to high volume centers	High	Medium 33	Varies	Medium	Varies	High
20.1	Surgical site infections	Appropriate use of antibiotic prophylaxis	Medium 34	High	Robust	Medium 35	Low	Low
20.2	Surgical site infections	Maintenance of perioperative normothermia	High	Medium 36	Robust	Medium 37	Low	Low
20.3	Surgical site infections	Use of supplemental perioperative oxygen	High	Medium 38	Robust	Low	Low	Low
20.4	Surgical site infections	Perioperative glucose control	High	Medium	Robust	Medium	Low	High ³⁹
21	Morbidity due to central venous catheter insertion	Use of real-time ultrasound guidance during central line insertion	High	High	Robust ⁴⁰	Low ⁴¹	Medium	High
22	Surgical items left	Counting sharps, instruments,	Insuff.	Low	Not rated	Not rated	Low	Low

Ch. #	Patient Safety Target	Patient Safety Practice	Impact	Study Strength	Effect Size	Vigilance	Cost	Complexity
	inside patient	sponges	Info. ⁴²					
23	Complications due to anesthesia equipment failures	Use of preoperative anesthesia checklists	Low ⁴³	Low	Not rated	Not rated	Low	Low
24	Critical events in anesthesia	Intraoperative monitoring of vital signs and oxygenation	Low ⁴⁴	Medium 45	Unclear ⁴⁶	Low	Low	Low
25	Perioperative cardiac events in patients undergoing noncardiac surgery	Use of perioperative beta-blockers	High	High	Robust	Medium	Low	Low
26.1	Falls	Use of identification bracelets	Medium	Medium	Negligible	Low	Low	Low
26.2	Restraint-related injuries; Falls	Interventions to reduce the use of physical restraints safely	Medium	Medium	Unclear ⁴⁷	Medium	Medium	Low
26.3	Falls	Use of bed alarms	Medium	Medium	Unclear	Low ⁴⁸	Medium 49	Low
26.4	Falls and fall- related injuries	Use of special flooring material in patient care areas	Medium	Low	Not rated	Not rated	High	Low
26.5	Falls and fall injuries	Use of hip protectors	Medium	High	Robust	Medium	Low ⁵⁰	Low ⁵¹
27	Pressure ulcers	Use of pressure relieving bedding materials	High	High	Robust ⁵²	Low	High	Low
28	Hospital-related delirium	Multi-component delirium prevention program	High	Medium	Robust	Low	Medium	Low
29	1 1	Geriatric consultation services	High	High	Varies ⁵³	Low	Medium	High

Ch. #	Patient Safety Target	Patient Safety Practice	Impact	Study Strength	Effect Size	Vigilance	Cost	Complexity
30	Hospital-acquired complications (functional decline, mortality)	Geriatric evaluation and management unit	High	High	Modest ⁵⁴	Low	Medium	High
31	Venous thromboembolism (VTE)	Appropriate VTE prophylaxis	High	High	Robust	Medium	Low	Low ⁵⁵
32	Contrast-induced renal failure	Use of low osmolar contrast media	Medium	High	Robust	Low	High ⁵⁶	Low
32	Contrast-induced renal failure	Hydration protocols with theophylline	Medium	High	Negligible	Low	Low	Low
32	Contrast-induced renal failure	Hydration protocols with acetylcysteine	Medium	Medium 57	Robust	Low	Low	Low
33	Morbidity and mortality in post- surgical and critically ill patients	Various nutritional strategies	High	High	Robust ⁵⁸	Medium	Medium	Low
34	Stress-related gastrointestinal bleeding	H ₂ -antagonists	Medium	High	Unclear	Medium 59	Low	Low
35	Clinically significant misread radiographs and CT scans by non-radiologists	Education interventions and continuous quality improvement strategies	Medium	Medium	Robust	Low	Low	Low
36	Pneumococcal pneumonia	Methods to increase pneumococcal vaccination rate	Medium	High	Unclear ⁶⁰	Low ⁶¹	Low	Low
37.1	Inadequate pain relief in hospital patients with abdominal pain	Use of analgesics in patients with acute abdomen without compromising diagnostic accuracy	High	Medium 62	Robust	Medium	Low	Low ⁶³
37.2	Inadequate pain relief	Acute pain service	High	Medium	Robust ⁶⁴	Low ⁶⁵	Medium	Low

Ch. #	Patient Safety Target	Patient Safety Practice	Impact	Study Strength	Effect Size	Vigilance	Cost	Complexity
37.4	Inadequate postoperative pain management	Non- pharmacologic interventions (eg, relaxation, distraction)	High	High	Unclear	Low	Low	Low
38	Morbidity and mortality in ICU patients	Change in ICU structure—active management by intensivist	High	Medium	Robust ⁶⁶	Low	Medium	High
39	Morbidity and mortality	Changes in nursing staffing	High	Medium 67	Varies	Low	High	Low ⁶⁸
40	Any safety problem amenable to culture	Promoting a culture of safety	Insuff. Info.	** ⁶⁹			Varies	High
41.1	Medical device related adverse events	Use of human factors principles in evaluation of medical devices	Insuff. Info.	**70			Varies	High
41.2	Adverse events	Refining performance of medical device alarms (eg, balancing sensitivity and specificity of alarms, ergonomic design)	High ⁷¹	**72			Varies	High
42.1	Adverse events related to discontinuities in care	Information transfer between inpatient and outpatient pharmacy	High	Medium	Robust	Low	Medium 73	Low
42.2	Adverse events during cross- coverage	Standardized, structured sign- outs for physicians	Medium	Low	Not rated	Not rated	Low ⁷⁴	Low
42.3	Adverse events related to information loss at discharge	Use of structured discharge summaries	Insuff. Info	Low ⁷⁵	Not rated	Not rated	Low	Low
42.4	Failures to communicate significant abnormal results	Protocols for notification of test results to patients	Medium	Medium	Modest	Low	Low	Low

Ch. #	Patient Safety Target	Patient Safety Practice	Impact	Study Strength	Effect Size	Vigilance	Cost	Complexity
	(eg, pap smears)							
43.1	Adverse events due to patient misidentification	Use of bar coding	High ⁷⁶	Low	Not rated	Not rated	Varies ⁷⁷	High
43.2	Performance of invasive diagnostic or therapeutic procedure on wrong body part	"Sign your site" protocols	High	Low	Not rated	Not rated	Low	High
44	Adverse events related to team performance issues	Application of aviation style crew resource management (eg, Anesthesia Crisis Management; MedTeams)	High ⁷⁸	Low	Not rated	Not rated	Medium	High
45	Adverse events due to provider inexperience or unfamiliarity with certain procedures and situations	Simulator-based training	Insuff. Info ⁷⁹	Medium 80	Unclear 81	Low	Medium	Low
46	Adverse events related to fatigue in health care workers	Limiting individual provider's hours of service	Insuff. Info.	Medium	Unclear	Low	High	High
46	Adverse events related to fatigue in health care workers	Fixed shifts or forward shift rotations	Insuff. Info.	**82			Varies 83	Varies
46	Adverse events related to fatigue in health care workers	Napping strategies	Insuff. Info.	**84			High ⁸⁵	Low
47	Adverse events due to transportation of critically ill patients between health care facilities	Specialized teams for interhospital transport	Medium	Medium 86	Modest	Low	Medium	Low

Ch. #	Patient Safety Target	Patient Safety Practice	Impact	Study Strength	Effect Size	Vigilance	Cost	Complexity
47	Adverse events due to transportation of critically ill patients within a hospital	Mechanical ventilation	Medium	Medium	Negligible	Low	Low	Low
48	Missed, incomplete or not fully comprehended informed consent	Asking that patients recall and restate what they have been told during informed consent	High	Medium	Robust	Low	Low	Low ⁸⁷
48	Missed, incomplete or not fully comprehended informed consent	Use of video or audio stimuli	High	Medium	Modest	Low	Low ⁸⁸	Low
48	Missed, incomplete or not fully comprehended informed consent	Provision of written informed consent information	High	Medium	Unclear	Low	Low	Low
49	Failure to honor patient preferences for end-of-life care	Computer- generated reminders to discuss advanced directives	High	Medium	Robust	Low	Medium 89	Low
49	Failure to honor patient preferences for end-of-life care	Use of physician order form for life-sustaining treatment (POLST)	High	Low	Not rated	Not rated	Low	Low ⁹⁰

Comments Section

¹ Medium strength of evidence for computerized physician order entry: although randomized control trials have been conducted, findings from sophisticated "home grown" systems only 2-3 sites may not be fully generalizable. In addition, the impact of the practice on adverse events has not been as well studied as for the non-clinical outcome, medication errors.

² Cost of CPOE is substantially higher than for most other practices in the high cost category.

³ The impact of clinical pharmacists consultation services may be less than that of CPOE due to logistics of screening large volumes of orders to target those most prone to error or most consequential.

⁴ Estimate of effect size based on single study with limited target (only antibiotic treatments).

⁵ Cost influenced by whether existing computer systems are used in pharmacy services.

⁶ For nomogram protocols, study strength medium because the major concern (bleeding) is not addressed in most studies.

⁷ Effect size greater than 15% for surrogate markers; not bleeding or clot rate.

⁸ Anticoagulation clinics: Both inpatient and outpatient venues studied, so some heterogeneity among results.

⁹ Self-management of warfarin (coumadin): on average the cost per patient is low, but the aggregated cost is medium from the perspective of an insurer or integrated system.

¹⁰ Higher complexity of implementation because self-management practice displaces locus of control out of institution and may engender debate over insurance coverage. Other countries cover this practice, but it is currently not covered by Medicare in the United States.

¹¹ Unit-dosing is a ubiquitous practice that has surprisingly little evidence of effectiveness; evidence is old and mixed.

¹² Study strength is affected because outcomes measured are not the major outcomes of interest - ie, ADEs.

¹³ The implementation ratings are related to patient safety only, but note that institutions may also implement this practice for cost-savings due to less drug loss and better inventory control.

¹⁴ Study design for handwashing compliance practices generally had short duration of follow-up; no randomized control trials.

¹⁵ Unclear effect size due to mixed results and no clear pattern in a group of heterogeneous practices.

¹⁶ Rated as low, but this practices requires behavior change on the part of the provider. Therefore, it may be more difficult to implement because its success largely rests on education (see Chapter 54) and acceptance.

¹⁷ There are a number of studies of barrier precautions, but most are Level 3 study designs so the strength is not rated as "High."

¹⁸ Potential decrease in provider interaction with patients may cause psychological, as well as other, effects if care from clinicians is compromised.

¹⁹ Rated as low, but this practices requires behavior change on the part of the provider. Therefore, it may be more difficult to implement because its success largely rests on education (see Chapter 54) and acceptance.

²⁰ Impact upgraded from "medium" to "high" rating because of public health impact of more antibiotic-resistant pathogens.

²¹ Practice requires active, ongoing monitoring and input from infection control officers to make sure proper drugs are prescribed. Also, vigilance includes need for institution-wide monitoring of pathogens.

²² The effect size of using silver alloy catheters is unclear: a well-done meta-analysis is positive, showing decrease in bacteriuria, but more recent results of possibly better designed individual studies are mixed regarding benefit. Also, the actual strength of the link, however intuitive, between bacteriuria and clinically significant urinary tract infection is unclear.

²³ Effect size of using suprapubic catheters is unclear because of some heterogeneity in studies. Results are generally positive, but no meta-analysis yet conducted. In addition, the effect on outcome of clinically significant urinary tract infections is also unclear.

²⁴ Rated as low, but this practices requires behavior change on the part of the provider. Therefore, it may be more difficult to implement because its success largely rests on education (see Chapter 54) and acceptance.

²⁵ With antibiotic-impregnated catheters made with minocycline, there is the theoretical risk of increased antibiotic resistance.

²⁶ Pneumonia outcome was significantly reduced, but mortality was not.

²⁷ Meta-analysis of 6 randomized controlled trials showed significant and large relative risk reduction, but 2 other randomized controlled trials showed no impact.

²⁸ Benefit observed in prevention of ventilator-acquired pneumonia; no established benefit for mortality.

- ³¹ Medium vigilance for harm because of public health concerns due to possible increase in antibiotic resistance. The Center for Disease Control and Prevention (CDC) and the American Thoracic Society (ATS) both recently reviewed this topic and did not recommend this practice.
- ³² If sucralfate were used because of its possible effect on reducing risk of ventilator-acquired pneumonia, it would displace a practice that has more established benefit for GI bleeding (H₂ blockers).
- ³³ The study strength for localizing care to high volume centers is evaluated across a range of practices. There are large variations in evidentiary base across specific practices. Evidence is not structured to determine effect on patient safety. Although the literature includes possible benchmarks/thresholds for volume levels for specific procedures, the evidence is related more to quality enhancement than to improvements in patient safety.

²⁹ High complexity for implementation since it requires retraining for a new practice.

³⁰ Most benefit in reducing pneumonia and mortality occurs when both IV and topical decontamination are used. Topical (by itself) only reduces ventilator-associated pneumonia. However, topical carries less potential for harm (ie, antibiotic resistance).

³⁴ Relatively high current utilization of practice reduced impact by one level.

³⁵ Vigilance is required to monitor antibiotic overuse to prevent negative public health effects.

³⁶ Study strength is rated as medium because randomized clinical trial data only applies to one disease process, although may be generalizable.

³⁷ Medium vigilance for harm: although not studied, for certain cohorts the practice may be detrimental.

³⁸ Study strength is rated as medium because randomized clinical trial data only applies to one disease process, although may be generalizable.

³⁹ Tight perioperative glucose control requires major shift in practice style, increased vigilance, more coordination between nurses and physicians, and perhaps new policies regarding nursing care for diabetics.

⁴⁰ Effect size high, but more impressive decrease in "failed insertion attempts" than in more clinically relevant complications. Also, there is some heterogeneity in study results, and there are two different technologies assessed (plain ultrasound vs. US with doppler), and the results vary.

⁴¹ Theoretical risk that additional manipulation/handling could increase infection risk; also concern regarding impact on providers' abilities to place catheters emergently when ultrasound guidance is not available.

- ⁴⁵ Although there has been a very large randomized trial of pulse oximetry, other studies covered additional aspects of intraoperative monitoring and were generally of lower study design quality.
- ⁴⁶ Pulse oximetry study showed no benefit, but major potential methodologic problems, such as secular trends. Complications that monitoring are designed to find are very unusual, so even a large trial may have been under-powered to detect important effects.
- ⁴⁷ Because the patient safety target is *reduction* of unnecessary restraints, there are multiple outcomes of interest. Although reducing unnecessary restraints does not seem to increase the risk of falls, it raises other concerns regarding disconnected IVs, elopement risk, etc., which have not been fully evaluated.
- ⁴⁸ Probably low, as categorized, but there is a theoretical risk that patients will not receive as much attention from nurses and other providers.
- ⁴⁹ Medium cost based on relatively widespread implementation of bed alarms required to impact all patients who may potentially benefit. May also impact nursing workload and staffing needs.
- ⁵⁰ Possibly higher cost if large numbers of patients would benefit from wearing hip protectors. There is also the question of whether these costs are borne by system/insurers or patients themselves.
- ⁵¹ Implementation complexity in the hospital may be low, but implementation outside of the hospital might involve large educational campaign directed at patients who could benefit from practice.
- ⁵² Studies compare a variety of special bedding materials to standard beds. Effect size for one special bed option versus another is not known. Unclear which particular surface works best.
- ⁵³ Effect size varies since heterogeneous outcomes, perhaps in part related to the variety of interventions, some of which involved both inpatient and outpatient components.
- ⁵⁴ Effect size varies due to heterogeneous results, which depend in part on the outcomes of interest (ie, functional outcomes vs. mortality).

⁴² Insufficient information about retained sponges: the event is highly concerning and often morbid when occurs, but the only data on frequency are from case reports.

⁴³ Low potential impact because anesthesia complications are already so uncommon; also difficult to determine impact of current use of some version of this practice (eg, low opportunity possible due to current utilization).

⁴⁴ Low potential impact because anesthesia complications are already so uncommon; also difficult to determine impact of current use of some version of this practice (eg, low opportunity possible due to current utilization).

- ⁵⁸ Varies according to specific nutritional support practice. Robust findings for early enteral nutrition in critically ill and post-surgical patients.
- ⁵⁹ Vigilance for harm is medium because of potential risk of increasing ventilator-associated pneumonia, and also because of possible overuse since high-risk groups are now better defined.
- ⁶⁰ Depends on specific intervention; standing orders have the highest effectiveness.
- ⁶¹ Harm concern low, except one recent study (see Chapter 36) showed trend toward harm in HIV-positive patients.
- ⁶² Although some studies were randomized control trials, they did not look at all clinically relevant outcomes to ensure that practice was safe. Under-powered to assess whether diagnostic capability not impaired.
- ⁶³ Rated as low, but this practices requires behavior change on the part of the provider. Therefore, it may be more difficult to implement because its success largely rests on education (see Chapter 54) and acceptance.
- ⁶⁴ Only studied for post-operative pain; may not apply more generally.
- 65 Some speculation that care may be fragmented when applied broadly, beyond post-operative patients.
- ⁶⁶ Some of the positive results may be attributable to factors other than the intervention. Concern about underlying population changing (eg, secular trends).
- ⁶⁷ Study strength is medium despite a number of studies, because of variation in practices (eg, various measures of nurse staffing, models of care). Chapter was designed to generalize across practices regarding nursing structure versus outcomes; evidence is not structured to tell effect on patient safety, and there are no benchmarks/thresholds for nurse staffing levels.
- ⁶⁸ Rated as low, but this practices requires behavior change on the part of the provider. Therefore, it may be more difficult to implement because its success largely rests on education (see Chapter 54) and acceptance.

⁵⁵ Rated as low, but this practices requires behavior change on the part of the provider. Therefore, it may be more difficult to implement because its success largely rests on education (see Chapter 54) and acceptance.

⁵⁶ Total cost, of course, depends on the extent of utilization (eg, all patients versus only targeted patients). Cost-effectiveness analyses demonstrate the importance of targeting appropriate patients.

⁵⁷ Outcome is level 2, only one study for N-acetylcystine.

- ⁶⁹ Most evidence available outside of medicine; study strength not rated. These practices, drawn largely from non-health care industries, were not fully rated because of their unique nature and their relatively small evidentiary base in the health care literature.
- ⁷⁰ Most evidence available outside of medicine; study strength not rated. These practices, drawn largely from non-health care industries, were not fully rated because of their unique nature and their relatively small evidentiary base in the health care literature.
- ⁷¹ Although alarms are ubiquitous in the hospital, it is unclear how many adverse events might be improved by improvements in alarm systems.
- ⁷² Most evidence available outside of medicine; study strength not rated. These practices, drawn largely from non-health care industries, were not fully rated because of their unique nature and their relatively small evidentiary base in the health care literature.
- ⁷³ Costs are shared among a variety of payors including outpatient pharmacy.
- ⁷⁴ Cost would vary based on interventions considered—some low-tech, paper-based, or pocket computers; higher cost for full-scale computerized systems.
- ⁷⁵ Although one randomized trial performed, the outcomes reported were only indirectly related to patient safety outcomes.
- ⁷⁶ Somewhat unclear, but errors due to misidentification can be grave.
- ⁷⁷ Cost varies based on specific system and level of implementation.
- ⁷⁸ Impact is a function of how widely the practice can be used (ICU vs. ward teams vs. operating room).
- ⁷⁹ Insufficient information outside of anesthesia about volume of human factors errors amenable to training approaches.
- 80 Limited studies with small numbers of participant and with different simulators lead to concerns about generalizability.
- ⁸¹ Effect unclear since few studies with comparable simulators, and evaluated with mostly Level 3 outcomes.
- ⁸² Most evidence available outside of medicine; study strength not rated. These practices, drawn largely from non-health care industries, were not fully rated because of their unique nature and their relatively small evidentiary base in the health care literature.
- ⁸³ Fixed shift may be more costly and difficult to implement than forward rotation.

⁸⁴ Most evidence available outside of medicine; study strength not rated. These practices, drawn largely from non-health care industries, were not fully rated because of their unique nature and their relatively small evidentiary base in the health care literature.

⁸⁵ Restructuring patient care to allow for napping while minimizing discontinuities could be expensive.

⁸⁶ Study strength is borderline-medium with three Level 3 studies.

⁸⁷ Rated as low, but this practices requires behavior change on the part of the provider. Therefore, it may be more difficult to implement because its success largely rests on education (see Chapter 54) and acceptance.

⁸⁸ Cost for video disks – assumes that off-the-shelf products exist for common procedures; would be higher if an institution has to build its own systems.

⁸⁹ Cost would be lower for health care organizations that already rely on computers for care management.

⁹⁰ Rated as low, but this practices requires behavior change on the part of the provider. Therefore, it may be more difficult to implement because its success largely rests on education (see Chapter 54) and acceptance.