

**VETERANS HEALTH ADMINISTRATION  
OFFICE OF PATIENT CARE SERVICES  
TECHNOLOGY ASSESSMENT PROGRAM**

Brief Overview:

**Systematic Reviews for Patient-Centered Care**

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# TECHNOLOGY ASSESSMENT PROGRAM

## An Effective Resource for Evidence-based Managers

VA's Technology Assessment Program (TAP) is a national program within the Office of Patient Care Services dedicated to advancing evidence-based decision making in VA. TAP responds to the information needs of senior VA policy makers by carrying out systematic reviews of the medical literature on health care technologies to determine "what works" in health care. "Technologies" may be devices, drugs, procedures, and organizational and supportive systems used in health care. TAP reports can be used to support better resource management.

TAP has two categories of products directed toward filling urgent information needs of its VA clients. TAP assigns a category to each new request based largely on the availability of studies from results of initial searches of peer-reviewed literature databases:

- The **Short report** is a self-contained, rapidly-produced qualitative systematic review of between 5 and 20 pages. It provides sufficient background information and clinical context to its subject technology to be accessible to a wide audience, including non-clinician managers.
- The **Brief overview** originated as an internal memo to VA clients with both well-defined and urgent information needs. It usually comprises 2 to 10 pages and assumes sufficient existing knowledge regarding clinical context and technology issues by its readers to omit these components of other TAP products. It often requires some additional reading of documents (provided with the overview for the client) to obtain a full and comprehensive picture of the state of knowledge on the topic.

All TAP products are reviewed internally by TAP's physician advisor and key experts in VA. Additional comments and information on this report can be sent to:

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**A SUMMARY FOR HTA REPORTS**  
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VATAP is a member of the International Network of Agencies for Health Technology Assessment (INAHTA) [www.inahta.org]. INAHTA developed this checklist<sup>®</sup> as a quality assurance guide to foster consistency and transparency in the health technology assessment (HTA) process. VATAP will add this checklist<sup>®</sup> to its reports produced since 2002.

This summary form is intended as an aid for those who want to record the extent to which a HTA report meets the 17 questions presented in the checklist. It is NOT intended as a scorecard to rate the standard of HTA reports – reports may be valid and useful without meeting all of the criteria that have been listed.

<b>BRIEF OVERVIEW: Systematic Reviews for Patient-Centered Care (May 2007)</b>			
Item	Yes	Partly	No
<b>Preliminary</b>			
1. Appropriate contact details for further information?	√		
2. Authors identified?	√		
3. Statement regarding conflict of interest?			√
4. Statement on whether report externally reviewed?	√		
5. Short summary in non-technical language?	√		
<b>Why?</b>			
6. Reference to the question that is addressed and context of the assessment?	√		
7. Scope of the assessment specified?	√		
8. Description of the health technology?		√	
<b>How?</b>			
9. Details on sources of information?	√		
10. Information on selection of material for assessment?	√		
11. Information on basis for interpretation of selected data?	√		
<b>What?</b>			
12. Results of assessment clearly presented?	√		
13. Interpretation of the assessment results included?	√		
<b>What Then?</b>			
14. Findings of the assessment discussed?	√		
15. Medico-legal implications considered?		√	
16. Conclusions from assessment clearly stated?	√		
17. Suggestions for further actions?	√		

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## BRIEF OVERVIEW:

# SYSTEMATIC REVIEWS FOR PATIENT-CENTERED CARE

## INTRODUCTION

*“Patient-centeredness has been varyingly used to describe a philosophy of medicine, a clinical method, a type of therapeutic relationship, a quality-of-care indicator, a professional and moral imperative, and a communication style...Mead & Bower (2000) concluded that although there is agreement on several dimensions of the concept of patient-centeredness, areas of conceptual contention are evident, and there is little consensus on operationalization of indicators or measurement approaches.” (Roter and Hall, 2004)*

## BACKGROUND

The VHA Office of Patient Care Services (OPCS) asked TAP to review published literature on patient-centered care as support for its 2005-6 strategic planning process. The working definition for patient centered care in this context is:

*“Patient Centered Care incorporates the patient’s goals of care in addressing all needs. These include medical, functional, psychosocial and spiritual. It requires that the highest level of evidence is used to guide the patient and family when appropriate, in making well-informed decisions, and that they are fully invested in the management of their conditions. It seeks to balance patient preferences with sound clinical practices. This care is compassionate, convenient, timely, safe, cost-effective, efficient, interdisciplinary and collaborative.” (Robbins, 2006).*

Within this broad definition, VHA’s patient-centered care strategic planning initiative group was most specifically interested in the efficacy of culture- or ethnicity-specific programs for its patient population and in methods useful for gathering patient satisfaction and wants/needs information. The former (efficacy of culture and ethnic programs) TAP addresses in this overview; for the latter (patient satisfaction and wants/needs), TAP referred the initiative group to outside consultants.

Bauman (2003) provides a concise overview of concepts for patient-centeredness:

- *“Patient-centered care is about sharing the management of an illness between patient and doctor; it is not new but is increasingly evidence-based, especially for chronic problems such as diabetes, asthma and arthritis.*
- *Systematic reviews show that patient-centered care results in increased adherence to management protocols, reduced morbidity and improved quality of life for patients.*
- *Key features of the doctor-patient interaction are shared goal setting, written management plans and regular follow up.*
- *Supportive community-based services and programs, combined with healthcare system commitment, are also required to make this approach effective in improving population health.”*

Bauman then pares the list down to three core elements:

- Communication with patients;
- Partnerships;
- A focus beyond specific conditions, on health promotion and healthy lifestyles.

**Addition to TAP's charge**

In May 2007, the original patient-centered care issues were further focused on patient education and clinician-patient communication. This overview reflects TAP literature syntheses for both phases.

**METHODS**

Against the background of the conceptual variation in patient-centeredness cited by Roter and Hall (2004) above, the very broad coverage of the PCS strategic planning definition, and urgent delivery schedules, TAP approached both stages of its charge by first identifying available systematic reviews for patient-centered care or its component concepts (patient education; communication with patients; self management; and culturally sensitive care). Such reviews provide a concise and immediately accessible "snapshot" of the extent to which research in concepts or interventions related to patient-centeredness has progressed to an evidence base on which to build a system-wide strategy.

**Selection criteria**

Reviews were further required to be available in English, and to have been published or updated since 1995. Final updated searches were conducted on May 15, 2007.

**Systematic reviews**

Cook (1997) and Mulrow (1997) define systematic reviews: "*Systematic reviews are scientific investigations in themselves, with pre-planned methods and an assembly of original studies as their "subjects". They synthesize the results of multiple primary investigations by using strategies that limit bias and random error...*"

The same authors further specify characteristics of systematic reviews and contrast them with traditional narrative reviews, which synthesize a selection of articles without reporting methods of selection or quality criteria. Systematic reviews:

- Ask a focused clinical question.
- Conduct a comprehensive search for relevant studies using an explicit search strategy.
- Uniformly apply criteria for inclusion and exclusion of studies.
- Rigorously and critically appraise included studies.
- Provide detailed analyses of the strengths and limitations of included studies.

Systematic reviews can be quantitative (i.e., meta-analytic, applying statistical methods to the summary of study results) or qualitative; in either case the inferences or conclusions of the review must follow logically from the evidence presented. The logic of this approach is illustrated by the place of systematic reviews in evidence grading schemes (Cook, 1995; Guyatt 1995), where they receive the highest level designation. This overview includes any review meeting the definition of systematic, whether meta-analytic or qualitative. We excluded Cochrane Collaboration protocols (reviews in the planning stage).

**Search strategy**

For this part of the work for the patient-centered care initiative group, TAP searched PubMed and the Cochrane library using the terms “patient-centered care”, “review”, and “meta-analysis” for the years 1995 to 2006 to identify systematic reviews published in English and covering research using adult human subjects.

**RESULTS**

The 25 systematic reviews identified by TAP searches are abstracted in Tables 1 and 2, then briefly summarized in the Appendix: Fifteen reviews are from the Cochrane Collaboration; ten were published in print journals. Of the 25, only two (Lewin, 2001; Bouleware; 2001) referred specifically to “patient-centered care” in any global sense; the remaining reviews addressed components of patient-centered care (patient education, (six reviews); or self management programs (two reviews), both specific to diagnoses or diseases. The remainder address multi-faceted interventions, promotion of patient-centered care, end-of-life or palliative care (two reviews), interventions specific to cultural or ethnic groups (six reviews), or other concepts related to patient-centered care (physician smoking cessation advice, discharge interventions, or satisfaction with day surgery).

The strategic planning initiative group judged Lewin (2001) inadequate to its needs, but TAP includes it here as the only Cochrane review to use “patient-centered care” explicitly in its title. Table 1 provides a high-level summary of available systematic reviews while Table 2 abstracts their details.

**Table 1. Summary availability of English-language systematic reviews for patient-centered care (2000-2007)**

Citation	Clinical setting	Intervention(s) covered
<b>Reviews from the Cochrane Collaboration</b>		
Rueda (2006)	HIV/AIDS	Patient support and education interventions to improve adherence to anti-retroviral therapy
Deakin (2005)	Self management of type 2 diabetes	Group-based, patient-centered education programs for adults
Edwards (2005)	Decisions about screening tests	Personalized risk communication
Murray (2005)	Chronic disease	Interactive health communication applications
Vermeire (2005)	Type 2 diabetes	Improving adherence to treatment
Lancaster (2004)	Smoking cessation	Physician advice
McDonald (2004)	Hip or knee replacement	Pre-operative education
Warsi (2004)	Chronic disease	Self management education
Fahey (2003)	Hypertension	Self-monitoring, education of patient or provider, nurse- or pharmacist-led care
Riensma (2003)	Rheumatoid arthritis	Patient education
Gibson (2002a)	Asthma	Asthma education for adult patients
Gibson (2002b)	Asthma	Self-management education
Lewin (2001)	Promotion of patient-centered approach	Training for health care providers
Renders (2000)	Primary care management of diabetes	Multi-faceted health professional or patient education
Quan (2000)	Hypertension control by age and race in women	Pharmacologic treatment tailored to patient-specific risks

Citation	Clinical setting	Intervention(s) covered
Total: 15 completed Cochrane reviews	9 clinical settings plus promotion of patient-centered care.	Disease-specific educational, screening, or self-monitoring interventions.
<b>Other systematic reviews</b>		
Mistiaen (2007)	Overview of systematic reviews: Discharge home from general acute care	Discharge planning and support interventions
Rhodes (2006)	Day surgery	Description of patient subjective experience/satisfaction
Lorenz (2004; AHRQ EPC evidence report)	End of life care	<ul style="list-style-type: none"> <li>• Scope of end-of-life population;</li> <li>• Outcome variables that are valid indicators of the quality of the end-of-life experience for the dying person and surviving loved ones;</li> <li>• Patient, family, and healthcare system characteristics associated with better or worse outcomes at end-of-life;</li> <li>• Processes and interventions associated with improved or worsened outcomes;</li> <li>• Future research directions for improving end-of-life care.</li> </ul>
Wilkinson (1999)	Palliative care	Descriptive studies of patient satisfaction or preference; no intervention per se.
Sarkisian (2003)	Diabetes	Interventions for changing beliefs or behaviors in African American or Latino adults
Lawrence (2003)	Preventive medicine	Smoking cessation interventions for US minority/ethnic populations.
Mize (2002)	HIV	Prevention interventions in 5 ethnic groupings
Bouleware (2001)	Hypertension	Patient-centered counseling, structured training, self-monitoring
Beach (2004; AHRQ EPC evidence report)	Improving minority health care quality	Interventions designed to improve quality of health care in racial or ethnic minorities, and targeted at healthcare providers or organizations
Shin (2005)	Mental health services	Clint-clinician matching for race and ethnicity
Total: 10 additional systematic reviews	7 clinical settings plus overall quality	Range of interventions, some culturally- or ethnically- specific.

Abbreviations: CHF, congestive heart failure  
 CI, 95% confidence interval  
 FU, follow up  
 LOS, length of stay  
 NNT, number needed to treat  
 OR, odds ratio  
 QoL, quality of life  
 RCT, randomized controlled trial  
 RR, relative risk

## **SUMMARY AND DISCUSSION**

Patient-centered care can be a nebulous concept with a range of definitions and acknowledged difficulty in measuring it or its effects. Hence, health care researchers approaching the concept have tended to break it down into more manageable (and measurable) segments, such as the efficacy of self-management education programs for patients with chronic diseases.

### **Patient-centered care overall**

Systematic reviews synthesizing primary research inevitably have followed the same path: six of the nine reviews identified for this overview synthesized disease-specific patient education or self-management interventions for chronic conditions, but no review focused explicitly on all aspects of patient-centered care as outlined in the PCS initiative group definition. Only two reviews attempted any breadth of approach (Lewin, 2001; Boulware, 2001). Lewin (2001) is a Cochrane review synthesizing results of randomized and other controlled studies for interventions directed to providers; given Cochrane methods and rigorous ongoing review, its results may be considered robust and trustworthy. Boulware (2001) required only that included articles be published in peer-reviewed journals. Lacking more specific inclusion and quality evaluation criteria, results from Boulware should be viewed with a degree of skepticism.

### **Communication with patients/patient education**

Reviews of communication or patient education (Appendix Table 2) cover a broad range of interventions and found areas of consensus across that range:

- The quality of primary research needs improvement;
- Articles meeting selection criteria for individual reviews used patient populations, interventions, and outcomes too heterogeneous to pool results;
- Any positive effects were small, relevant to intermediate outcomes, or seen only in some diagnostic groups at some follow up periods.

Finally, as PCS strategic planning proceeds and further clarifies its literature synthesis needs, TAP will continue to monitor the literature for new approaches to defining and measuring patient centered care.

APPENDIX

Table 2. Systematic reviews of interventions related to patient-centered care

Citation	Objective	Included studies	Results/Conclusions
<b>Reviews from the Cochrane Collaboration</b>			
McDonald (2004)	To determine whether pre-operative education improves post-operative outcomes (anxiety, pain, mobility, length of stay, incidence of deep vein thrombosis) in patients undergoing hip or knee replacement surgery.	<ul style="list-style-type: none"> <li>• Randomized trials;</li> <li>• Pre-operative education (verbal, written, audiovisual) delivered by health professional;</li> <li>• Multiple databases, 1966-2002.</li> </ul>	<ul style="list-style-type: none"> <li>• 9 studies (782 subjects) included;</li> <li>• 4 studies (365 subjects) assessed LOS but detected no significant difference, although one study (N= 133 with complex needs) found that individually tailored programs of education and support did decrease LOS; the 4 LOS studies reported reduction in days to standing and days to climb stairs;</li> <li>• 3 trials found reductions in pre-operative anxiety;</li> <li>• No significant effects on post-operative anxiety the day after surgery or at discharge;</li> <li>• 5 studies reported post-operative pain: no significant effects of education.</li> </ul> <p><b>Conclusions:</b> <i>"There is little evidence to support the use of pre-operative education over standard care to improve post-operative outcomes in patients undergoing hip or knee replacement surgery, especially with respect to pain, functioning, and length of hospital stay. There is evidence that pre-operative education has a modest beneficial effect on pre-operative anxiety. There may also be beneficial effects when pre-operative education is tailored according to anxiety, or targeted at those most in need of support (e.g. those who are particularly disabled, or have limited social support structures)."</i></p>
Riemsma (2003)	To assess the effectiveness of patient education interventions on health status in people with rheumatoid arthritis	<ul style="list-style-type: none"> <li>• RCTs: patient education with instructional component and non-intervention control;</li> <li>• Pre- and post-test results available separately for rheumatoid arthritis, either in publication or from authors;</li> <li>• Study results presented in full, end-of-study report;</li> <li>• Excluded: studies in which intervention was only behavioral (e.g. biofeedback) without educational component, or was only social support.</li> </ul>	<ul style="list-style-type: none"> <li>• 31 studies included;</li> <li>• Significant effects for patient education at first FU for scores on disability, joint counts, patient global assessment, psychological status, and depression;</li> <li>• Trend favoring education on scores for pain;</li> <li>• Physician global assessment not reported in any included studies;</li> <li>• Anxiety and disease activity showed no significant effects;</li> <li>• At final FU: no significant effects of patient education, although there was a trend favoring education for disability scores.</li> </ul> <p><b>Conclusions:</b> <i>Patient education as provided in the studies reviewed here had small short-term effects on disability, joint counts, patient global assessment, psychological status and depression. There is no evidence of long-term benefits in adults with rheumatoid arthritis."</i></p>
Renders (2000)	To assess the effects of different interventions, targeted at health professionals or the structure in which they deliver care, on the management of patients with diabetes mellitus in primary care, outpatient and community settings. Some studies added patient education to other interventions.	<ul style="list-style-type: none"> <li>• Randomized trials;</li> <li>• Controlled clinical trials;</li> <li>• Controlled before and after studies;</li> <li>• Interrupted time series;</li> <li>• Analyses of professional, financial, and organizational strategies aimed at improving care for people with Type 1 or Type 2 diabetes.</li> <li>• Participants: health care professionals, including physicians, nurses, and pharmacists.</li> </ul>	<ul style="list-style-type: none"> <li>• 41 studies involving more than 200 practices and 48,000 patients.</li> <li>• The methodological quality of the studies was often poor.</li> <li>• The studies were heterogeneous in terms of interventions, participants, settings, and outcomes.</li> <li>• A combination of professional interventions improved process outcomes; the effect on patient outcomes remained less clear as these were rarely assessed.</li> <li>• Arrangements for follow-up (organizational intervention) also showed a favorable effect on process outcomes.</li> <li>• Multiple interventions to which patient education was added or in which the role of the nurse was enhanced also reported favorable effects on patients' health outcomes.</li> </ul> <p><b>Conclusions:</b> <i>"Multi-faceted professional interventions can enhance the performance of health</i></p>

Citation	Objective	Included studies	Results/Conclusions
		<ul style="list-style-type: none"> <li>In all studies the intervention strategy was multi-faceted;</li> <li>Outcomes: objectively measured health professional performance or patient outcomes, and self-report measures with known reliability and validity.</li> </ul>	<p><i>professionals in managing patients with diabetes. Organizational interventions that improve regular prompted recall and review of patients (central computerized tracking systems or nurses who regularly contact the patient) can also improve diabetes management. The addition of patient-oriented interventions can lead to improved patient health outcomes. Nurses can play an important role in patient-oriented interventions, through patient education or facilitating adherence to treatment."</i></p>
Fahey (2003)	<ul style="list-style-type: none"> <li>To determine the effectiveness of interventions to improve control of blood pressure inpatients with elevated blood pressure.</li> <li>To evaluate the ability of reminders to improve follow-up of patients with elevated blood pressure</li> </ul>	<p>RCTs of patients with hypertension that evaluated interventions:</p> <ul style="list-style-type: none"> <li>Self-monitoring;</li> <li>Educational interventions directed to the patient;</li> <li>Educational interventions directed to the health professional;</li> <li>Health professional (nurse or pharmacist) led care;</li> <li>Organizational interventions that aimed to improve the delivery of care;</li> <li>Appointment reminder systems.</li> <li>Outcomes assessed: mean systolic and diastolic blood pressure; control of blood pressure; proportion of patients followed up at clinic</li> </ul>	<ul style="list-style-type: none"> <li>59 RCTs:</li> <li>The methodological quality of included studies was variable;</li> <li>An organized system of regular review linked to vigorous anti-hypertensive drug therapy was shown to reduce blood pressure (weighted mean difference -8.2/-4.2mmHg (-11.7/-6.5 mmHg, -10.6/-7.6mmHg for 3 strata of entry blood pressure) and all-cause mortality at 5 years follow-up (6.38% versus 7.78%, difference 1.4%0 in a single large RCT (Hypertension Detection and Follow-Up Study).</li> <li>Other interventions had variable effects: self-monitoring was associated with moderate net reduction in diastolic blood pressure (weighted mean difference, -2.03mmHg; CI, -2.69- -1.38mmHg). Appointment reminders increased the proportion of individuals who attended for follow-up.</li> <li>RCTs of educational interventions directed at patients or health professionals were heterogeneous but appeared to be unlikely to be associated with large net reductions in blood pressure.</li> <li>Health professional (nurse or pharmacist) led care may be a promising way of delivering care, with the majority of RCTs being associated with improved blood pressure control, but requires further study.</li> </ul> <p><i>Conclusions: "We conclude that an organized system of registration, recall, and regular review linked to a vigorous stepped approach to anti-hypertensive drug treatment appears the most likely way to improve control of elevated blood pressure. Health professional (nurse or pharmacist) led care requires further evaluation. Education alone, either of health professionals or patients, does not appear to be associated with large net reductions in blood pressure."</i></p>
Lewin (2001)	<p>To assess the effects of interventions for health care providers that aim to promote patient-centered approaches in clinical consultations.</p>	<ul style="list-style-type: none"> <li>Randomized controlled trials;</li> <li>Controlled before and after studies;</li> <li>Interrupted time series studies</li> <li>Interventions for providers that promote patient-centered care (<i>"a philosophy of care that encourages shared control of the consultation, decisions about interventions or management of the health problems with the patient, and/or a focus in the consultation on the patient as a whole person with individual preferences situated within social contexts (in contrast to a focus in the consultation on the body part or disease)."</i>)</li> <li>Participants: health care providers,</li> </ul>	<ul style="list-style-type: none"> <li>17 studies met inclusion criteria.</li> <li>The studies display considerable heterogeneity of the interventions themselves, the health problems on concerns on which the interventions focused, the comparisons made, and the outcomes assessed.</li> <li>All involved training for health care providers as an element of the intervention: 10, providers only; the remainder used multi-faceted interventions with training for providers as one component.</li> <li>The providers were mainly primary care physicians practicing in community or hospital outpatient settings; two studies also included nurses.</li> <li>There is fairly strong evidence to suggest that some interventions to promote patient-centered care in clinical consultation may lead to significant increases in the patient-centeredness of consultation processes.</li> <li>There is also some evidence that training health care providers in patient-centered approaches may impact positively on patient-satisfaction with care.</li> <li>6 out of 11 studies assessing patient satisfaction demonstrated significant differences in favor of the intervention group on one or more measures.</li> <li>Few studies examined health care behavior or health status outcomes.</li> </ul>

Citation	Objective	Included studies	Results/Conclusions
		including those in training.	<p><b>Conclusions:</b> <i>"Interventions to promote patient-centered care within clinical consultations may significantly increase the patient centeredness of care. However, there is limited and mixed evidence on the effects of such interventions on patient health behaviours or health status, or on whether these interventions might be applicable to providers other than physicians. Further research is needed in these areas."</i></p>
Gibson (2002a)	To assess the effects of limited (i.e., information only) asthma education on health outcomes in adults with asthma.	Randomized and controlled trials of individual asthma education involving information transfer only in adults over 16 years.	<ul style="list-style-type: none"> <li>• 12 trials of variable quality were included.</li> <li>• Limited asthma education did not reduce hospitalization for asthma (weighted mean difference-0.3 average hospitalizations per person per year; CI, -0.9-0.03).</li> <li>• There was no significant effect on doctor visits, lung function, and medication use.</li> <li>• The effects on asthma symptoms were variable.</li> <li>• There was no reduction in days lost from normal activity.</li> <li>• In two studies, perceived symptoms did improve after limited asthma education (OR, 0.44; CI, 0.26-0.74).</li> <li>• In one study, limited asthma education was associated with reduced emergency department visits (reduction of -2.76 average visits per person per year, CI, -4.34-1.18).</li> </ul> <p><b>Conclusions:</b> <i>"Use of limited asthma education as it has been practiced does not appear to improve outcomes in adults with asthma, although perceived symptoms may improve. Provision of information in the emergency department may be effective, but this needs to be confirmed."</i></p>
Gibson (20002b)	To assess the effects of asthma self-management programs, when coupled with regular health practitioner review, on health outcomes in adults with asthma.	Randomized trials of self management in adults over 16 years with asthma	<ul style="list-style-type: none"> <li>• Included 36 trials which compared self-management education with regular care.</li> <li>• Self-management education reduced hospitalizations (RR, 0.64; CI, 0.50-0.82); emergency room visits (RR, 0.82; CI, 0.73-0.94); unscheduled visits to the doctor (RR, 0.68; CI, 0.6-0.81); days off work or school (RR,0.79; CI, 0.67-0.93); and quality of life (standard mean difference, 0.29; CI 0.11-0.47).</li> <li>• Measures of lung function were little changed.</li> </ul> <p><b>Conclusions:</b> <i>"Education in asthma self-management which involves either peak expiratory flow or symptoms, coupled with regular medical review and a written action plan improves health outcomes for adults with asthma. Training programmes that enable people to adjust their medication using a written action plan appear to be more effective than other forms of asthma self-management."</i></p>
Quan (2000)	To assess whether the relative and absolute benefit of hypertension treatment in women varies with age or race.	RCTs of pharmacological treatment of primary hypertension, with cardiovascular morbidity and mortality outcomes, and with over 100 women enrolled.	<ul style="list-style-type: none"> <li>• The pooled population included 23,000 women.</li> <li>• In women ages 55 and older (90% white): hypertension treatment results in a 38% risk reduction in fatal and non-fatal cerebrovascular events (CI, 27-47%); a 25% risk reduction in fatal and non-fatal cardiovascular vents (CI, 17-337%); and a 17% risk reduction in cardiovascular mortality (CI, 3-29%; NNT, 282).</li> <li>• In women ages 30-54 years (79% white): hypertension treatment results in a 41% risk reduction (CI, 8-63%) in fatal and non-fatal cerebrovascular events; and a 27%r risk reduction (CI,4-44%; NNT, 259) in fatal and non-fatal cardiovascular events.</li> <li>• Hypertension treatment in African American women (mean age 52 years): reduced risk of fatal and non-fatal cerebrovascular events by 53% (CI, 29-69%;NNT, 39); fatal and non-fatal coronary events by 33%(CI, 2-25%;NNT, 48); and all cause mortality by 34%(CI, 14-49%; 5 year NNT, 39).</li> </ul>

Citation	Objective	Included studies	Results/Conclusions
			<p><b>Conclusions:</b> <i>"Hypertension treatment lowers the relative and absolute risk of cardiovascular morbidity and mortality in women ages 55 years and older and in African American women of all ages. A greater effort should be made to increase awareness and treatment in these groups of women. Although relative risk reductions for cerebrovascular and cardiovascular events are similar for younger and older women, the NNT of younger women is at least 4 times higher. Decisions for treatment of hypertension in younger white women should be influenced by the individual patient's absolute risk of cardiovascular disease."</i></p>
<b>Other systematic reviews</b>			
Beach (2006)	To systematically review evidence concerning the effectiveness of interventions designed to improve the quality of healthcare in racial and ethnic minorities, with a focus on evaluations of interventions targeted at healthcare providers or organizations, as provider and organizational factors contribute substantially to disparities and inequities in access to and quality of healthcare.	<p>English-language reports of evaluations of interventions that addressed one of the specific research questions:</p> <ol style="list-style-type: none"> <li>1. Effectiveness of healthcare quality improvement strategies for racial/ethnic minorities</li> <li>2. Effectiveness of cultural competence training</li> <li>3. Costs of cultural competence training</li> </ol>	<p><b>Question 1:</b></p> <ul style="list-style-type: none"> <li>• 27 articles evaluated strategies targeted at healthcare providers or organizations to improve minority healthcare quality:</li> <li>• The majority of these studies targeted physicians.</li> <li>• Most addressed aspects of prevention.</li> <li>• There is excellent evidence that tracking/reminder systems can improve quality of care and fair evidence that multi-faceted interventions, provider education interventions, and interventions that bypass the physician to offer screening services to racial/ethnic minorities can improve quality of care.</li> </ul> <p><b>Question 2:</b></p> <ul style="list-style-type: none"> <li>• 64 articles addressed cultural competence training as a strategy to improve the quality of healthcare in minority populations; curricula addressed specific or general concepts of culture and were primarily group discussions and lectures.</li> <li>• The lack of consistency in intervention methods and measured outcomes limited the evidence synthesis.</li> <li>• There is excellent evidence for improvement in provider knowledge, good evidence for improvement in provider attitudes and skills, and good evidence for improvement in patient satisfaction.</li> </ul> <p><b>Conclusions:</b> <i>"There is some evidence that interventions to improve quality of healthcare for minorities, including cultural competence training, are effective. More research is needed on quality improvement strategies designed to reduce disparities. For example, interventions should target conditions and healthcare processes for which disparities have been documented. Also needed is more research on cultural competence training that uses rigorous study designs, well-described interventions and measurable objectives that are linked to process and outcome variables. Valid, reliable, and objective measurement of cultural competence is needed. As this literature grows, this information needs continued systematic review, updated on a regular basis and disseminated to clinicians, other healthcare decision-makers, educators, and the medical and health services research community."</i></p>
Shin (2005)	To resolve inconsistencies in the evidence for racial-ethnic matching for African-American and Caucasian-American clients and clinicians in mental health services.	<ul style="list-style-type: none"> <li>• Studies published in peer-reviewed journals</li> <li>• Unpublished studies, e.g., dissertations;</li> <li>• Focus on African-Americans and Caucasian Americans of European heritage</li> <li>• Findings from studies involving mental</li> </ul>	<p>21 articles met criteria. Results by outcomes reported:</p> <ul style="list-style-type: none"> <li>• <b>Retention in treatment:</b> 2/3 studies found that retention was associated with African American clients who were not matched by race-ethnicity with their clinicians. For Caucasian-Americans, being matched to clinicians of the same race-ethnicity tended to reduce dropouts. Combined in a random effects model, matching indicated a non-significant effect toward reducing attrition.</li> <li>• <b>Treatment tenure (average number of sessions attended):</b> African-Americans who were matched tended to remain in treatment longer than those not matched (for two studies, significant at <math>p &lt; 0.05</math>). Combined in random effects model: lack of matching for African-Americans has a small,</li> </ul>

Citation	Objective	Included studies	Results/Conclusions
		<p>health or substance abuse counseling across the country.</p>	<p>non-significant effect on treatment tenure. Caucasians who were matched remained in treatment longer than those who were not matched (two studies had significance at .05 level).</p> <ul style="list-style-type: none"> <li>• <b>Post-treatment functioning status:</b> For African-Americans, clinicians who were not matched gave a more positive functioning assessment than those who were matched; this finding was significant (<math>p &lt; 0.05</math>) in 2/5 studies, although not in the random effects model calculation. One study using client self-assessment reported a non-significant improvement in clients not matched.</li> </ul> <p><b>Conclusions:</b> <i>"a random effects meta-analysis model showed no significant differences between client-clinician dyads matched racially-ethnically and those dyads not matched with respect to overall functioning, service retention, and total number of sessions attended. The finding was consistent for both African-American and Caucasian-American clients....The authors also encourage more complete reporting of data suitable for quantitative research synthesis."</i></p>
<p>Lorenz (2004)</p>	<p>To evaluate:</p> <ul style="list-style-type: none"> <li>• The scope of end-of-life population;</li> <li>• Outcome variables that are valid indicators of the quality of end-of-life experience for the dying person and surviving loved ones;</li> <li>• Patient, family, and healthcare system characteristics associated with better or worse outcomes at end-of-life;</li> <li>• Processes and interventions associated with improved worsened outcomes;</li> <li>• Future research directions for improving end-of-life care.</li> </ul>	<ul style="list-style-type: none"> <li>• Studies in the Western literature related to adult patient or caregiver end-of-life outcomes published Jan or add correct month here 1990-April 2004.</li> <li>• Excluded: studies of chemotherapy, radiotherapy, and similar technical care.</li> </ul>	<p>Total of 24,423 citations identified from all sources. 5,216 went on to abstract review, 911 considered for detailed review, including:</p> <ul style="list-style-type: none"> <li>• 95 systematic reviews;</li> <li>• 134 intervention studies;</li> <li>• 682 observational studies.</li> <li>• Evidence is strongest in cancer, reflecting the degree to which palliative care has been integrated into oncology practice: studies demonstrate strong associations between satisfaction and communication, pain control, practical support, and enhanced care giving.</li> <li>• The review identified high quality measures of QoL, satisfaction, quality of care, and symptoms.</li> <li>• Strong evidence undergirds cancer pain and depression treatment.</li> <li>• Small studies suggest that opioids benefit dyspnea.</li> <li>• Strong evidence supports interventions to improve continuity in cancer and congestive heart failure (CHF) although CHF studies lack generalizability and palliative outcomes.</li> <li>• Inconsistent evidence supports advance care planning, although studies often measure utilization rather than patient and family-centered outcomes.</li> </ul> <p><b>Conclusions:</b> Research priorities include:</p> <ul style="list-style-type: none"> <li>• Characterize the implications of alternative definitions of the "end-of-life";</li> <li>• Test measures in diverse settings and populations;</li> <li>• In studies of satisfaction, emphasize specific processes, especially those less-studied (e.g., non-pain symptoms, spiritual support, and continuity);</li> <li>• Address methodological challenges in measurement;</li> <li>• Conduct studies of the epidemiology and clinical significance of symptoms in non-cancer conditions;</li> <li>• Conduct larger studies of interventions for dyspnea;</li> <li>• Conduct studies of short- as well as long-term treatment for depression;</li> <li>• Conduct studies for caregiving in populations other than cancer and dementia;</li> <li>• evaluate economic and social dimensions of caregiving;</li> <li>• In continuity research, emphasize common settings (e.g., ambulatory care) and studies of nursing home-hospital continuity and involving multiple providers, and</li> <li>• In studies of continuity in CHF, incorporate palliative domains and ensure that studies are generalizable to the sickest patients."</li> </ul>

Citation	Objective	Included studies	Results/Conclusions
Lawrence (2003)	To examine effects of smoking cessation interventions relevant to racial ethnic minority populations	<ul style="list-style-type: none"> <li>Tobacco interventions including behavioral modification component and reporting cessation outcomes (quit rates) in US minority populations</li> <li>1985-2001</li> </ul>	<p>36 studies reporting quit rates:</p> <ul style="list-style-type: none"> <li>African-Americans, 23 studies;</li> <li>Asian/Pacific Islanders, 4 studies;</li> <li>Native Americans, 3 studies;</li> <li>Hispanics, 10 studies;</li> <li>14 papers reported statistically significant results;</li> <li>Abstinence rates varied considerably (0-36%), depending on study design and intervention strategy.</li> </ul> <p><i>Conclusions: "The disproportionate number of studies that focused on African American smokers compared to other major racial/ethnic groups suggests the need for continued efforts to develop and evaluate the effectiveness of smoking cessation interventions for all ethnic minority populations. Abstinence rates varied considerably depending on study design and intervention strategy. Moreover, a relatively small percentage of studies that were randomized trials reported statistically significant findings, and most used strategies that do not reflect current state-of-the-art. These results strongly suggest that more research is needed to identify successful smoking cessation interventions in these populations."</i></p>
Sarkisian (2003)	To identify and examine self-care interventions designed to improve glycemic control or QoL among older African-American, or Latino adults	<ul style="list-style-type: none"> <li>Interventions to change knowledge, beliefs, or behavior among adults who were either older than 55 years, African-American, or Latino;</li> <li>Measurement of outcome of glycemic control or QoL.</li> </ul>	<ul style="list-style-type: none"> <li>12 studies met inclusion criteria (8 RCTs).</li> <li>Among 8 RCTs: 5 reported improved glycemic control in the intervention arm versus control.</li> <li>4 RCTs reported QoL outcomes: one reported improvement in the intervention arm.</li> <li>Characteristics of successful interventions: poor glycemic control at baseline (A1C&gt; 11%); cultural or age-tailoring the intervention; use of group support or counseling; and involvement of spouses or adult children.</li> </ul> <p><i>Conclusions: "Large scale trials designed according to cultural and age criteria specific for older Latino and African-Americans with diabetes are needed to determine how best to address this growing public health problem."</i></p>
Mize (2002)	To evaluate whether interventions are effective in changing risky sexual behaviors among women from different ethnic backgrounds, and also their HIV/AIDS knowledge and self-efficacy	<p>Published, English-language research for the USA evaluating HIV prevention interventions used to modify knowledge, attitudes or behavior relevant to HIV/AIDS risk behavior in women.</p> <p>Excluded: studies not specifically dealing with HIV/AIDS prevention; those targeting only men; mixed-gender studies that did not separately evaluate women; descriptions of prevention programs lacking evaluations; theoretical articles; needs assessments studies that did not provide P-values; studies that included girls under age 14; studies that did not analyze data over at least two time periods</p>	<p>24 articles met inclusion criteria. Results according to outcomes reported:</p> <ul style="list-style-type: none"> <li>HIV/AIDS-related knowledge: significant increase for each ethnicity and time period pairing, except those for which no univariate analyses were conducted (e.g., African-American and Mixed Ethnicity groups at ≥6 months post intervention);</li> <li>Results were more variable for outcomes of self-efficacy and behavior: significant improvements in self-efficacy at post-test and ≥6 months follow up in samples of mixed ethnicities, Hispanic women, and all women combined; for African American women, self-efficacy results were only significant at 6 months after intervention.</li> </ul> <p><i>Conclusions: "HIV prevention interventions are effective at changing knowledge, self-efficacy, and behaviours in women of all ethnicities. This is very encouraging for prevention researchers and workers who can have faith that their interventions help stem the tide of this devastating epidemic."</i></p>
Boulware (2001)	To assess the independent and additive effects of 3 behavioral	<ul style="list-style-type: none"> <li>Peer-reviewed English language articles published January 1970-July</li> </ul>	<ul style="list-style-type: none"> <li>15 studies (4072 subjects) captured the effectiveness of patient-centered counseling, self-monitoring, or structured training.</li> </ul>

Citation	Objective	Included studies	Results/Conclusions
	<p>interventions (counseling, self-monitoring, structured training courses) on blood pressure control</p>	<p>1999</p> <ul style="list-style-type: none"> <li>• Focus on counseling, structured training courses, or self-monitoring.</li> </ul>	<ul style="list-style-type: none"> <li>• Pooled results: counseling was favored over usual care (3.2mmHg; CI, 1.2-5.3) improvement in diastolic blood pressure; 11.1 mmHg; CI, 4.1-18.1) improvement in systolic blood pressure; and training was favored over counseling (10 mmHg; CI, 4.8-15.6) improvement in diastolic; counseling plus training was favored over counseling (4.7mmHg;CI, 1.2-8.2) and afforded more subjects hypertension control (95%; CI, 87-99%) than training alone (64%; CI, 48-77%).</li> </ul> <p><b>Conclusions:</b> <i>"Evidence suggests that counseling offers BP improvement over usual care, and that adding structured training courses to counseling may further improve BP. However, there is not enough evidence to conclude whether self-monitoring of BP or training courses alone offer consistent improvement in BP over counseling or usual care. The magnitude of BP reduction offered by counseling indicates this may be an important adjunct to pharmacologic therapy."</i></p>
<p>Wilkinson (1999)</p>	<p>To examine the impact of specialist models of palliative care on consumer satisfaction, opinion, and preference over the 20 years previous to publication.</p>	<ul style="list-style-type: none"> <li>• Papers which focused on palliative care, regardless of disease type;</li> <li>• Studies conducted in Europe, North America, Australasia, or Israel and published Jan or add month here 1978-June 1998;</li> <li>• In English, German, French, Italian, or Swedish;</li> <li>• Patient or carer satisfaction, preference or opinion as outcome measures;</li> </ul> <p><b>Excluded:</b></p> <ul style="list-style-type: none"> <li>• Personal commentary;</li> <li>• General or public opinion;</li> <li>• Ethical, legal, or religious issues;</li> <li>• Education;</li> <li>• History of palliative care provision;</li> <li>• Individual case history'</li> <li>• Development of research instrument of general cancer care service.</li> </ul>	<ul style="list-style-type: none"> <li>• 83 relevant papers;</li> <li>• Findings from North America did not reveal consistent or reliable trends, due primarily to methodological flaws;</li> <li>• In the UK, consumers were more satisfied with all types of palliative care, whether provided by inpatient units or in the community, than with palliative care provided by general hospitals.</li> <li>• Even though research consistently indicates that consumers appreciate the psychosocial climate in hospices, this research was based on small-scale local studies which were mostly focused on a single hospice.</li> </ul> <p><b>Conclusions:</b> <i>"The dearth of high quality, comprehensive research was notable on the impact on consumer preference, opinion, or satisfaction of hospice home care services and other forms of palliative care in the community...Further research is needed into consumer priorities for patients dying of non-cancer diseases, and into the impact of patient characteristics on consumer satisfaction, opinion, and preference for specialist models of palliative care."</i></p>

Abbreviations:

- CHF, congestive heart failure
- CI, 95% confidence interval
- FU, follow up
- LOS, length of stay
- NNT, number needed to treat
- OR, odds ratio
- QoL, quality of life
- RCT, randomized controlled trial
- RR, relative risk

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## TECHNOLOGY ASSESSMENT PROGRAM

### Mission Statement

To enhance the health of veterans and the nation by providing and fostering technology assessment for evidence-based health care

### Values

***Integrity and pride*** in the work that we do

***Quality*** products that are clinically valid and methodologically transparent

***Objectivity*** in evaluating and presenting research evidence

***Commitment*** to continuous quality improvement and to the guiding principles of evidence based practices

***Flexibility*** in responding to changes in VA and the larger healthcare environment

***Innovation*** in designing products and their dissemination to best meet VA's needs

***Accessibility*** of products and services