Evidence Report /Technology Assessment
Number 90

Strategies for Improving Minority Healthcare Quality

Prepared for:
Agency for Healthcare Research and Quality
U.S. Department of Health and Human Services
540 Gaither Road
Rockville, MD 20850
www.ahrq.gov

Contract No. 290-02-0018

Prepared by:
The Johns Hopkins University Evidence-based Practice Center, Baltimore, MD

Investigators
Mary Catherine Beach, MD, MPH
Lisa A. Cooper, MD, MPH
Karen A. Robinson, MSc
Eboni G. Price, MD
Tiffany L. Gary, PhD
Mollie W. Jenckes, MHS, RN
Aysegul Gozu, MD
Carole Smarth, MD
Ana Palacio, MD
Carolyn J. Feuerstein, BA
Eric B. Bass, MD, MPH
Neil R. Powe, MD, MPH, MBA

AHRQ Publication No. 04-E008-02
January 2004

This report may be used, in whole or in part, as the basis for development of clinical practice guidelines and other quality enhancement tools, or a basis for reimbursement and coverage policies. AHRQ or U.S. Department of Health and Human Services endorsement of such derivative products may not be stated or implied.

AHRQ is the lead Federal agency charged with supporting research designed to improve the quality of health care, reduce its cost, address patient safety and medical errors, and broaden access to essential services. AHRQ sponsors and conducts research that provides evidence-based information on health care outcomes; quality; and cost, use, and access. The information helps health care decisionmakers—patients and clinicians, health system leaders, and policymakers—make more informed decisions and improve the quality of health care services.

Suggested Citation:
Beach MC, Cooper LA, Robinson KA, Price EG, Gary TL, Jenckes MW, Gozu A, Smarth C Palacio A, Feuerstein CJ, Bass EB, Powe NR. Strategies for Improving Minority Healthcare Quality. Evidence Report/Technology Assessment No. 90. (Prepared by the Johns Hopkins University Evidence-based Practice Center, Baltimore, MD.) AHRQ Publication No. 04-E008-02. Rockville, MD: Agency for Healthcare Research and Quality. January 2004.

Preface

The Agency for Healthcare Research and Quality (AHRQ), through its Evidence-Based Practice Centers (EPCs), sponsors the development of evidence reports and technology assessments to assist public- and private-sector organizations in their efforts to improve the quality of health care in the United States. The reports and assessments provide organizations with comprehensive, science-based information on common, costly medical conditions and new health care technologies. The EPCs systematically review the relevant scientific literature on topics assigned to them by AHRQ and conduct additional analyses when appropriate prior to developing their reports and assessments.

To bring the broadest range of experts into the development of evidence reports and health technology assessments, AHRQ encourages the EPCs to form partnerships and enter into collaborations with other medical and research organizations. The EPCs work with these partner organizations to ensure that the evidence reports and technology assessments they produce will become building blocks for health care quality improvement projects throughout the Nation. The reports undergo peer review prior to their release.

AHRQ expects that the EPC evidence reports and technology assessments will inform individual health plans, providers, and purchasers as well as the health care system as a whole by providing important information to help improve health care quality.

We welcome written comments on this evidence report. They may be sent to: Director, Center for Outcomes and Evidence, Agency for Healthcare Research and Quality, 540 Gaither Road, Rockville, MD 20850.

Carolyn M. Clancy, M.D.
Director
Agency for Healthcare Research and Quality

Jean Slutsky, P.A., M.S.P.H.
Acting Director, Center for Outcomes and Evidence

Acknowledgments

We thank Christine Napolitano for data entry and management, as well as for assistance with preparation of the report.

Structured Abstract

Context. The healthcare system in the United States does not provide the same quality of care for ethnic minority populations that it does for the majority white population. Despite awareness of inequities in healthcare quality, little is known about strategies with the potential to improve the quality of healthcare for minority populations.

Objectives. We performed a systematic review of evidence concerning the effectiveness of interventions designed to improve the quality of healthcare in racial or ethnic minorities. Our report focused 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.

Data Sources. Electronic searches of MEDLINE®, the Cochrane Collaboration's CENTRAL Register of Controlled Trials, EMBASE, and three specialty databases were performed. Hand searching of key journals and references lists was also performed. Electronic searching was completed in February 2003 and hand searching was completed to June 15, 2003.

Study Selection. Articles included in this evidence synthesis were English-language reports of evaluations of interventions that addressed one of the specific research questions.

Data Extraction. Pairs of reviewers assessed the study quality and abstracted data for each eligible article. Data were entered into a relational database.

Data Synthesis. Ninety-one articles were identified. Twenty-seven articles evaluated strategies targeted at healthcare providers or organizations to improve minority healthcare quality. The majority of these studies targeted physicians and most addressed aspects of prevention. There is excellent evidence that tracking/reminder systems can improve quality of care, and fair evidence that multifaceted interventions, provider education interventions, and interventions that bypass the physician to offer screening services to racial/ethnic minority patients can improve quality of care. Sixty-four articles evaluated 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. The lack of consistency in intervention methods and measured outcomes limited the evidence synthesis. There is, however, excellent evidence for improvement in provider knowledge, good evidence for improvement in provider attitudes and skills, and good evidence for improvement in patient satisfaction.

Conclusions. 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 interventions specifically 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 the 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.

Contents

Appendixes and Evidence Tables are provided electronically at http://www.ahrq.gov/clinic/epcindex.htm. Scroll through the topic list to select this report.

Agency for Healthcare Research and Quality

Evidence Report/Technology Assessment

Number 90

Strategies for Improving Minority Healthcare Quality

Summary

Introduction

In recent years, it has become clear that the healthcare system in the United States is not providing the same quality of care for ethnic minority populations that it does for the majority white population. Racial and ethnic disparities in access to and quality of healthcare have been extensively documented.[1] The Institute of Medicine report "Unequal Treatment" confirmed that racial and ethnic disparities in healthcare are not entirely explained by differences in access, clinical appropriateness, or patient preferences.[2] There is also increasing evidence that provider behaviors and practice patterns contribute to disparities in care.[3]

Despite extensive documentation of inequities in healthcare quality, little is known about strategies with the potential to improve the quality of healthcare for ethnic minority populations. For those interested in quality improvement, there is a need for an evaluation and synthesis of the strategies that have been shown to be effective in bettering the quality of healthcare for ethnic minorities.

The purpose of this report is to systematically review the evidence to determine the effectiveness of interventions designed to improve the quality of healthcare and/or to reduce disparities for ethnic minorities. It focuses on evaluations of interventions aimed at healthcare providers or organizations, as recent work suggests these factors contribute substantially to the inequities. We examined broadly any type of strategy aimed at improving the quality of care in an ethnic minority population of patients, and then looked more specifically at strategies designed to improve the cultural competence of healthcare providers or organizations.

Methods

The project consisted of engaging technical experts, formulating and refining the specific questions, performing a comprehensive literature search, reviewing the content and quality of the literature, constructing the evidence tables, synthesizing the evidence, and submitting the report for peer review.

The original questions were refined through team discussions, input from internal experts, and review and feedback from the external technical experts to arrive at the questions addressed in this report.

1. What strategies targeted at healthcare providers or organizations have been shown to improve minority healthcare quality?
   a. Which of these strategies have been shown to be effective in reducing disparities in health or in healthcare between minority and white populations?
   b. What are the costs of these strategies?
2. What strategies have been shown to improve the cultural competence of healthcare providers or organizations?
   a. What are the costs of these strategies?

We performed electronic searches of MEDLINE®, the Cochrane Collaboration's CENTRAL Register of Controlled Trials, EMBASE, and the following three specialty databases: the specialized register of Effective Practice and Organization of Care Cochrane Review Group (EPOC), the Research and Development Resource Base in Continuing

Medical Education (RDRB/CME), and the Cumulative Index of Nursing and Allied Health Literature (CINAHL®). No limits were based on type of healthcare provider or specific minority group. Hand searching of key journals and reference lists was also performed. Electronic searching was completed in February 2003, and hand searching was completed to June 15, 2003.

Pairs of reviewers screened articles for eligibility at the abstract level and during review of full-text articles. Articles included in this evidence synthesis were English-language reports of original data that addressed one of the specific research questions. Specific exclusion criteria were developed in consultation with the technical experts. Articles that reported an evaluation of an intervention targeted at a healthcare provider or organization were included.

We assessed study quality and abstracted data from each eligible article. Forms for these tasks, developed in consultation with experts, were pilot tested. The strength of the evidence supporting each question was graded in relation to specific criteria through a consensus process; grades were based on quality, quantity, and consistency of the body of evidence and comprised Evidence Grade A for the best or strongest evidence, to Evidence Grade D for the weakest evidence.

Results

We screened 3,703 articles for eligibility at the abstract review level. From this screening, 288 articles were identified for full-text or article review. At this second level, 68 percent of the articles did not meet eligibility criteria. Therefore, for this report, data were synthesized from 91 eligible articles. Twenty-seven articles addressed the broad research question concerning interventions to improve healthcare quality; 64 articles addressed the specific question of strategies to improve cultural competence. Since the early 1990s there has been a striking increase in the number of articles addressing these questions; 33 percent of the 91 reviewed articles were published after 2000.

Question 1: Effectiveness of healthcare quality improvement strategies for racial/ethnic minorities

Overview of Reviewed Studies

All studies were randomized controlled trials (n=20) or concurrent controlled trials (n=7). Most articles were in the area of prevention (n=19) and most targeted physicians only (n=17). The primary provider intervention was a tracking/reminder system in 10 studies, multifaceted interventions in 9, provider education in 2, bypassing the physician using nurse/nurse practitioners in 2, use of a structured patient questionnaire in 1, use of remote simultaneous translation in 1, use of subspecialty consultation in 1, and use of defibrillators on emergency medical vehicles in 1. Approximately half (n=14) of the studies had a patient intervention component, although these studies varied in whether the patient intervention was provided in addition to the provider intervention or compared with the provider intervention. The intervention was targeted to improve the quality of care specifically for racial/ethnic minorities in only two studies. The most common outcomes were related to healthcare process: appropriateness of care (n=18), quality of providers (n=9), and use of services (n=7).

Quality of Reviewed Studies

Most studies (20 of 27) clearly described healthcare providers and setting, and most (24 of 27) described the intervention sufficiently to ensure replication. Although there were 20 randomized controlled trials, the randomization was considered adequate (in that investigators could not predict assignment) in only 11 studies. Although there were seven concurrent controlled trials, there was one study in which the comparison group was considered inadequate (dissimilar).

Finally, although all studies used objective methods to evaluate outcomes, only nine of 27 had masked outcome assessment, and 13 of 27 performed a pre- and a post intervention evaluation. Approximately half (15 of 27) reported the numbers for and reasons for non-inclusion in the study analysis, and almost all (21 of 27) performed a complete statistical analysis (including the magnitude of difference between groups, an index of variability, and a test statistic).

Results of Reviewed Studies

Twenty-seven articles qualified for review, each of which used a unique combination of intervention methods in a variety of settings and patient populations. For the purpose of synthesis, we have identified the main intervention method. The categorization of the main intervention method is a simplification of what was often a complex intervention strategy.

Tracking/reminder systems. Ten studies used tracking and/or reminder systems to improve quality of care; of these studies, two were in adult general prevention,[4,5] six in adult cancer screening,[5-10] one in tobacco cessation,[11] and one in end-of-life care (completion of advance directives).[12] All ten studies demonstrated positive outcomes, primarily in the appropriateness of care (such as provision of preventive care, tobacco cessation counseling, or advance directive counseling) category. Overall, there is excellent evidence supporting the use of tracking/reminder systems aimed at providers of racial/ethnic minority patients (Evidence Grade A).

Multifaceted interventions. Nine studies used an intervention characterized as multifaceted, meaning that there were two or more main intervention methods.[13-21] Two of these interventions were in adult cancer screening,[13,14] one in tobacco cessation,[15] one in cholesterol reduction,[16] three in mental health,[17-19] one in acute upper respiratory tract infections,[20] and one in asthma.[21] Outcomes of these studies

are mixed, with most studies showing improvements in one or two (but not all) outcomes measured. Overall, there is fair evidence supporting the use of multifaceted interventions aimed at providers of racial/ethnic minority patients (Evidence Grade C).

Bypass the physician. Two studies (both in adult cancer screening) bypassed the physician and had either a nurse or a nurse practitioner offer screening directly to patients,[22,23] and both studies demonstrated improvements in the provision of preventive services to patients. Overall, there is fair evidence supporting the use of bypassing the providers of racial/ethnic minority patients to offer standardized services directly to patients (Evidence Grade C).

Provider education. Two studies used provider education as the main intervention strategy, one in the area of adult general prevention[24] and one in prevention of injuries in children.[25] Both studies demonstrated improvements in provider counseling behaviors,[24,25] but one measured and did not find any effect of the intervention on parent knowledge of injury prevention (the only outcome categorized as efficacy of treatment) or parent adherence to provider advice.[25] Overall, there is fair evidence supporting the use of provider education aimed at providers of racial/ethnic minority patients (Evidence Grade C).

Use of Safe Times Questionnaire (STQ). One study (in the area of prevention in children) used a structured questionnaire to assess adolescent health behaviors and demonstrated a positive impact on providers' counseling behaviors.[26] Overall, there is poor evidence supporting the use of structured questionnaires for racial/ethnic minority patients (Evidence Grade D).

Use of Remote Simultaneous Translation (RST). One study compared the accuracy of translation and quality of patient-physician communication by using remote simultaneous and proximate consecutive interpretation and found fewer translation errors and greater patient and physician satisfaction.[27] Overall, there is poor evidence supporting the use of RST for racial/ethnic minority patients (Evidence Grade D).

Use of specialty consult. One study evaluated the use of nephrology consults for patients with chronic kidney disease and found no effect on health care process or patient outcomes.[28] Overall, there is poor evidence supporting the use of specialty consults aimed at providers of racial/ethnic minority patients (Evidence Grade D).

Use of defibrillators on emergency medical services. One study evaluated the use of defibrillators on emergency medical services and found no effect on patient outcomes.[29] Overall, there is poor evidence supporting the use of defibrillators on emergency medical services (Evidence Grade D).

Results for Question 1a: Strategies to Reduce Disparities

Only one study specifically addressed the question of whether an intervention could reduce disparities in healthcare quality between minorities and white persons.[18] The study, in which two different culturally tailored interventions to improve the quality of depression care were evaluated and compared to a control group that received no intervention, had mixed results. There was no differential effect of the interventions on healthcare process for white versus minority patients; all patients (African American, Latino, and white) in the intervention groups were more likely than patients in the control group to receive appropriate therapy. However, there was a mixed effect on health outcomes: there were improvements for African-American and Latino patients in the rate of depression compared with controls (with no improvement for white patients), whereas there were no improvements for African-American and Latino patients in the intervention groups in employment rates compared with controls (with improvement for white patients). Overall, there is poor evidence to determine which interventions might reduce disparities between racial/ethnic minority patients and majority patients (Evidence Grade D).

Results for Question 1b: Costs of Quality Improvement for Racial/Ethnic Minorities

Only one study reported on the costs of an intervention aimed at improving the quality of healthcare for racial/ethnic minority persons.[28] This study, which provided case management and nephrology consultation for patients with chronic renal insufficiency, estimated a minimum yearly cost of $89,355 in 1998 (or $484 per intervention patient) and it was unable to demonstrate any health benefits in its participants. Overall, there is poor evidence to determine the cost of strategies to improve the quality of care for racial/ethnic minorities (Evidence Grade D).

Question 2: Effectiveness of cultural competence training

Overview of Reviewed Studies

Of the 64 articles that qualified for our review, only two described randomized controlled trials, eight studies were concurrent controlled trials, and four had an external (non-concurrent) control group. Most studies were designed without a comparison group; these had either a postintervention evaluation only (n=25), a pre- and a postintervention evaluation (n=20), or a qualitative evaluation (n=5). Most of the interventions targeted nurses (n=32) or physicians (n=19).

The content of the curricular interventions varied. Using a previously developed framework to categorize cultural competence curricular content,[30] we found that most interventions focused on specific cultural content (n=45), general concepts of culture (n=43), language (n=15), and

patient-provider interaction (n=13). In terms of the specific ethnic minority groups that were the focus of the interventions, 20 studies mentioned Hispanic persons; 19, African Americans; 16, Asians/Pacific Islanders; and 5, American Indians.

Most interventions used more than one training method, and no two studies used exactly the same methods. The most common training methods were group discussion (n=29) and lectures (n=29). Most studies used more than one method for evaluation; the most common method was provider self-assessment forms (used in 33 studies). Only four articles attempted to measure patient outcomes. Most included some measure of provider outcome; attitude (n=44), knowledge (n=30), or skills/behaviors (n=22).

Quality of Reviewed Studies

Notably, less than half (n=27) of the studies had an objective outcome assessment; only one third (n=21) included enough detail about the intervention to ensure replication; only 17 of the interventions were developed with a theoretical model; only 21 studies clearly described the targeted healthcare providers, setting, and dates of study; only 15 had a complete statistical analysis; only 14 included the numbers and reasons for non-inclusion in the study analysis; only eight had an adequate comparison group (concurrent and similar); only two had masking of outcome assessors; and only one had adequate randomization.

Results of Reviewed Studies

In our results below, we focus on the 34 studies with the strongest study design (studies that either had a comparison group and/or did a pre- and postintervention evaluation). We do not focus on articles that described interventions evaluated qualitatively or with only a post-test.

Knowledge. Of the 19 studies that evaluated the effect of cultural competence training on the knowledge of healthcare providers, 17 demonstrated a positive effect, one study showed no effect, and one study demonstrated a partial/mixed effect. Eleven of these studies tested the provider's knowledge about general cultural concepts, seven evaluated culture-specific knowledge, and one did not provide details to allow determination of content. There was no obvious pattern regarding which type of knowledge was enhanced by cultural competence training. Overall, there is excellent evidence to suggest that cultural competence training increases the knowledge of healthcare providers (Evidence Grade A).

Attitudes. Of the 25 studies that evaluated the effect of cultural competence training on the attitudes of healthcare providers, 21 demonstrated a positive effect, one showed no effect, and three showed a partial/mixed effect. The most common attitude outcome measured was cultural self-efficacy (measured in three studies), but other types of attitudes were greater understanding of the impact of sociocultural issues on the patient-physician relationship, more positive attitudes toward community health issues, and an increased interest in learning about patient and family backgrounds. Overall, there is good evidence to suggest that cultural competence training favorably affects the attitudes of healthcare providers (Evidence Grade B).

Skills. Of the 14 studies that evaluated the effect of cultural competence training on the skills of healthcare providers, all demonstrated a positive effect. For example, in one study, participants were given 16 one-hour sessions in which they practiced communication skills with the community volunteers. They were subsequently shown to be significantly more competent in interviewing a non-English-speaking person as rated by a masked psychologist who viewed videotapes of interviews. Other types of skills/behaviors improvements were an increase in nurses' involvement in community-based cancer education programs, an increase in self-reported social interactions with peers of different races/ethnicities, and an improved ability of participants to conduct a behavioral analysis and treatment plan. Overall, there is good evidence to suggest that cultural competence training favorably affects the skills/behaviors of healthcare providers (Evidence Grade B).

Patient outcomes. Only three articles evaluated patient outcomes: one targeted physicians,[31] one targeted mental health counselors,[32] and one targeted a mixed group of providers.[33] All three reported favorable patient satisfaction measures,[31-33] and one demonstrated improved adherence to follow-up among patients assigned to the intervention group providers.[32]

In terms of the methods used to bring about such improvements in patient satisfaction and (in one case) adherence, one study trained four mental health counselors about the attitudes that low-income, African-American women bring to counseling (4 hours total),[32] another trained nine physicians to speak Spanish (20 hours total),[31] and a third implemented a state-mandated, 3-day training program focused on team training, recipient recovery principles, clinical issues, and cultural competence for all staff who have contact with recipients of inpatient mental healthcare.[33] Overall, there is good evidence that cultural competence training improves patient satisfaction (Evidence Grade B) and poor evidence that it affects patient adherence or health outcomes (Evidence Grade D).

Results for Question 2a: Costs of Cultural Competence Training

Of the 55 articles eligible for review, only five addressed the costs of cultural competence training.[31,34-37] Four of the five[34-37] described the costs of interventions that involved international travel. In all cases students paid for some portion of the trip, while the school or program paid $0 to $2,000. There are limited data on the costs of classroom or other types of instruction. One study estimated the cost of 20 total hours of Spanish-language instruction for nine physicians to be

$2,000 in 2000, not including the opportunity costs for physician time (approximately 20 hours total for each physician).[31] In another program, 60 hours of classroom instruction (20 hours of Spanish-language instruction and 40 hours of cultural competence training focused on Hispanic populations) provided for 19 students had an estimated local cost of $3,000 in 1994, of which each student contributed $80.[36] Finally, one program matched involved matching 26 students to 26 local ethnically diverse families, asked the students to visit the family six times, and paid each family $400 in 1996-2000.[35] Overall, there is poor evidence to determine the costs of cultural competence training (Evidence Grade D).

Discussion

Question 1. Effectiveness of healthcare quality improvement interventions for racial/ethnic minorities

There is excellent evidence that provider tracking/reminder systems are effective in improving the quality of care for racial/ethnic minority patients (Evidence Grade A), fair evidence that multifaceted interventions, provider education interventions, and interventions which bypass the physician to offer screening services to racial/ethnic minority patients can improve quality of care (Evidence Grade C), and insufficient evidence for the use of any of the studied interventions (Evidence Grade D). Notably, however, two types of interventions had favorable results (employed in one study each, thus receiving an evidence grade of D) that may be worthy of further study: use of remote simultaneous translation for patients with limited English proficiency and the use of the Safe Times Questionnaire for health behavior risk assessment in adolescents.

There is poor evidence to determine which strategies are most effective in reducing disparities between ethnic minority and white populations (Evidence Grade D). The only study specifically designed to do this had mixed results with improvements in only one of the two outcomes assessed.[18] There is poor evidence to determine the costs of strategies to improve care and reduce disparities for ethnic minority populations (Evidence Grade D).

Question 2. Effectiveness of cultural competence training

There is excellent evidence to suggest that cultural competence training can increase the knowledge of healthcare providers (Evidence Grade A), and good evidence that cultural competence training can improve the attitudes and skills of healthcare providers (Evidence Grade B). However, the studies are heterogeneous (no two studies used exactly the same intervention methods), and it is difficult to conclude which specific types of training interventions are effective in improving particular outcomes. Even within an outcome category, there is no uniformity in outcome measurement, thus making it difficult to determine which specific types of knowledge, attitudes, or skills are affected by cultural competence training.

There is good evidence from three studies to suggest that cultural competence training can favorably affects patient satisfaction (Evidence Grade B) and poor evidence that cultural competence training can affect patient adherence (Evidence Grade D), although the one study that examined patient adherence demonstrated a positive impact. There are no studies that have evaluated patient health outcomes.

There is poor evidence to determine the cost of cultural competence training (Evidence Grade D). One of the studies demonstrated an improvement in patient satisfaction also included information about cost, and so perhaps the best evidence is found in that study, which estimated a cost of $2,000 to train nine emergency department physicians in the Spanish language.[31]

Limitations of Report and Literature

General Limitations

This review was limited to reports published in English (after 1980), as our resources did not permit extensive searching of the non-English-language and "gray" literature. Consequently, publication bias is possible. However, recent work has suggested that results of reviews with these limits do not differ substantially from reviews with no such limits.[38] Only studies that specifically presented data on racial/ethnic minorities were included.

Limitations of Report and Literature for Question 1

There were limited numbers of studies in each clinical category (except prevention), and few studies focused on priority conditions for which there are documented healthcare disparities (such as HIV/AIDS, cardiovascular disease, diabetes mellitus, and infant mortality). The majority of interventions (all but two) were generic improvement interventions targeted at providers of racial/ethnic minority patients; they did not necessarily target those aspects of care for which there are demonstrated disparities between minority and nonminority populations.

Some of the targeted processes of care were not evidence-based practices for any patient population (such as oral cavity exams or breast self-examinations for cancer screening) and thus would be unlikely to improve the quality of care or reduce disparities for racial/ethnic minority patients. Most studies measured health processes, rather than patient outcomes. This characteristic poses a significant limitation for studies that targeted processes of care not already linked to patient outcomes (that is, not evidence-based).

Evaluating the effectiveness of specific interventions was challenging for several reasons. Each study used slightly different intervention methods, thereby making generalizations across studies difficult. The studies used multicomponent interventions and did not examine separate components.

Very few studies involved Hispanic populations, and none included American Indians/Alaska Natives or Asians/Pacific Islanders. Most studies had no data on costs.

Only interventions targeting providers/organizations were included in this review. Although targeting patients directly may be a promising strategy to improve quality of care and reduce racial/ethnic disparities, such interventions are not reflected here. Only randomized controlled trials and concurrent controlled trials were included; there may be other worthwhile interventions that have been evaluated with other study designs.

Eligibility for our review was limited to studies in the United States, even though there may have been other promising studies conducted in other countries. Finally, we made no assessment of the generalizability of the population of providers targeted in these studies to the broader population of providers caring for racial/ethnic minorities.

Limitations of Report and Literature for Question 2

There are no standardized instruments for measuring cultural competence, and very few outcome assessments were objectively measured. Often there were no data concerning the psychometric properties of the instruments used for evaluation, and most studies were designed without a comparison group for evaluation.

Many articles did not describe the curricular interventions well enough to ensure replication. Furthermore, each curricular intervention was different, making generalizability across studies difficult.

Few studies measured patient outcomes, and none measured healthcare process quality indicators. Some studies used curriculum evaluation as the only outcome. Finally, most studies did not include data on costs.

We made no attempt to assess the psychometric properties of the instruments used to measure cultural competence. Our review focused on interventions aimed at the education of healthcare providers, rather than on an evaluation of all possible organizational strategies to provide culturally and linguistically appropriate services.

Future Research

Research on Improving the Quality of Care and Reducing Disparities for Racial/Ethnic Minorities

More research designed specifically to reduce demonstrated racial/ethnic disparities in healthcare quality is needed. It is necessary to distinguish between interventions aimed at improving the quality of care for all persons and those aimed specifically at improving quality of care for racial/ethnic minorities (such as reducing provider bias). More quality improvement interventions are needed that focus on priority conditions for which there are documented health disparities (e.g., infant mortality, cardiovascular disease, diabetes mellitus, and HIV/AIDS). For generic quality improvement interventions done in mixed populations, there should be subgroup analyses to gauge the effect of the interventions on equality of treatment for racial/ethnic minorities.

Several gaps in the current literature need to be filled. More studies are needed in acute care and specialty settings and also among Asian/Pacific Islander, American Indian/Alaska Native, and Hispanic populations. More information is needed about the costs of various strategies to improve healthcare quality and reduce racial/ethnic disparities. In general, studies ought to include patient outcomes, have longer follow-up, and link processes of care to health outcomes. There is a need to replicate promising intervention strategies in different healthcare settings and organizations.

The literature is evolving rapidly, and updated evidence assessments will be necessary soon. Funding for that research is needed.

Research on Cultural Competence

Curricular objectives need to be measurable and linked to outcomes that can be measured objectively. There is a dire need for standardized, reliable, and valid instruments to measure aspects of cultural competence. Studies should also measure the effect of the curricular interventions on healthcare process and patient outcomes. For the results to be meaningful, studies need to have a pre- and postintervention evaluation and/or a comparison group; there is certainly a need for more randomized controlled trials in this area.

Researchers should comprehensively describe the curricular interventions, such that they can be replicated in different settings. Studies also ought to include more comprehensive information about resources needed and the cost of cultural competence training.

Knowledge on this topic is evolving rapidly, and updated evidence assessments will be needed in the near future.

Availability of the Full Report

The full evidence report from which this summary was taken was prepared for the Agency for Healthcare Research and Quality (AHRQ) by the Johns Hopkins University Evidence-based Practice Center, Baltimore, MD, under Contract No. 290-02-0018. The full report is expected to be available in January 2004. At that time, printed copies may be obtained free of charge from the AHRQ Publications Clearinghouse by calling 800-358-9295. Requesters should ask for Evidence Report/Technology Assessment No. 90, *Strategies for Improving Minority Healthcare Quality*. In addition, Internet users will be

able to access the report and this summary online through AHRQ's Web site at www.ahrq.gov

Suggested Citation

Beach MC, Cooper LA, Robinson KA, Price EG, Gary TL, Jenckes MW, Gozu A, Smarth C, Palacio A, Feuerstein CJ, Bass EB, Powe NR. *Strategies for Improving Minority Healthcare Quality.* Summary, Evidence Report/Technology Assessment No. 90. (Prepared by the Johns Hopkins University Evidence-based Practice Center, Baltimore, MD.) AHRQ Publication No. 04-E008-01. Rockville, MD: Agency for Healthcare Research and Quality. January 2004.

References

1. Mayberry RM, Mili F, Ofili E. Racial and ethnic differences in access to medical care. Med Care Res Rev 2000; 57 Suppl 1: 108-45.
2. Smedley BD, Stith AY, Nelson AR. Unequal Treatment: Confronting racial and ethnic disparities in health care. Committee on Understanding and Eliminating Racial and Ethnic Disparities in Health Care. Washington (DC): Institute of Medicine; 2003.
3. van Ryn M. Research on the provider contribution to race/ethnicity disparities in medical care. Med Care 2002; 40(1 Suppl): I140-51.
4. McDonald CJ, Hui SL, Smith DM, et al. Reminders to physicians from an introspective computer medical record. A two-year randomized trial. Ann Intern Med 1984; 100(1): 130-8.
5. Turner BJ, Day SC, Borenstein B. A controlled trial to improve delivery of preventive care: physician or patient reminders? J Gen Intern Med 1989; 4(5): 403-9.
6. Burack RC, Gimotty PA. Promoting screening mammography in inner-city settings. The sustained effectiveness of computerized reminders in a randomized controlled trial. Med Care 1997; 35(9): 921-31.
7. Burack RC, Gimotty PA, George J, et al. How reminders given to patients and physicians affected pap smear use in a health maintenance organization: results of a randomized controlled trial. Cancer 1998; 82(12): 2391-400.
8. Burack RC, Gimotty PA, George J, et al. The effect of patient and physician reminders on use of screening mammography in a health maintenance organization. Results of a randomized controlled trial. Cancer 1996; 78(8): 1708-21.
9. Burack RC, Gimotty PA, George J, et al. Promoting screening mammography in inner-city settings: a randomized controlled trial of computerized reminders as a component of a program to facilitate mammography. Med Care 1994; 32(6): 609-24.
10. Burack RC, Gimotty PA, Simon M, et al. The effect of adding Pap smear information to a mammography reminder system in an HMO: results of randomized controlled trial. Prev Med 2003; 36(5): 547-54.
11. Ahluwalia LS , Gibson CA, Kenney RE, et al. Smoking status as a vital sign. J Gen Intern Med 1999; 14: 402-408.
12. Dexter PR, Wolinsky FD, Gramelspacher GP, et al. Effectiveness of computer-generated reminders for increasing discussions about advance directives and completion of advance directive forms. A randomized, controlled trial. Ann Intern Med 1998; 128(2): 102-10.
13. Dietrich AJ, O'Connor GT, Keller A, et al. Cancer: improving early detection and prevention. A community practice randomised trial. BMJ 1992; 304(6828): 687-91.
14. Manfredi C, Czaja R, Freels S, et al. Prescribe for health. Improving cancer screening in physician practices serving low-income and minority populations. Arch Fam Med 1998; 7(4): 329-37.
15. Allen B Jr, Pederson LL, Leonard EH. Effectiveness of physicians-in-training counseling for smoking cessation in African Americans. J Natl Med Assoc 1998; 90(10): 597-604.
16. Keyserling TC, Ammerman AS, Davis CE, et al. A randomized controlled trial of a physician-directed treatment program for low-income patients with high blood cholesterol: the Southeast Cholesterol Project. Arch Fam Med 1997; 6(2): 135-45.
17. Burge SK, Amodei N, Elkin B, et al. An evaluation of two primary care interventions for alcohol abuse among Mexican-American patients. Addiction 1997; 92(12): 1705-16.
18. Miranda J, Duan N, Sherbourne C, et al. Improving care for Minorities: Can Quality Improvement Interventions Improve Care and Outcomes for Depressed Minorites? Results of a Randomized, Controlled Trial. Health Serv Res 2003; 38(2): 613-630.
19. Callahan CM, Hendrie HC, Dittus RS, et al. Improving treatment of late life depression in primary care: a randomized clinical trial. J Am Geriatr Soc 1994; 42(8): 839-46.
20. Harris R, Mackenzie T, Leeman-Castillo B, et al. Optimizing antibiotic prescribing for acute respiratiory tract infections in an urban urgent care clinic. J Gen Intern Med 2003; 18: 326-334.
21. Evans D, Mellins R, Lobach K, et al. Improving care for minority children with asthma: professional education in public health clinics. Pediatrics 1997; 99(2): 157-64.
22. Mandelblatt J, Traxler M, Lakin P, et al. A nurse practitioner intervention to increase breast and cervical cancer screening for poor, elderly black women. J Gen Intern Med 1993; 8(4): 173-8.
23. McCarthy BD, Yood MU, Bolton MB, et al. Redesigning primary care processes to improve the offering of mammography. The use of clinic protocols by nonphysicians. J Gen Intern Med 1997; 12(6): 357-63.
24. Gemson DH, Ashford AR, Dickey LL, et al. Putting prevention into practice. Impact of a multifaceted physician education program on preventive services in the inner city. Arch Intern Med 1995; 155(20): 2210-6.
25. Gielen AC, Wilson ME, McDonald EM, et al. Randomized trial of enhanced anticipatory guidance for injury prevention. Arch Pediatr Adolesc Med 2001; 155(1): 42-9.
26. Schubiner H, Tzelepis A, Wright K, et al. The clinical utility of the Safe Times Questionnaire. J Adolesc Health 1994; 15(5): 374-82.
27. Hornberger JC, Gibson CD Jr, Wood W, et al. Eliminating language barriers for non-English-speaking patients. Med Care 1996; 34(8): 845-56.
28. Harris LE, Luft FC, Rudy DW, et al. Effects of multidisciplinary case management in patients with chronic renal insufficiency. Am J Med 1998; 105(6): 464-71.
29. Kellermann AL, Hackman BB, Somes G, et al. Impact of first-responder defibrillation in an urban emergency medical services system. JAMA 1993; 270(14): 1708-13.
30. Dolhun EP, Muñoz C, Grumbach K. Cross-cultural Education in U.S. Medical Schools: Development of an Assessment Tool. Acad Med 2003; 78(6): 615-22.
31. Mazor SS, Hampers LC, Chande VT, et al. Teaching Spanish to pediatric emergency physicians: Effects on patient satisfaction. Arch Pediatr Adolesc Med 2002; 156(7): 693-695.
32. Wade P, Berstein B. Culture sensitivity training and counselor's race: effects on black female client's perceptions and attrition. J Couns Psychol 1991; 38: 9-15.

33. Way BB, Stone B, Schwager M, et al. Effectiveness of the New York State Office of Mental Health Core Curriculum: Direct care staff training. Psychiatr Rehabil J 2002; 25(4): 398-402.
34. Godkin MA, Savageau JA. The effect of a global multiculturalism track on cultural competence of preclinical medical students. Fam Med 2001; 33(3): 178-86.
35. Haq C, Rothenberg D, Gjerde C, et al. New world views: preparing physicians in training for global health work. Fam Med 2000; 32(8): 566-72.
36. Nora LM, Daugherty SR, Mattis-Peterson A, et al. Improving cross-cultural skills of medical students through medical school-community partnerships. West J Med 1994; 161(2): 144-7.
37. Rolls C, Inglis A, Kristy S. Study abroad programs: creating awareness of and changing attitudes to nursing, health and ways of living in other cultures. Contemp Nurse 1997; 6(3-4): 152-6.
38. Egger M, Juni P, Bartlett C, et al. How important are comprehensive literature searches and the assessment of trial quality in systematic reviews? Empirical study. Health Technol Assess 2003; 7(1): 1-76.

www.ahrq.gov
AHRQ Pub. No. 04-E008-1
January 2004
ISSN 1530-440X

Evidence Report

Chapter 1: Introduction

In recent years, it has become clear that the healthcare system in the United States does not provide the same quality of care for minority populations that it does for the majority white population. Racial and ethnic disparities in access to and quality of healthcare have been extensively documented.[1] The Institute of Medicine (IOM) report "Unequal Treatment" confirmed that racial and ethnic disparities in healthcare are not entirely explained by differences in access, clinical appropriateness, or patient preferences.[2] There is also increasing evidence that provider behaviors and practice patterns contribute to disparities in care.[3] Moreover, researchers assert that variations in healthcare organizational processes compromise quality and that healthcare disparities signal a potentially ripe area for quality improvement.[4]

Despite awareness of inequities in healthcare quality, little is known about strategies with the potential to improve the quality of healthcare for ethnic minority populations. For those interested in quality improvement, there is a need for an evaluation and synthesis of the strategies proved to be effective in bettering the quality of healthcare for minorities. Moreover, it is unknown whether strategies specifically designed to reduce disparities in healthcare between racial/ethnic minorities and whites have been implemented successfully. One empirical question is whether interventions incorporating quality improvement strategies with documented efficacy for the general population are sufficient to improve quality of care for minorities and reduce disparities, or whether interventions must be specifically targeted to ethnic minority populations in order to improve quality and achieve equity. It has been suggested that cultural competence on the part of healthcare providers and organizations may be one such targeted strategy,[5] but with the exception of one recent systematic review of healthcare system interventions[6] the effectiveness of cultural competence initiatives targeting healthcare providers has not been systematically evaluated.

The purpose of this report is to systematically review the evidence to determine the effectiveness of interventions designed to improve the quality of healthcare and/or to reduce disparities for racial/ethnic minorities. Our report focuses on evaluations of interventions aimed at healthcare providers or organizations, as recent work suggests provider and organizational factors contribute substantially to the inequities. We began broadly by examining any type of strategy aimed at improving the quality of care in a racial/ethnic minority population of patients, and then we looked specifically at strategies designed to advance the cultural competence of healthcare providers or organizations. This evidence report was requested by the National Quality Forum (NQF) to address recommended priority actions that were outlined in its report "Improving Healthcare Quality for Minority Patients."[7]

Chapter 2: Methodology

The National Quality Forum (NQF) requested an evidence report on strategies for improving minority healthcare quality. In September 2002, the Agency for Healthcare Research and Quality (AHRQ) awarded a contract to the Johns Hopkins University Evidence-based Practice Center (EPC) to prepare an evidence report on this topic. We established a team and work plan to develop a report that would identify and synthesize the best available evidence on strategies shown to improve minority healthcare quality. The project consisted of recruiting technical experts, formulating and refining the specific questions, performing a comprehensive literature search, reviewing the content and quality of the literature, constructing the evidence tables, synthesizing the evidence, and submitting the report for peer review.

Recruitment of Technical Experts and Peer Reviewers

We recruited technical experts to provide input during the project, four of whom were experts from the Johns Hopkins University and had expertise in public health, quality improvement, physician-patient communication, and nursing. We recruited five external technical experts who had a special interest in improving minority healthcare quality and represented different perspectives including academic medical centers, professional societies and foundations (see Appendix D). We requested specific feedback from the partner (NQF) and from the internal and external technical experts for key decisions, such as selection and refinement of the questions.

We also sought comprehensive feedback on the draft evidence report from the partner, technical experts, and other peer reviewers. Similar to the technical experts, the other peer reviewers were recruited from a variety of organizations and included those based in universities, professional societies and foundations. Experts and peer reviewers were identified by team members in consultation with internal experts and AHRQ. (See Appendix D for a list of experts and peer reviewers.)

Questions

The original questions were refined through team discussions, input from internal experts, and review and feedback from the external technical experts. Listed below are the questions addressed in this report.

1. *What strategies targeted at healthcare providers or organizations have been shown to improve minority healthcare quality?*
    a. *Which of these strategies have been shown to be effective in reducing disparities in health or in healthcare between minority and white populations?*
    b. *What are the costs of these strategies?*
2. *What strategies have been shown to improve the cultural competence of healthcare providers or organizations?*

Note: Appendixes and Evidence Tables cited in this report are provided electronically at http://www.ahrq.gov/clinic/epcindex.htm.

a. What are the costs of these strategies?

Components of these questions were further defined for use in our review. Minority was defined as all non-Caucasian or non-white racial and ethnic categories, including, but not limited to, African American, Hispanic, American Indian/Alaska Native, and Asian/Pacific Islander. All clinicians were considered healthcare providers. This category included dentists, dental assistants, nurses, nurse assistants, physicians, physician assistants, pharmacists, mental health workers, community healthcare workers, social workers, and others such as alternative healers. For the purposes of this review, our research questions were meant to include any health professional or healthcare organization that provides health services to patients.

Analytic Framework

We used a conceptual model developed by Cooper and colleagues to create an analytic framework for our research questions.[8] Below, we describe in detail the elements of the model (Figure 1) and its use in the report.

In 1993, the Institute of Medicine's (IOM) Committee on Monitoring Access to Personal Health Services set out to resolve many conceptual problems in the definitions of equitable access to health care. The Committee developed a model that provided a useful starting point for the conceptual framework that is used in this report.[2] Indicators in this model are grouped according to barriers (personal, structural, and financial) that cause underuse of services and mediators (such as appropriateness or efficacy of treatment received, quality of provider skills, or patient adherence) that affect health outcomes and equity of services.

Cooper and colleagues modified the Institute of Medicine's access model to provide more specific directions for designing and implementing effective interventions to eliminate healthcare disparities.[8] They expanded the scope of personal and structural barriers, specified utilization measures to include the type of setting, provider, and procedure, incorporated provider communication skills and cultural competence as measures of the quality of providers (a mediator in the original IOM model), and included patient views of care or patient-centeredness (a component of healthcare quality from Crossing the Quality Chasm) as important outcome measures.[9]

Specifically, they included additional personal barriers/facilitators documented in recent research on disparities to differentiate between the quality of healthcare received by patient race/ethnicity or to determine differences on the use of health services or in health outcomes for whites and ethnic minorities. These variables include family structure, patient preferences and expectations of treatment, patient involvement in medical decision-making, personal health behaviors, beliefs about health and disease, and health literacy.[2]

Cooper and colleagues also included structural barriers/facilitators within the system in their refined version of the IOM model. For example, in addition to the availability of care, how care is organized, and transportation, they included level of difficulty in getting any appointments at all with primary care physicians and specialists and the timeliness of appointments.[10] A rationale for including these structural barriers or facilitators to health service utilization is provided by recent work showing that minority patients seen in primary care settings report more difficulty getting an appointment and waiting longer during appointments, even after adjustment

for sociodemographic and health status characteristics.[11]

The IOM's access model included a category for mediators. A mediator is a variable (intermediate, contingent, intervening, causal) that occurs in a causal pathway from an independent to a dependent variable. It causes variation in the dependent variable (outcomes), and it is also caused to vary by the independent variable (barriers and facilitators). Health service use and quality of care variables are mediators between barriers/facilitators and health outcomes. Because studies of healthcare disparities document that ethnic minority patients are often cared for by physicians with poorer indicators of technical quality (such as lower procedure volume rates and higher risk-adjusted mortality rates) and that interpersonal care, including patient-provider communication, differs by patient ethnicity and by ethnic concordance in the patient-provider relationship,[12] Cooper and colleagues expanded the quality of providers (a mediator between barriers and outcomes of care) to include technical skills, interpersonal/communication skills, medical knowledge, and cultural and linguistic competence.

Appropriateness of care, one of the categories of mediators, was conceptualized as the degree to which the care delivered to patients is consistent with current standards of care (for example, beta-blocker use for acute myocardial infarction, or guideline-concordant care for major depression). Efficacy of treatment, in contrast, was conceptualized as the degree to which a specific intervention, procedure, regimen, service, or treatment produces beneficial results under ideal circumstances.[13] For example, patient knowledge about injury prevention might be considered a measure of the efficacy of a provider intervention targeting patient education and counseling skills regarding injury prevention. Patient adherence to recommended treatment (e.g., medication refills, health behavior modification, appointment-keeping) is another healthcare process measure. We included all mediators from Cooper's model in a broad category of healthcare system processes. Finally, in addition to health status and equity of services, Cooper and colleagues included patient views about healthcare, including their attitudes toward and experiences with care and satisfaction, since these have emerged as important outcomes that may differ by race, ethnicity, social class, and language.[14]

Interventions to improve quality of care and to eliminate racial and ethnic disparities in healthcare might address a number of personal, structural, or financial barriers/facilitators and healthcare system processes from our conceptual model. Ideally, the intervention should target factors known to contribute to disparities in healthcare quality. For example, an intervention to eliminate racial disparities in cardiovascular procedure use might focus on patient preferences, patient-provider communication, and provider knowledge of treatment guidelines. An intervention to eliminate racial disparities in mental health care might target patient attitudes, such as stigma or fear of medications, primary care provider skills in recognition of mental health problems, or structural barriers such as the availability of case managers to improve coordination of care between primary care and mental health treatment settings.

Our conceptualization of cultural competence deserves further attention, since Question 2 in this report specifically addresses the state of the evidence regarding interventions targeting cultural and linguistic competence. No single definition of cultural competence is universally accepted. However, several definitions currently in use share the requirement that healthcare professionals adjust and recognize their own culture in order to understand the culture of the patient.[15] Lack of cultural and linguistic competence can be conceptualized in terms of organizational, structural, and clinical (interpersonal) barriers to care.[5] The Office of Minority

Health defines cultural competence as the ability of healthcare providers and healthcare organizations to understand and respond effectively to the cultural and linguistic needs of patients.[16] At the patient-provider level, cultural competence may be defined as the ability of individuals to establish effective interpersonal and working relationships that overcome cultural differences.[12] The Liaison Committee on Medical Education includes the need for medical students to recognize and address personal biases in their interactions with patients among their objectives for cultural competence training.[17] Medical educators have defined eight content areas (general cultural concepts, racism and stereotyping, physician-patient relationships, language, specific cultural content, access issues, socioeconomic status, and gender roles and sexuality) that are taught within a commonly accepted rubric of cross-cultural education curricula.[18] We conceptualized cultural competence interventions as those targeting the relevant provider knowledge, attitudes, and skills (healthcare system mediators in our conceptual model).

In addressing our research questions, we acknowledge the potential for a conceptual overlap in interventions targeting quality of care broadly and those targeting cultural competence specifically. There may also be an overlap in interventions that are targeting an organization broadly and those that are targeting providers specifically. One example of this overlap would be an intervention that incorporates interpreter services. While one might consider interpreter services to be an organizational quality improvement strategy that targets structural barriers to care, this type of intervention also affects healthcare system mediators at the provider level, including patient-provider communication and provider cultural competence.

Figure 1 shows the elements of the model addressed by the studies included in the systematic review. We circled the major categories of healthcare system processes that were targeted by the interventions included in the articles that were eligible for our systematic review.

Literature Search Methods

The process of searching the literature included identifying reference sources, formulating a search strategy for each source, and executing and documenting each search.

Sources

Our search plan included electronic and hand searching. Several electronic databases were searched. In February 2003, we searched MEDLINE®, the Cochrane CENTRAL Register of Controlled Trials (Issue 1, 2003), EMBASE, and the following three specialty databases: the specialized register of Effective Practice and Organization of Care Cochrane Review Group (EPOC) which contains studies that report objective measures of professional performance, patient outcomes or resource utilization identified through extensive electronic and hand searching; the Research and Development Resource Base in Continuing Medical Education (RDRB/CME) a Web accessed database of materials concerning program evaluation, physician performance, change, and healthcare outcomes identified through electronic and hand searching; and the Cumulative Index of Nursing and Allied Health Literature (CINAHL®).

Hand searching for possibly relevant citations took several forms. First, priority journals were identified through an analysis of the frequency of citations per journal in the database of search results as well as through discussions among the EPC team. We identified 12 journals to

be hand searched (Appendix A). To ensure identification of recent publications, we scanned the table of contents of each of the 12 journals for relevant citations from January or February 2003 to June 15, 2003 based on the coverage of these journals in MEDLINE®. On the basis of its coverage, the journal *Ethnicity and Disease* was searched from the fall 2002 issue forward.

For the second form of hand searching, we scanned the reference lists of key reviews and reference articles. We used ProCite, a reference management software, to create a database of reference material identified through an electronic search for relevant guidelines and reviews, through discussions with experts, and through the article review process. The principal investigator reviewed a list of the titles and abstracts from this database to identify key reviews. We then examined the reference lists from these key reviews to identify any additional articles for consideration.

Finally, we examined the reference lists of eligible articles to identify any potentially relevant articles. This was completed by the second reviewer as part of the article review process (see description of article review process below).

Search Terms and Strategies

Search strategies, specific to each database, were designed to maximize sensitivity. Initially, we developed a core strategy for MEDLINE®, accessed via PubMed, based on an analysis of the Medical Subject Headings (MeSH) and text words of key articles identified a priori. Because of the exclusion criterion related to study design, the component of the strategy specific to Question 1 was combined with the first phase of a previously validated strategy for the identification of controlled trials [19]. No limits were based on type of healthcare provider or specific minority group. The PubMed strategy was the basis for the strategies developed for the other electronic databases (Appendix A).

Organization and Tracking of Literature Search

Whenever possible, the results of the searches were downloaded and imported into ProCite. We used the duplication check in ProCite to include in the Minority Health Citations Database only articles that were not previously retrieved. This database was used to store citations and to track the search results and sources. We also used this database to track the results of the abstract review process and the retrieval of full-text copies of articles.

Abstract Review

Specific inclusion and exclusion criteria were applied at each of the three levels of review. Criteria became more stringent as the process moved from searching, to reviewing abstracts, to reviewing full-text articles. After identifying a citation, two team members independently reviewed the title and abstract, and articles were included or excluded from the article review according to the criteria described below.

Inclusion and Exclusion Criteria

During the abstract review process, emphasis was placed on identifying all articles that might have original data pertinent to the questions. As previously described, the technical experts were consulted during the development of inclusion and exclusion criteria. In evaluating titles and abstracts, the following criteria were used to exclude articles from further consideration:

- published prior to 1980
- not in English
- did not include human data
- contained no original data
- a meeting abstract only (no full article for review)
- not relevant to minority health
- no intervention
- not targeted to healthcare providers or organizations
- no evaluation of an intervention
- article did not apply to any of the study questions

The following additional exclusion criteria were applied to articles addressing Question 1 or strategies to improve minority healthcare quality:

- not a randomized controlled trial or a concurrent (non-historical) controlled trial
- not conducted in the United States

The rationale for these was to focus on studies that were more likely to provide valid evidence on the effectiveness of interventions and that could be applied to the healthcare system in the United States. Strategies employed in other countries may only apply to the healthcare systems in those countries and may not be amenable to translation to the healthcare system in the United States. This restriction was not placed on articles addressing Question 2 since it was felt that educational methods and other strategies to improve cultural competence were likely to be applicable to providers in the United States. We did not apply any study design limits on articles addressing Question 2 because preliminary search results indicated that very few of these studies would meet the more stringent criteria.

Finally, for Question 1 the exclusion criterion of "not relevant to minority health" was further specified to focus our review on interventions applicable to quality in minority healthcare. A study was excluded if less than 50 percent of the patients was from a single minority group or multiple minority groups, or if no subgroup analysis based on racial or ethnic group was completed.

Abstract Review Process

Titles and abstracts of all articles retrieved by the literature search were printed on an abstract form and distributed to two reviewers (Appendix B). The reviewers screened the abstracts for eligibility and classified them by the research question addressed. When reviewers agreed there was insufficient information to decide eligibility, the full article was retrieved for review.

The results of the abstract review process were entered into the Minority Health Citations Database. Deleted citations were tagged with the reason for exclusion. Citations were returned to the reviewers for adjudication if they disagreed on eligibility.

Article Review

The purpose of the article review was to confirm the relevance of each article to the research questions, to determine methodological characteristics pertaining to study quality, and to collect evidence pertinent to the research questions.

Quality Assessment and Data Abstraction

Forms were developed to confirm eligibility for full article review, assess study characteristics, and extract the relevant data for the study questions. The forms were developed through an iterative process that included the review of forms used for previous EPC projects, discussions among team members and experts, and pilot testing. This process was challenging because of the heterogenous literature. We developed separate forms to abstract data for each question. We used one form to assess the quality of each study. The forms were color coded to aid reviewers (Appendix B).

Study Quality Assessment

The study quality assessment form had three sections, and reviewers completed the form for each study. The first section included the exclusion criteria so that reviewers could confirm the eligibility of the article before proceeding with the full article review. The second section listed the research questions, thus allowing reviewers to tag articles by the question addressed. The final section contained questions designed to provide an assessment of study quality. These questions were designed to assess methodological strengths and weaknesses in several domains: 1) representativeness of targeted healthcare providers and, if appropriate, targeted patients; 2) potential bias and confounding; 3) description of the intervention; 4) outcomes of the intervention; and 5) analytic approach, statistical quality, and interpretation. In terms of generalizability, studies were given credit for adequately describing their populations, but no judgment was made about whether those populations were representative of the broader population of minority patients or their providers. Each item was scored for each study with a value ranging from 0 to 2. We calculated percentage scores for each domain by adding the total value of the responses and dividing by the total number of possible points for that domain and for that article (excluding items that were not applicable to certain study design types). We used the scores to categorize quality assessment for presentation on the evidence tables. For each domain, scores of 80 percent or higher were given a full circle, scores of 50 to 79 percent were given a half-filled circle, and scores of less than 50 percent were given an empty circle.

Data Abstraction

We used a separate form for each question to abstract information such as study design, intervention, and outcome assessment. For articles addressing Question 1, an additional group description form was completed for each group (or "arm") in the study. Articles addressing

Question 1 were categorized as addressing specific clinical areas by using the IOM list of priority areas [20]. We further classified these articles by the IOM framework of consumer perspectives of healthcare needs that included the categories of staying healthy, getting better, living with illness, and coping with the end of life.[9]

Article Review Process

A serial article review process was employed. In this process, the quality assessment and abstraction forms were completed by the primary reviewer. The second reviewer, after reading the article, checked each item on the forms for completeness and accuracy. The second reviewer also scanned the reference lists of eligible articles to identify potentially relevant articles. The reviewer pairs were formed to include personnel with domain-specific and/or methodological expertise.

All information from the article review process was entered in a relational database (Minority Health Evidence Database). The database was used to maintain and clean the data, as well as to create evidence and summary tables.

Grading of the Evidence

After all articles were reviewed, the quality of the evidence supporting each question was graded on the basis of its quality, quantity, and consistency (see Table 1). In terms of quality, the articles were examined by two criteria: study design and the presence of an objective assessment of outcomes. To meet the quality criteria for Grade A, there must have been at least one randomized controlled trial and at least 75 percent of the studies must have used an objective assessment method. To meet the quality criteria for Grade B, there must have been at least one controlled trial (not necessarily randomized) AND at least 50 percent of studies must have used an objective assessment method. To meet the quality criteria for Grade C or D, there did not need to be any controlled trials and less than 50 percent of studies could have used an objective assessment to measure outcomes.

In terms of quantity, there had to be at least four studies to meet criteria for Grade A, three to meet the criteria for Grade B, two to meet the criteria for Grade C, or fewer than two studies to meet the criteria for Grade D. In terms of consistency, the results of the studies had to be consistent to meet the criteria for Grade A, reasonably consistent to meet the criteria for Grade B, and inconsistent to meet the criteria for Grade C. Where there where too few studies to judge the consistency the article was assigned Grade D. The grading of the evidence was discussed at a team meeting and consensus was reached on each criterion. The evidence received a final "grade" that reflected the lowest rank on each of the four criteria (two for quality and one each for quantity and consistency).

Peer Review

Throughout the project, feedback was sought from the technical experts through formal and ad hoc requests for guidance. A draft of the completed report was sent to the technical experts, as well as to the partner (NQF), AHRQ and other peer reviewers. Substantive comments were catalogued and entered into a database. Revisions were made to the evidence report as warranted, and a summary of the comments and their disposition was submitted to AHRQ with the final report.

Chapter 3: Results

Literature Search and Abstract Review Process

Results from the search and the abstract review process were maintained in a database developed in ProCite. A summary of the results of the search and review processes is provided in Figure 2.

Of the 4,389 citations retrieved by the search methods, 3,710 were uniquely identified, that is, not previously included in the Minority Health Citations Database. We reviewed 3,703 of these citations at the abstract review level. We could not determine eligibility for seven articles that we were unable to retrieve.[21-27]

Of the 3,703 citations reviewed, we identified 288 (8 percent) as eligible for full article review. Reviewers did not need to agree on what exclusion criterion applied at the abstract level. The most frequent reason for exclusion was that the article was not relevant to minority health (used by one or both reviewers to delete 1,873 citations) and that the article did not describe an intervention (1,655 citations). Reviewers agreed on the reason for 1,876 of the 3,415 citations deleted (55 percent). For these articles, the same criteria were the most frequently applied: not relevant to minority health (806 citations, 43 percent) and no intervention (670 citations, 36 percent).

Article Review Process

From the abstract review process, 288 citations were identified for inclusion in the article review phase. At the article review level, 197 articles (68 percent) were excluded. The most frequent reasons for exclusion were no evaluation of an intervention (23 percent), not relevant to minority health (22 percent), and not targeted to healthcare provider or organization (16 percent). A listing of the excluded studies, with each article labeled with the reason for exclusion, is included in this report.

Of the 91 included articles, Question 1 was addressed by 27 articles and Question 2 was addressed by 64 articles. One article was identified as addressing strategies to address disparities (Question 1a) and one article was identified as addressing the costs of strategies shown to improve healthcare quality in minority populations (Question 1b). Of the articles addressing Question 2, six articles addressed the costs of the strategies to improve cultural competence (Question 2a). Three articles were identified that included interventions targeted to both providers and organizations, and each of these addressed Question 1.

Description of the Literature

The identified literature addressing strategies to improve healthcare quality in minority populations was heterogeneous. The articles were published in a variety of nursing and medical publications. There were 144 different journals represented by the 288 articles eligible for

review. The *Journal of Nursing Education* (16 articles), *Academic Medicine* (13 articles), and *Journal of Transcultural Nursing* (12 articles) had the highest proportion of eligible articles.

As shown in Figure 3, starting around 1992, the number of publications addressing healthcare quality in minority populations greatly increased. Thirty-three percent (96 articles) of the eligible articles were published after 2000.

Question 1: Effectiveness of healthcare quality improvement strategies for racial/ethnic minorities

Overview of Reviewed Studies

Of the 27 studies eligible for review, only three studies were published before 1990,[28-30] 20 were published between 1990 and 1999,[31-50] and four were published after 2000[51-54] (see Figure 4). All studies were randomized controlled trials (n=20) or concurrent controlled trials (n=7) (see Evidence Table 1). Despite this, the methodology employed by the studies varied widely, making synthesis and presentation of the evidence difficult. Some studies examined the same providers or patients across intervention groups whereas other studies employed a crossover design. The method of allocation also varied; the intervention assignment was made at the patient level (n=7), at the patient and provider level (n=6), at the provider level (n=6), at the provider and clinic/center level (n=2), and at the clinic/center level (n=6).

The majority of articles was in the area of prevention: general prevention (which included studies on cancer screening, immunization, etc.) (n=3), cancer screening only (n=10), tobacco cessation (n=2), cholesterol lowering (n=1), and prevention in children/adolescents (n=3). There were three studies published in the area of mental health (either depression or alcohol abuse) and one each in the area of chronic renal disease, asthma, acute respiratory tract infections, emergency medical systems, and advance directives (see Figure 5). From the perspective of the framework proposed by the Institute of Medicine,[9] there were 18 studies in the area of staying healthy, four in the area of getting better, one in the area of living with illness, one that dealt with coping at the end of life, and three that were in more than one category. In terms of the dimensions of quality,[9] the majority of studies addressed effectiveness (n=24), although there were some that addressed timeliness (n=10), safety (n=2), and patient-centeredness (n=5).

Almost all studies were targeted at physicians: either at physicians only (n=17) or at physicians and mid-level providers (nurses, nurse practitioners, and/or physician assistants) (n=8). Two studies were not targeted at physicians: one was directed solely at nurses and medical assistants and the other was aimed at emergency medical personnel. The specialty of the targeted physicians was most often internal medicine (n=7), but there were also general primary care (n=3), pediatrics (n=3), family medicine (n=2), adolescent medicine (n=1), and one or more of the above (n=9). The interventions targeted practicing professionals (n=15), professionals in training (n=6), or both (n=6). Most interventions occurred in the outpatient setting, either a hospital outpatient center (n=14), a community health center (n=4), a group practice (n=2), or in one or more of the above (n=6). One intervention took place in the community.

The racial/ethnic background of the patients in these 27 articles is shown in Figure 6. Most studies had more than 50 percent African American patients (n=19),[28,29,31-36,38,40,42,44-47,49-51,54]

only two had patient populations that were specified as more than 50 percent Hispanic.[37,39] and none had more than 50 percent Asian/Pacific Islander patients or more than 50 percent American Indian/Alaska Native patients. The remaining six studies had mixed groups (but no more than 50 percent in any one racial/ethnic category).[30,41,43,48,52,53] The mean age of patients was younger than 20 years in one study, between 20 and 39 years in two studies, between 40 and 59 years in seven studies, and over 60 years in five studies. The mean age was not specified in 12 studies.

All studies had a provider intervention, and most studies used more than one provider intervention method (see Evidence Table 2). Overall, the most common methods used were provider education (n=17) and tracking/reminder systems (n=15); a few studies used standing orders/algorithms (n=4), audit and feedback (n=1), and reward incentives (n=1). However, in terms of the *main* intervention method, the primary intervention was a tracking/reminder system in ten studies, multifaceted interventions in nine studies, provider education in two studies, bypassing the physician using nurse/nurse practitioners in two studies, use of a structured patient questionnaire in one study, use of remote simultaneous translation in one study, use of subspecialty consultation in one study, and use of defibrillators on emergency medical vehicles in one study. Approximately half (n=14) of the studies had a patient intervention component, although these studies varied in whether the patient intervention was provided in addition to the provider intervention or compared to the provider intervention. The intervention was intended specifically for racial/ethnic minorities in only two studies [37 53].

The most common outcomes (summarized in Figure 7 and Table 3 and detailed in Evidence Table 3) were related to healthcare process: use of services (7 studies, 13 outcomes), appropriateness of care (18 studies, 43 outcomes), quality of providers (9 studies, 30 outcomes), patient adherence (4 studies, 9 outcomes), and efficacy of treatment (1 study, 1 outcome). Patient health status (7 studies, 21 outcomes), and patient satisfaction (3 studies, 3 outcomes) were also measured. Most authors reported that their intervention resulted in overall improvement (n=13) or partial/mixed improvement (n=10), but a few reported that their intervention resulted in no improvement (n=4).

Quality of Reviewed Studies

The articles were rated in terms of quality in each of five areas or domains: 1) representativeness, 2) potential for bias/confounding, 3) intervention description, 4) outcome assessment, and 5) analysis. Selected aspects of quality are summarized in Table 1. Details of the quality assessment for individual studies are found in Evidence Table 1.

The studies were fairly well described in terms of representativeness (20 of 27 clearly described healthcare providers and setting) and intervention description (24 of 27 described the intervention sufficiently to ensure replication). In terms of bias and confounding, although there were 20 randomized controlled trials, the randomization was considered adequate (in that investigators could not predict assignment) in only 11 studies. Also, although there were seven concurrent controlled trials, there was one study in which the comparison group was considered inadequate (dissimilar).

The studies were not as well designed in terms of their outcome assessment and analysis. Although all studies used objective methods to evaluate outcomes, only nine of 27 studies had

masked outcome assessment, and 13 of 27 studies performed a pre- and a post-intervention evaluation. Approximately half (15 of 27) reported the numbers for and reasons for non-inclusion in the study analysis, and almost all (21 of 27) performed a complete statistical analysis (including the magnitude of difference between groups, an index of variability, and a test statistic).

Results of Reviewed Studies

Twenty-seven articles qualified for our review. The results of these articles are organized by clinical area and by type of intervention. Results are also summarized in Tables 3 and 4 and detailed in Evidence Table 3. The overall summary columns in Evidence Table 3 are presented for both comparisons between intervention arms and comparisons within intervention arms (such as when there was a pre- and a post-intervention assessment), as some studies presented one but not the other, whereas other studies presented both comparisons. For this purpose, "significant improvement" refers to outcomes that showed a statistically better effect, "improvement" refers to outcomes which seemed to have a trend (not statistically significant) towards a better effect, "no improvement" refers to outcomes that were not improved, "negative effect" refers to outcomes that were worse after the intervention, and "not available" refers to outcomes for which no comparison was made.

Results for Question 1 by clinical area

Prevention in Adults

General prevention. Three studies evaluated the impact of quality improvement in the area of general prevention; two primarily used a tracking/reminder system,[28,29] and one primarily used provider education and "prevention prescription forms".[36] All studies demonstrated improvements in healthcare processes, such as likelihood of physicians applying preventive care to eligible patients[28,29] and a variety of specific physician counseling behaviors.[36] Only one study[28] attempted to measure patient outcomes, and it failed to show improvements in any physiologic measures such as blood pressure, serum glucose, and serum potassium.

Cancer screening. Ten studies evaluated the impact of quality improvement in the area of cancer screening,[30,31,34,38,40,42,44,47,48,54] and each of these used a unique combination of provider and patient methods in the intervention and control arms of the study. Most (n=8) used some form of a tracking/reminder system, and two studies used medical assistants or nurse practitioners to offer screening directly to patients.[31,42] All of these studies measured the impact of the interventions on the healthcare process, and all studies found some sort of improvement in cancer screening rates (appropriateness of care) or provider counseling behavior (quality of providers) for some of their outcomes. None of the studies evaluated the impact of quality improvement on patient outcomes.

Tobacco cessation. Two studies evaluated the impact of quality improvement in the area of tobacco cessation; one utilized a tracking/reminder system only,[49] and one used a provider education and reward system.[46] Both interventions improved provider counseling behavior, but the one study that evaluated patient adherence found no effect of the intervention on patient quit rates.[46]

Cholesterol. Only one study evaluated the impact of quality improvement in the area of hypercholesterolemia.[43] The intervention in the study involved provider education, an intensive tracking/reminder system, and patient education. Although the study did not demonstrate any improvement in appropriateness of care, there was a significant improvement in patient adherence to diet therapy and in cholesterol levels for patients in the intervention group.[43]

Prevention in Children

Injury prevention. One study evaluated the impact of quality improvement in the area of injury prevention in children.[51] This study compared the effects of a minimal provider education program with an enhanced provider education program and found that patients of the enhanced intervention providers received more provider injury prevention counseling and were more satisfied with the injury prevention information provided to them than patients of minimal intervention providers.[51] However, there were no differences in parents' knowledge of injury prevention or in their injury prevention practices between the two groups.[51]

Well-baby care. One study evaluated the relative impact of two different interpretative systems for non-English-speaking mothers during well-baby care visits.[37] The two interpretative systems were remote simultaneous (in which the interpreter translates simultaneously with the speaker but is not in the exam room) and proximal consecutive (in which the interpreter is in the exam room, waits for each person to complete a thought, and then translates the completed thought). The study found that both patients and physicians preferred the remote simultaneous translation and that it was associated with fewer misinterpretations and more complete information.[37]

Health behavior screening. Only one study evaluated the impact of quality improvement in the area of health-risk-behavior screening in adolescents.[35] The study compared the effects of a minimal provider education program with provision of a patient-completed standardized health-behavior-screening instrument to providers. The study found that providers who received the patient-completed screening instrument spent more time in health behavior counseling versus assessment and had higher agreement with psychiatrist ratings in assessment of patients at risk.[35] There were no differences in patient satisfaction for either group of patients.

Mental Health

Depression. Two studies evaluated the impact of quality improvement in the area of depression: one that used an intensive program of provider education, depression protocols, and increased provider visits with depressed patients compared with a minimal provider education program[33] and one that combined a provider education program with an intensive patient intervention for comparison with a minimal provider education program.[53] Both studies found an improvement in healthcare processes (appropriateness of depression care) for depressed minority patients.[33,53] In terms of health outcomes, the results were mixed; one study found that depression in both the intervention and control groups improved,[33] and the other study found that depression improved more for the intervention patients than for the control patients.[53]

Alcohol. One study addressed quality improvement in the area of alcohol abuse.[39] This study evaluated the relative and combined impact of a physician education and patient psychoeducation quality improvement program compared with no intervention, and it found addiction severity decreased over time for all groups (including the no intervention group) and

physiologic measures of health worsened for all groups.[39]

Other Clinical Areas

Asthma. One study evaluated the impact of a minimal quality improvement intervention compared with an intensive quality improvement intervention (including provider education, provision or review of practice guidelines, and consultation with expert-physicians) in the care of asthma for children in public health clinics.[41] The study demonstrated improvements in continuity of care and appropriateness of asthma care for patients in intervention clinics compared with controls.

Chronic renal disease. One study evaluated the impact of a single nephrology consultation for patients with chronic renal insufficiency compared with usual care by a primary care physician.[45] The study found that intervention patients had more visits to ophthalmologists, but had no improvements in health outcomes.

Acute respiratory tract infections. One study evaluated the impact of a provider education/minimal patient education intervention with a provider education/intensive patient education intervention, both aimed at decreasing antibiotic prescription rates for acute upper respiratory tract infections.[52] The study found that both interventions were effective in decreasing unnecessary antibiotic prescriptions without differences between groups

Emergency systems. One study evaluated the effect of providing automated external defibrillators on emergency medical equipment (and training firefighters in their use) compared with standard emergency care (which involved cardiopulmonary resuscitation without defibrillation).[32] That study found no differences in health outcomes between the two groups of patients.

Completion of advance directives. One study used a physician reminder system to encourage physicians to discuss advance directives with patients.[50] The study found that patients of physicians who had been reminded were more likely to be counseled and to complete advance directives.[50]

Results for Question 1 by type of intervention

Each study used a unique combination of intervention methods in a variety of settings and patient populations. However, for the purpose of synthesis, we have identified the *main* intervention method. It should be noted that the categorization of the main intervention method is a simplification of what was often a complex intervention strategy. Details on the specific study intervention methods are found in Evidence Table 2.

Tracking/reminder systems: Ten studies used tracking and/or reminder systems to improve quality of care. Of these, two were in adult general prevention,[28 29] six were in adult cancer screening,[29,34,38,40,44,54] one in tobacco cessation,[49] and one was in end-of-life care (completion of advance directives).[50] All ten studies demonstrated positive outcomes, primarily in the appropriateness of care (such as provision of preventive care, tobacco cessation counseling, or advance directive counseling) category. Overall, there is excellent evidence supporting the use of tracking/reminder systems aimed at providers of racial/ethnic minority patients (Evidence Grade A).

Multifaceted interventions: Nine studies used an intervention that we characterize as multifaceted, meaning that there two or more (usually more) main intervention methods.[33,39,43,46,47,5341,48,52] Two of these interventions were in adult cancer screening,[47,48] one in

tobacco cessation,[46] one in cholesterol reduction,[43] three in mental health,[33,39,53] one in acute upper respiratory tract infections,[52] and one in asthma.[41] Outcomes of these studies are mixed, with most studies showing improvements in one or two (but not all) outcomes measured. Overall, there is fair evidence supporting the use of multifaceted interventions aimed at providers of racial/ethnic minority patients (Evidence Grade C).

Bypass the physician: Two studies (both in adult cancer screening) bypassed the physician and had either a nurse or a nurse practitioner offer screening directly to patients, and both studies demonstrated improvements in the provision of preventive services to patients.[31,42] Overall, there is fair evidence supporting the use of bypassing the providers of racial/ethnic minority patients to offer standardized services directly to patients (Evidence Grade C).

Provider education: Two studies primarily used provider education as the main intervention strategy, one in the area of adult general prevention[36] and one in prevention of injuries in children.[51] Both studies found improvements in provider counseling behaviors,[36,51] but one measured and did not find any positive effect of the intervention on parental knowledge of injury prevention (the only outcome categorized as efficacy of treatment) or parental adherence to provider advice [51]. Overall, there is fair evidence supporting the use of provider education aimed at providers of racial/ethnic minority patients (Evidence Grade C).

Use of Safe Times Questionnaire (STQ): One study (in the area of prevention for children) used a structured questionnaire to assess adolescent health behaviors and demonstrated a positive impact on provider counseling behaviors.[35] Overall, there is poor evidence supporting the use of structured questionnaires for racial/ethnic minority patients (Evidence Grade D).

Use of Remote Simultaneous Translation (RST): One study compared the accuracy of translation and quality of patient-physician communication by using remote simultaneous and proximate consecutive interpretation and found fewer translation errors and enhanced patient and physician satisfaction by using the RST method.[37] Overall, there is poor evidence supporting the use of remote simultaneous translation for racial/ethnic minority patients (Evidence Grade D).

Use of specialty consultation: One study evaluated the use of nephrology consults for patients with chronic kidney disease and found no effect on healthcare process or patient outcomes.[45] Overall, there is poor evidence supporting the use of specialty consults aimed at providers of racial/ethnic minority patients (Evidence Grade D).

Use of defibrillators on emergency medical services: One study evaluated the use of defibrillators on emergency medical services and found no effect on patient outcomes.[32] Overall, there is poor evidence supporting the use of defibrillators on emergency medical services (Evidence Grade D).

Results for Question 1a: Strategies to Reduce Disparities

Only one study specifically addressed the question of whether an intervention could reduce disparities in healthcare quality between ethnic minority and white persons.[53] The study, which evaluated the impact of two different culturally tailored interventions to improve the quality of depression care compared with a control group that received no intervention, had mixed results. There was no differential effect of the interventions on healthcare process for white versus ethnic minority patients; all patients (African American, Latino, and white) in the interventions groups were more likely than patients in the control group to receive appropriate therapy. However, there was a mixed effect on health outcomes: there were improvements for

African American and Latino patients in the rate of depression compared to controls (with no improvement for white patients), but there were no improvements for African American and Latino patients in the intervention groups in employment rates compared with controls (with improvement for white patients). Overall, there is poor evidence to determine which interventions might reduce disparities between racial/ethnic minority patients and majority patients (Evidence Grade D).

Results for Question 1b: Costs of Quality Improvement for Racial/Ethnic Minorities

Only one study reported on the costs of an intervention aimed at improving the quality of healthcare for racial/ethnic minority persons.[45] This study, which provided case management and nephrology consultation for patients with chronic renal insufficiency, estimated that it cost a minimum US $89,355 yearly in 1998 (or $484 per intervention patient), but it found no health benefits to participants. Overall, there is poor evidence to determine the cost of strategies to improve the quality of care for racial/ethnic minorities (Evidence Grade D).

Summary of Evidence

Strategies to improve the quality of care for racial/ethnic minority patients have been implemented in a variety of clinical areas by various methods. Almost all the interventions have occurred in the primary care setting, and most have focused on the provision of preventive services. There is excellent evidence that these interventions have improved the quality of providers (Evidence Grade A), good evidence that these interventions have improved appropriateness of care (Evidence Grade B), and fair evidence that these interventions have positively affected patient utilization, adherence, satisfaction, or health status (Evidence Grade C).

In terms of intervention methods, there is excellent evidence that provider tracking/reminder systems are effective in improving the quality of care for racial/ethnic minority patients (Evidence Grade A), fair evidence that multifaceted interventions, provider education interventions, and interventions which bypass the physician to offer screening services to racial/ethnic minority patients can improve quality of care (Evidence Grade C), and insufficient evidence for the use of any other of the studied interventions (Evidence Grade D).

There is poor evidence to determine which strategies are most effective in reducing disparities between minority and white populations (Evidence Grade D). The only study that was specifically designed to do this had mixed results, with improvements in only one of the two outcomes assessed.[53]

There is poor evidence to determine the costs of strategies to improve care and reduce disparities for minority populations (Evidence Grade D).

Question 2: Effectiveness of cultural competence training

Overview of Reviewed Studies

A total of 64 articles addressed strategies to improve the cultural competence of healthcare providers or organizations. The number of articles published has increased

substantially over the last decade. Of the 64 total articles, five were published between 1980 and 1989,[55-59] 30 between 1990 and 1999,[60-89] and 29 between 2000 and 2003[90-118] (see Figure 8). Most of the articles described interventions that took place in the United States (n=52). The remainder described interventions in Australia (n=6), the United Kingdom (n=3), Canada (n=2), or New Zealand (n=1) (see Evidence Table 4).

Of the 64 articles that qualified for our review, only two were randomized controlled trials, eight were concurrent controlled trials, and four had an external (non-concurrent) control group. Most studies were designed without a comparison group; these had either a post-intervention evaluation only (n=25), a pre- and a post-intervention evaluation (n=20), or a qualitative evaluation (n=5). Most of the interventions described in the articles targeted nurses (n=32) or physicians (n=19) (see Figure 9). Most interventions targeted healthcare providers who were in their pre-professional training (n=38) or who were practicing professionals (n=17) (see Figure 10).

The content of the curricular interventions varied across the 64 studies. Using a previously developed framework to categorize cultural competence curricular content,[119] we found that most interventions focused on specific cultural content (n=45), general concepts of culture (n=43), language (n=15), and patient-provider interaction (n=13). A few articles describing interventions focused on healthcare access (n=8), racism (n=3), socioeconomic status (n=2), and gender (n=1). In terms of the specific minority groups that were the focus of the interventions, e 20 studies mentioned Hispanic persons; 19 African Americans; 16 Asians/Pacific Islanders; and five, American Indians.

Most interventions used more than one training method, and no two studies used exactly the same methods. The most common training methods were group discussion (n=29), lectures (n=29), case scenarios (n=20), small group work (n=18), clinical experiences (n=17), cultural immersion (n=17), readings (n=16), role play (n=14), presentations by members of another culture (n=14), and audio/visual materials (n=14). Less common training methods were interviews of members of another culture (n=10), practice exercises (n=7), literature (e.g., poems, stories) (n=5), role play/modeling (n=5), language lessons (n=4), self-study (n=3), self-reflection/awareness (n=3), standardized patients (n=2), problem-based learning (n=1), and brainstorming (n=1).

Most articles did not specify the total contact time that the targeted learners spent in training (n=32). In those that did specify learner contact time, the majority of interventions were eight hours or less (n=12), but some were between one and five days (n=10) or longer than one week (n=10). In terms of timing of the evaluations, 13 evaluations were completed less than one day after the end of the intervention (immediate post-test), four were completed 1 to 30 days after, six were completed between one and three months after, six between four and 12 months after, five more than one year after, six had multiple evaluation time points, and 24 articles did not specify when the evaluation of the intervention was completed.

Most studies used more than one method for evaluation; the most common methods were provider self-assessment forms (used in 33 studies), participant ratings of the curriculum (n=19 studies), written exams (n=19 studies), individual provider interviews (n=6 studies), or patient ratings (n=5 studies). Less common methods of evaluation were essays (n=5 studies), group interviews (n=5 studies), direct provider observation (n=3 studies), and performance audits (n=1 study). Only four articles attempted to measure patient outcomes; most included some measure of

provider outcome, either attitude (n=44), knowledge (n=30), or skills/behaviors (n=22) (see Figure 11).

Quality of Reviewed Studies

We assessed the quality of each study in five domains: representativeness, potential for bias/confounding, intervention description, outcome assessment, and analysis. In general, the articles were better at adequately describing the healthcare providers (representativeness) and intervention (intervention description) than at avoiding bias/confounding, ensuring appropriate outcome assessment, and analysis (see Evidence Table 5).

Selected aspects of the quality assessment are highlighted in Table 4. Of particular note, less than half (n=27) of the studies had an objective outcome assessment; only one third (n=21) included enough detail about the intervention to ensure replication; only 17 of the interventions were developed with a theoretical model; only 21 clearly described the targeted healthcare providers, setting, and dates of study; only 15 had a complete statistical analysis; only 14 included the numbers and reasons for non-inclusion in the study analysis; only eight had an adequate comparison group (concurrent and similar); only two had masking of outcome assessors; and only one study had adequate randomization.

Results of Reviewed Studies

A summary of the results of Question 2 is found in Tables 6. In Table 6 and in our results below, we focus on the 34 studies with the strongest study design (studies that either had a comparison group and/or did a pre- and post-intervention evaluation). We did not focus on articles that described interventions evaluated qualitatively or with only a post-test; however, these articles were reviewed and are included in the presentation of results in Evidence Table 6 in the Appendix. The results are presented by outcome type (knowledge, attitude, skills/behavior, and patient outcomes) and, within outcome type, by targeted provider (physicians, nurses, other providers/mixed groups).

Knowledge Outcomes

Studies in physicians. Six of the seven studies that evaluated changes in physician knowledge following implementation of a cultural competence curriculum found an improvement,[63,67,74,96,111] and one study had mixed results.[59] Of these six studies, two evaluated culture-specific knowledge,[59,67] and four evaluated knowledge about general cultural concepts.[63,74,96,111] There was no clear pattern regarding which type of knowledge (culture-specific versus general) was more often enhanced by cultural competence training for physicians.

Studies in nurses. Four of the seven studies that evaluated changes in nurse knowledge after implementation of a cultural competence curriculum demonstrated an improvement,[72,82,94,98] one had mixed results,[60] and two showed no improvement.[76,91] Of these, four studies evaluated knowledge of general cultural concepts,[72,91,94,98] and three evaluated culture-specific knowledge.[60,76,82] There was no clear pattern regarding which type of knowledge (culture-specific versus general) was more often affected by cultural competence training for nurses.

Studies in other providers/mixed groups. All six of the studies done in mixed groups of

providers or other providers (i.e. mental health providers) demonstrated an improvement in provider knowledge.[55,69,73,93,100,108] Three of these studies evaluated knowledge of general cultural concepts,[55,69,100] two evaluated culture-specific knowledge,[73,93] and one[108] did not specify the type of knowledge evaluated. There was no clear pattern regarding which type of knowledge (culture-specific versus general) was more often expanded by cultural competence training for mixed groups of providers/other providers.

Attitude Outcomes

Studies in physicians. Nine of the 12 studies that evaluated changes in physician attitudes after cultural competence training demonstrated an improvement in attitudes.[111] [58,67,74,90,96,102,106,110]These nine studies all examined different types of attitudes, such as increased confidence in communicating with Spanish-speaking patients,[106] greater understanding of the effect of sociocultural issues on the patient-physician relationship,[102] and more positive attitudes towards community health issues.[90]

Three of the 12 studies that evaluated changes in physician attitudes after cultural competence training had no change or mixed results.[59,112,118] Notably, one of these studies demonstrated that after a curriculum that emphasized culture-specific information about Aboriginals, although students did develop more positive attitudes towards Aboriginal people, students were also more likely to agree that "in general, Aboriginal people are all pretty much alike." [59]

Studies in nurses. Nine of the 10 studies that evaluated change in nurses' attitudes after cultural competence training demonstrated some improvement in their attitudes,[57,72,82,84,86,88,94,95,98] and one had mixed results.[71] Although three of these studies demonstrated improvements in cultural self-efficacy,[86,88,98] the other types of attitudes that were measured in these studies were varied and sometimes unspecific, for example, "attitudes about cultural patterns."[120]

Studies in other providers/mixed groups. All three of the studies that were done in mixed groups of providers and that evaluated the effect of the intervention on provider attitudes demonstrated an improvement.[69,73,100] These attitudes included enhanced awareness and appreciation for rural lifestyles,[69] an increased interest in learning about patient and family backgrounds and increased sensitivity to cultural competence,[100] and greater sensitivity to immigrant health concerns.[73]

Skill/Behavior Outcomes

Studies in physicians. All seven of the studies that evaluated the impact of cultural competence training on physician skills and/or behaviors demonstrated an improvement.[58,67,74,77,90,106,111] In one study, participants were given 16 one-hour sessions in which they practiced communication skills with community volunteers and were subsequently shown to be significantly more competent in interviewing a non-English speaking person as rated by a masked psychologist assessing videotapes of the interviews.[77] In one study, participants scored higher on a Spanish language test following 20 hours of training in Spanish,[67] and in another study participants used a Spanish interpreter less often after 20 hours of training in Spanish.[106] Three other studies demonstrated a positive effect on physicians' own general skills self-assessment.[74,90,111]

Studies in nurses. All five of the studies that evaluated the impact of cultural competence

training on nurse skills and/or behaviors demonstrated an improvement.[57,72,82,84,91] Two of these studies showed an increase in nurses' involvement in community-based cancer education programs,[57,82] and another study noted an increase in activities devoted to understanding other racial/ethnic groups and an increase in self-reported social interactions with peers of different races/ethnicities.[91]

Studies in other providers/mixed groups. Both of the studies that evaluated the impact of cultural competence training on the skills and/or behaviors of other providers/mixed providers demonstrated an improvement.[55,93] In one study, there was an increase in referrals of Hispanic Alzheimer's patients and families to appropriate specialized services,[93] and in another study participants were better able to conduct a behavioral analysis and treatment plan.[55]

Patient Outcomes

Only three articles evaluated patient outcomes: one that targeted physicians,[106] one that targeted mental health counselors,[61] and one that targeted a mixed group of providers.[100] The outcome measures were not health outcomes however. All three reported favorable patient satisfaction measures (all related to the interpersonal aspects of care),[61,100,106] and one demonstrated an improvement in adherence to follow-up among patients assigned to the intervention group providers.[61]

In terms of the methods used to bring about such improvements in patient satisfaction and (in one case) adherence, one study trained four mental health counselors about the attitudes that low-income African American women bring to counseling (4 hours total);[61] another study trained nine physicians to speak Spanish (20 hours total);[106] and the third study implemented a state-mandated three-day training program focused on team training, recipient recovery principles, clinical issues, and cultural competence for all staff who have contact with recipients of inpatient mental healthcare.[100]

Results for Question 2a: Costs of Cultural Competence Training

Of the 55 articles eligible for review, only five addressed the costs of cultural competence training.[67,75,90,96,106] Overall, the cost information contained in these articles was too limited to allow a comprehensive estimate of costs.

There are limited data on the costs of international cultural immersion. Four of the five articles[67,75,90,96] described the costs of interventions that involved international travel. Of those, three programs[67,90,96] shared the cost of travel with the students, and one program required students to pay the entire amount.[75] Two programs provided US$2000 (in 2000[96] and in 1995-1996[90]) for each student to travel from the United States to South America, Asia, or Africa for either six[96] or eight[90] weeks. In each of these programs, the students paid the remaining costs. Another program estimated that an 8-day trip from the United States to Mexico cost US$1200 total in 1994, of which the students contributed 60 percent on average and scholarship assistance for the remainder was available through private donations.[67] Another international travel program estimated that it cost each student in excess of Aust$4000 in 1997 to travel from Australia to Thailand for four weeks, and the students paid the entire amount.[75]

There are limited data on the costs of classroom or other types of instruction. One study estimated the cost of 20 total hours of Spanish language instruction for nine physicians to be US $2000 in 2000, not including the opportunity costs for physician time (approximately 20 hours

total for each physician).[106] This intervention, which had one of the best evaluations, was able to show a difference in patient satisfaction. In another program, 60 hours of classroom instruction (20 hours of Spanish-language instruction and 40 hours of cultural competence training focused on Hispanic populations) were provided for 19 students at an estimated local cost of US $3000 in 1994, of which each student contributed US $80.[67] Finally, one program matched 26 students to 26 local ethnically diverse families, asked the students to visit the family six times, and paid each family US $400 in 1996 to 2000.[90]

Summary of Evidence

There is excellent evidence to suggest that cultural competence training can favorably affect the knowledge of healthcare providers (Evidence Grade A) and good evidence that cultural competence training can improve the attitudes and skills of healthcare providers (Evidence Grade B). However, the studies are heterogeneous (perhaps reflecting the complexity of interventions), and it is difficult to conclude which specific types of training interventions are effective in improving particular outcomes. Even within an outcome category, outcome measurements are not uniform, making it difficult to determine which specific types of knowledge, attitudes, or skills are affected by cultural competence training. No studies have examined quality of care process outcomes.

There is good evidence from three studies to suggest that cultural competence training can favorably affect patient satisfaction (Evidence Grade B) and poor evidence that cultural competence training can improve patient adherence (Evidence Grade D), although the one study that examined patient adherence demonstrated a positive impact. No studies have evaluated patient health outcomes.

Evidence is insufficient to determine the cost of cultural competence training (Evidence Grade D). However, one of the studies that demonstrated an improvement in patient satisfaction also included information about cost, and so perhaps the best evidence is its estimated US $2000 to train nine emergency department physicians in the Spanish language.[106]

Chapter 4: Discussion

Summary of Findings

Question 1. Effectiveness of healthcare quality improvement interventions for racial/ethnic minorities

Summary of Study Characteristics

- Almost all the interventions occurred in primary care settings and most of the studies occurred in the area of prevention.
- Most studies targeted healthcare providers caring for a majority of African American patients.
- The most common main intervention methods are tracking/reminder systems and multifaceted interventions. Most studies utilized methods that were generic quality improvement strategies, and only two studies specifically targeted the needs of racial/ethnic minority patients.

Summary of Study Results

- There is excellent evidence that quality improvement strategies aimed at the healthcare providers of racial/ethnic minority patients are effective in improving the quality of providers (Evidence Grade A), good evidence that these strategies are effective in improving appropriateness of care (Evidence Grade B), and fair evidence that these strategies can improve patient health service utilization, adherence, satisfaction, and health status (Evidence Grade C).
- There is excellent evidence that tracking/reminder systems aimed at providers of racial/ethnic minority patients are effective in improving the quality of care (Evidence Grade A), fair evidence that multifaceted interventions, provider education interventions and interventions bypassing the physician to offer services directly to patients can improve quality of care for racial/ethnic minority patients (Evidence Grade C), and poor evidence to support the use of any of the other strategies (Evidence Grade D). Of note, however, were two types of interventions with favorable results (employed in one study each, thus receiving an evidence grade of D) that may be worth further study: use of remote simultaneous translation for patients with limited English proficiency and the use of the Safe Times Questionnaire for health behaviors risk assessment in adolescents.
- There is poor evidence to determine which strategies are most effective in reducing disparities between ethnic minority and white populations (Evidence Grade D). Only one study was designed to do this (with mixed results), and this is a critical gap in the literature.
- There is poor evidence to determine the costs of strategies to improve care and reduce disparities for ethnic minority populations (Evidence Grade D).

Question 2. Effectiveness of cultural competence training

Summary of Study Characteristics

- Studies have been conducted across a wide range of healthcare provider specialties and training levels.
- The curricular methods utilized are heterogenous; there were *no two studies* that used the same combination of intervention methods.

Summary of Study Results

- There is excellent evidence to suggest that cultural competence training can increase the knowledge of healthcare providers (Evidence Grade A) and good evidence that cultural competence training can improve the attitudes and skills of healthcare providers (Evidence Grade B).
- There is good evidence from three studies to suggest that cultural competence training can raise patient satisfaction (Evidence Grade B) and poor evidence that cultural competence training can affect patient adherence (Evidence Grade D) although the one study that was designed to measure patient adherence demonstrated favorable results.
- There are no studies that have evaluated the impact of cultural competence training on patient health status outcomes.
- There is insufficient evidence , because of heterogeneity of the literature, to suggest *which types* of cultural competence training (i.e., lecture, workshop, small group, cultural immersion) are most effective.
- There is poor evidence to determine the cost of cultural competence training (Evidence Grade D).

Limitations of Literature and Report

General Limitations

- Eligibility was limited to English language published reports of studies. There is, therefore, a possibility of publication bias. Although, our resources did not permit extensive searching of the non-English language and gray literature, recent work has suggested that results of reviews with these limits do not differ substantially from reviews with no such limits.[121]
- Eligibility was limited to articles published after 1980.

Limitations of Literature and Report for Question 1

Limitations of the Literature

- There were small numbers of studies in each clinical category (except prevention), and many priority conditions that have had documented healthcare disparities (such as HIV/AIDS, cardiovascular disease, diabetes mellitus, infant mortality)

were not represented.

- Only two studies used interventions actually tailored for the healthcare needs of racial/ethnic minorities. The majority of interventions did not target aspects of care that have been demonstrated to be disparate between minority and majority patient populations; instead most were generic quality improvement interventions targeted at providers of racial/ethnic minority patients.
- The targeted processes of care were not always evidence-based practices for any patient population (for example, oral cavity exams or breast self-examinations for cancer screening) and would therefore be unlikely to improve the quality of care or reduce disparities for racial/ethnic minority patients.
- Few studies measured patient outcomes; most measured healthcare process. This limitation would not be as significant if the studies had targeted processes of care that were more closely linked to patient outcomes (i.e., more evidence based).
- Very few studies were completed in Hispanic populations and none in American Indians/Alaska Natives or in Asians/Pacific Islanders.
- Each study used slightly different intervention methods, making generalizations across studies difficult.
- Studies used multicomponent interventions and did not examine separate components.
- There may have been studies that had data on racial/ethnic minorities that was not presented and therefore wouldn't have qualified for our review.
- Most studies did not include data on costs.

Limitations of the Report

- Only interventions targeting providers/organizations were included; interventions directly targeting patients may also be promising strategies to improve the quality of care and reduce racial/ethnic disparities, but theyare not reflected in this report.
- Only randomized controlled trials and concurrent controlled trials were included; there may be other worthwhile interventions that have been evaluated with other study designs.
- Eligibility was limited to studies conducted in the United States. There may have been other promising interventions conducted in other countries that are not reflected in this report.
- We made no assessment of the generalizability of the study population of targeted providers in terms of whether they were representative of the population of providers caring for racial/ethnic minorities.

Limitations of Literature and Report for Question 2

Limitations of the Literature

- Most studies were designed without a comparison group for evaluation.
- There were few standardized instruments for measuring cultural competence and very few outcome assessments were objectively measured. There were often no

data in the articles concerning the psychometric properties of the instruments.
- Many articles did not describe the curricular interventions well enough to ensure replication.
- Each curricular intervention was different, making generalizability across studies difficult.
- Few studies measured patient outcomes and none measured health status. Some studies included only curriculum evaluation as an outcome.
- Most studies did not include data on costs.

Limitations of the Report

- We made no attempt to assess the psychometric properties of the instruments used to measure cultural competence.
- Our review focuses on interventions aimed at the education of healthcare providers and therefore falls more narrowly into the provider education recommendation of the National Standards for Culturally and Linguistically Appropriate Services in Healthcare published by the Office of Minority Health.[17]

Future Research

Research on Improving the Quality of Care and Reducing Disparities for Racial/Ethnic Minorities

- More research is needed that is designed specifically to reduce racial/ethnic disparities in healthcare quality, for example, research that targets healthcare processes known to be a source of racial/ethnic disparities.
- It is necessary to distinguish between interventions aimed at improving the quality of care for all persons and those aimed at improving quality of care for racial/ethnic minority populations specifically (such as reducing provider bias).
- More quality improvement interventions in racial/ethnic minority populations should be focused on priority conditions for which there are documented health disparities such as infant mortality, cardiovascular disease, diabetes mellitus, and HIV/AIDS.
- When generic quality improvement interventions are done in mixed populations, subgroup analyses should evaluate the effect of the interventions in racial/ethnic minority patients, such that we understand the effect on equality of treatment.
- Studies ought to include patient outcomes, have longer follow-up, and link process of care to health outcomes.
- There is a need to replicate promising intervention strategies in different healthcare settings and organizations. For example, more studies are needed in acute care and specialty settings.
- More studies are needed in Asian/Pacific Islander, American Indian/Alaska Native and Hispanic populations.
- More information is needed about the costs of various strategies to improve

healthcare quality and reduce racial disparity.
- The literature is expanding rapidly, and updated evidence assessments will be needed soon.
- Funding for this research is needed.

Research on Cultural Competence

- Curricular objectives need to be measurable and linked to measured outcomes.
- Outcomes should be measured objectively.
- There is a need for standardized, reliable, and valid instruments to measure aspects of cultural competence.
- Studies evaluating the effect of cultural competence training need to have a pre- and post-intervention evaluation and/or comparison group; there is a need for more randomized controlled trials in this area.
- Studies should measure the effect of the curricular interventions on healthcare process and patient outcomes including health status.
- Researchers should comprehensively describe the curricular interventions.
- Studies ought to include more comprehensive information about resources needed and cost of cultural competence training.
- The literature is expanding rapidly, and updated evidence assessments will be needed soon.
- Funding for this research is needed.

References and Included Studies

1. Mayberry RM, Mili F, and Ofili E. Racial and ethnic differences in access to medical care. Med Care Res Rev 2000; 57 Suppl 1: 108-45.

2. Smedley BD, Stith AY, Nelson AR. Unequal Treatment: Confronting racial and ethnic disparities in health care. Committee on Understanding and Eliminating Racial and Ethnic Disparities in Health Care. Washington, DC: Institute of Medicine. 2003.

3. van Ryn M. Research on the provider contribution to race/ethnicity disparities in medical care. Med Care 2002; 40(1 Suppl): I140-51.

4. Wennberg DE. Variation in the delivery of health care: the stakes are high. Ann Intern Med 1998; 128(10): 866-8.

5. Betancourt JR, Green AR, Carrillo JE, et al. Defining cultural competence: a practical framework for addressing racial/ethnic disparities in health and health care. Public Health Rep 2003; 118(4): 293-302.

6. Anderson LM, Scrimshaw SC, Fullilove MT, et al. Culturally competent healthcare systems. A systematic review. Am J Prev Med 2003; 24(3 Suppl): 68-79.

7. Improving Healthcare Quality for Minority Patients: Workshop Proceedings; 2001 June; Arlington, VA. Washington, DC: National Quality Forum; 2002.

8. Cooper LA, Hill MN, and Powe NR. Designing and evaluating interventions to eliminate racial and ethnic disparities in health care. J Gen Intern Med 2002; 17(6): 477-86.

9. Crossing the quality chasm: A new health system for the 21st century. Committee on quality of health care in America. Washington, DC: National Academy of Sciences. 2001.

10. Bierman AS, Magari ES, Jette AM, et al. Assessing access as a first step toward improving the quality of care for very old adults. J Ambul Care Manage 1998; 21(3): 17-26.

11. Shi L. Experience of primary care by racial and ethnic groups in the United States. Med Care 1999; 37: 1068-77.

12. Cooper LA, Roter DL. Patient-provider communication: The effect of race and ethnicity on process and outcomes of healthcare. In: Smedley BD, Stith AY, Nelson AR, editors. Unequal treatment: Confronting racial and ethnic disparities in healthcare. Washington, DC: The National Academies Press; 2002. p. 552-93.

13. Last JM. New York: Oxford University Press; 1998.

14. Collins KS, Hughes DL, Doty MM, et al. Diverse communities, common concerns: Assessing health care quality for minority Americans. New York: The Commonwealth Fund; 2002.

15. Health Resources and Services Administration Bureau of Health Professions USDHHS. BHPR - Other definitions of cultural competence. Available at: http://bhpr.hrsa.gov/diversity/cultcomp.htm. Accessed 2003 Aug 21.

16. United States Department of Health and Human Services, Office of Minority Health. National Standards for Culturally and Linguistically Appropriate Services in Health Care. Available at: http://www.omhrc.gov/CLAS/finalcultural1a.htm Accessed 2003 Oct 21.

17. Liason Committee on Medical Education. Functions and structure of a medical school: standards for accreditation of medical education programs leading to the MD degree. Available at: http://www.lcme.org/functionslist.htm#educational%20program. Accessed 2003 Oct 23.

18. Pena DE, Munoz C, and Grumbach K. Cross-cultural education in U.S. medical schools: development of an assessment tool. Acad Med 2003; 78(6): 615-22.

19. Robinson KA, Dickersin K. Development of a

highly sensitive search strategy for the retrieval of reports of controlled trials using PubMed. Int J Epidemiol 2002; 31(1): 150-3.

20. Priority areas for national action: Transforming health care quality. Committee on quality of health care in America. Washington, DC: National Academy of Sciences. 2003.

21. America Cancer Society. Special touch facilitator program. 1996.

22. Calderon J, Wolf K, and Linder J. How and Why to Incorporate Cultural Competence-Based Programs into CME: Workshop (Personal Skills; All). 2000.

23. Chew D. A paradigm shift in nursing education -- cultural care perspective. Singapore Nurs J 2001; 28(1): 27-8.

24. Flores G. Improving quality through cross-cultural medical practice. California Family Physician 1997; Nov-Dec; 9-16.

25. Association of American Medical Colleges. Teachings and learning of cultural competence in medical school . 1998; 1(5).

26. Hart Wasekeesikaw F. Cross-cultural nursing experience to debut at Norway House Cree Nation. Aboriginal-Nurse 2002; 17(1): 7.

27. Russell MB. The impact of cultural sensitivity training on Filipino nurses as measured by alterations in caring behaviors. 2000.

28. McDonald CJ, Hui SL, Smith DM, et al. Reminders to physicians from an introspective computer medical record. A two-year randomized trial. Ann Intern Med 1984; 100(1): 130-8.

29. Turner BJ, Day SC, and Borenstein B. A controlled trial to improve delivery of preventive care: physician or patient reminders? J Gen Intern Med 1989; 4(5): 403-9.

30. Chambers CV, Balaban DJ, Carlson BL, et al. Microcomputer-generated reminders. Improving the compliance of primary care physicians with mammography screening guidelines. J Fam Pract 1989; 29(3): 273-80.

31. Mandelblatt J, Traxler M, Lakin P, et al. A nurse practitioner intervention to increase breast and cervical cancer screening for poor, elderly black women. J Gen Intern Med 1993; 8(4): 173-8.

32. Kellermann AL, Hackman BB, Somes G, et al. Impact of first-responder defibrillation in an urban emergency medical services system. JAMA 1993; 270(14): 1708-13.

33. Callahan CM, Hendrie HC, Dittus RS, et al. Improving treatment of late life depression in primary care: a randomized clinical trial. J Am Geriatr Soc 1994; 42(8): 839-46.

34. Burack RC, Gimotty PA, George J, et al. Promoting screening mammography in inner-city settings: a randomized controlled trial of computerized reminders as a component of a program to facilitate mammography. Med Care 1994; 32(6): 609-24.

35. Schubiner H, Tzelepis A, Wright K, et al. The clinical utility of the Safe Times Questionnaire. J Adolesc Health 1994; 15(5): 374-82.

36. Gemson DH, Ashford AR, Dickey LL, et al. Putting prevention into practice. Impact of a multifaceted physician education program on preventive services in the inner city. Arch Intern Med 1995; 155(20): 2210-6.

37. Hornberger JC, Gibson CD Jr, Wood W, et al. Eliminating language barriers for non-English-speaking patients. Med Care 1996 ; 34(8): 845-56.

38. Burack RC, Gimotty PA, George J, et al. The effect of patient and physician reminders on use of screening mammography in a health maintenance organization. Results of a randomized controlled trial. Cancer 1996; 78(8): 1708-21.

39. Burge SK, Amodei N, Elkin B, et al. An evaluation of two primary care interventions for alcohol abuse among Mexican-American patients. Addiction 1997; 92(12): 1705-16.

40. Burack RC, Gimotty PA. Promoting screening

mammography in inner-city settings. The sustained effectiveness of computerized reminders in a randomized controlled trial. Med Care 1997; 35(9): 921-31.

41. Evans D, Mellins R, Lobach K, et al. Improving care for minority children with asthma: professional education in public health clinics. Pediatrics 1997; 99(2): 157-64.

42. McCarthy BD, Yood MU, Bolton MB, et al. Redesigning primary care processes to improve the offering of mammography. The use of clinic protocols by nonphysicians. J Gen Intern Med 1997; 12(6): 357-63.

43. Keyserling TC, Ammerman AS, Davis CE, et al. A randomized controlled trial of a physician-directed treatment program for low-income patients with high blood cholesterol: the Southeast Cholesterol Project. Arch Fam Med 1997; 6(2): 135-45.

44. Burack RC, Gimotty PA, George J, et al. How reminders given to patients and physicians affected pap smear use in a health maintenance organization: results of a randomized controlled trial. Cancer 1998; 82(12): 2391-400.

45. Harris LE, Luft FC, Rudy DW, et al. Effects of multidisciplinary case management in patients with chronic renal insufficiency. Am J Med 1998; 105(6): 464-71.

46. Allen B Jr, Pederson LL, and Leonard EH. Effectiveness of physicians-in-training counseling for smoking cessation in African Americans. J Natl Med Assoc 1998; 90(10): 597-604.

47. Manfredi C, Czaja R, Freels S, et al. Prescribe for health. Improving cancer screening in physician practices serving low-income and minority populations. Arch Fam Med 1998; 7(4): 329-37.

48. Dietrich AJ, Tobin JN, Sox CH, et al. Cancer early-detection services in community health centers for the underserved. A randomized controlled trial. Arch Fam Med 1998; 7(4): 320-7; discussion 328.

49. Ahluwalia LS, Gibson CA, Kenney RE, et al. Smoking status as a vital sign. J Gen Intern Med 1999; 14: 402-408.

50. Dexter PR, Wolinsky FD, Gramelspacher GP, et al. Effectiveness of computer-generated reminders for increasing discussions about advance directives and completion of advance directive forms. A randomized, controlled trial. Ann Intern Med 1998; 128(2): 102-10.

51. Gielen AC, Wilson ME, McDonald EM, et al. Randomized trial of enhanced anticipatory guidance for injury prevention. Arch Pediatr Adolesc Med 2001; 155(1): 42-9.

52. Harris R, Mackenzie T, Leeman-Castillo B, et al. Optimizing antibiotic prescribing for acute respiratiory tract infections in an urban urgent care clinic. J Gen Intern Med 2003; 18: 326-334.

53. Miranda J, Duan N, Sherbourne C, et al. Improving care for Minorities: Can Quality Improvement Interventions Improve Care and Outcomes for Depressed Minorites? Results of a Randomized, Controlled Trial. Health Serv Res 2003; 38(2): 613-630.

54. Burack RC, Gimotty PA, Simon M, et al. The effect of adding Pap smear information to a mammography reminder system in an HMO: results of randomized controlled trial. Prev Med 2003; 36(5): 547-54.

55. Stumphauzer JS, Davis LC. Training community-based, Asian-American mental health personnel in behavior modification. J Community Psychol 1983; 11(3): 253-8.

56. Lindquist GJ. A cross-cultural experience: comparative study in nursing and health care. J Nurs Educ 1984; 23(5): 212-4.

57. Frank-Stromborg M, Johnson J, and McCorkle R. A program model for nurses involved with cancer education of black Americans. J Cancer Educ 1987; 2(3): 145-51.

58. Mao C, Bullock CS, Harway EC, et al. A workshop on ethnic and cultural awareness for second-year students. J Med Educ 1988; 63(8): 624-8.

59. Copeman RC. Medical students, Aborigines and migrants: evaluation of a teaching programme. Med J Aust 1989; 150(2): 84-7.

60. Felder E. Baccalaureate and associate degree student nurses' cultural knowledge of and attitudes toward black American clients. J Nurs Educ 1990; 29(6): 276-82.

61. Wade P, Berstein B. Culture sensitivity training and counselor's race: effects on black female client's perceptions and attrition. J Couns Psychol 1991; 38: 9-15.

62. Barton JA, Brown NJ. Evaluation study of a transcultural discovery learning model. Public Health Nurs 1992; 9(4): 234-41.

63. Rubenstein HL, O'Connor BB, Nieman LZ, et al. Introducing students to the role of folk and popular health belief- systems in patient care. Acad Med 1992; 67(9): 566-8.

64. Marvel MK, Grow M, and Morphew P. Integrating family and culture into medicine: a family systems block rotation. Fam Med 1993; 25(7): 441-442.

65. Rooda L, Gay G. Staff development for culturally sensitive nursing care. J Nurs Staff Dev 1993; 9(6): 262-5.

66. Bond ML, Jones ME. Short-term cultural immersion in Mexico. Nurs Health Care 1994; 15(5): 248-53.

67. Nora LM, Daugherty SR, Mattis-Peterson A, et al. Improving cross-cultural skills of medical students through medical school-community partnerships. West J Med 1994; 161(2): 144-7.

68. Douglas KC, Lenahan P. Ethnogeriatric assessment clinic in family medicine. Fam Med 1994; 26(6): 372-5.

69. Erkel EA, Nivens AS, and Kennedy DE. Intensive immersion of nursing students in rural interdisciplinary care. J Nurs Educ 1995; 34(8): 359-65.

70. Campinha-Bacote J, Yahle T, and Langenkamp M. The challenge of cultural diversity for nurse educators. J Contin Educ Nurs 1996; 27(2): 59-64.

71. Alpers RR, Zoucha R. Comparison of cultural competence and cultural confidence of senior nursing students in a private southern university. J Cult Divers 1996; 3(1): 9-15.

72. Williamson E, Stecchi JM, Allen BB, et al. Multiethnic experiences enhance nursing students' learning. J Community Health Nurs 1996; 13(2): 73-81.

73. Gany F, de Bocanegra HT. Maternal-child immigrant health training: changing knowledge and attitudes to improve health care delivery. Patient Educ Couns 1996; 27(1): 23-31.

74. Culhane-Pera KA, Reif C, Egli E, et al. A curriculum for multicultural education in family medicine. Fam Med 1997; 29(10): 719-23.

75. Rolls C, Inglis A, and Kristy S. Study abroad programs: creating awareness of and changing attitudes to nursing, health and ways of living in other cultures. Contemp Nurse 1997; 6(3-4): 152-6.

76. Flavin C. Cross-cultural training for nurses: a research-based education project. Am J Hosp Palliat Care 1997 May-Jun; 14(3): 121-6.

77. Farnill D, Todisco J, Hayes SC, et al. Videotaped interviewing of non-English speakers: training for medical students with volunteer clients. Med Educ 1997; 31(2): 87-93.

78. Lockhart JS, Resick LK. Teaching cultural competence. The value of experiential learning and community resources. Nurse Educ 1997; 22(3): 27-31.

79. Oneha MF, Sloat A, Shoultz J, et al. Community partnerships: redirecting the education of undergraduate nursing students. J Nurs Educ 1998; 37(3): 129-35.

80. Berman A, Manning MP, Peters E, et al. A template for cultural diversity workshops. Oncol Nurs Forum 1998; 25(10): 1711-8.

81. Haloburdo EP, Thompson MA. A comparison of

international learning experiences for baccalaureate nursing students: developed and developing countries. J Nurs Educ 1998; 37(1): 13-21.

82. Underwood SM. Development of a cancer prevention and early detection program for nurses working with African Americans. J Contin Educ Nurs 1999; 30(1): 30-6.

83. Bengiamin MI, Downey VW, and Heuer LJ. Continuing education. Transcultural healthcare: a phenomenological study of an educational experience. J Cult Divers 1999; 6(2): 60-8.

84. Jeffreys MR, Smodlaka I. Changes in students' transcultural self-efficacy perceptions following an integrated approach to culture care. J Multicul Nurs Health 1999; 5(2): 6-12.

85. Briscoe VJ, Pichert JW. Evaluation of a program to promote diabetes care via existing agencies in African American communities. ABNF J 1999; 10(5): 111-5.

86. St Clair A, McKenry L. Preparing culturally competent practitioners. J Nurs Educ 1999; 38(5): 228-34.

87. Hadwiger SC. Cultural competence case scenarios for critical care nursing education. Nurse Educ 1999; 24(5): 47-51.

88. Napholz L. A comparison of self-reported cultural competency skills among two groups of nursing students: implications for nursing education. J Nurs Educ 1999; 38(2): 81-3.

89. Frisch NC. An international nursing student exchange program: an educational experience that enhanced student cognitive development. J Nurs Educ 1990; 29(1): 10-2.

90. Haq C, Rothenberg D, Gjerde C, et al. New world views: preparing physicians in training for global health work. Fam Med 2000; 32(8): 566-72.

91. Scisney-Matlock M. Systematic methods to enhance diversity knowledge gained: a proposed path to professional richness. J Cult Divers 2000; 7(2): 41-7.

92. Tomlinson-Clarke S. Assessing outcomes in a multicultural training course: A qualitative study. Couns Psychol 2000; 13(2): 221-231.

93. Gallagher Thompson D, Haynie D, Takagi KA, et al. Impact of an Alzheimer's disease education program: focus on Hispanic families. Gerontol Geriatr Educ 2000; 20(3): 25-40.

94. Lasch KE, Wilkes G, Lee J, et al. Is hands-on experience more effective than didactic workshops in postgraduate cancer pain education? J Cancer Educ 2000; 15(4): 218-22.

95. Inglis A, Rolls C, and Kristy S. The impact on attitudes towards cultural difference of participation in a health focused study abroad program. Contemp Nurse 2000; 9(3-4): 246-55.

96. Godkin MA, Savageau JA. The effect of a global multiculturalism track on cultural competence of preclinical medical students. Fam Med 2001; 33(3): 178-86.

97. Sinnott MJ, Wittmann B. An introduction to indigenous health and culture: the first tier of the Three Tiered Plan. Aust J Rural Health 2001; 9(3): 116-20.

98. Smith LS. Evaluation of an educational intervention to increase cultural competence among registered nurses. J Cult Divers 2001; 8(2): 50-63.

99. Velde BP, Wittman PP. Helping occupational therapy students and faculty develop cultural competence. Occ Ther Health Car 2001; 13(3-4): 23-32.

100. Way BB, Stone B, Schwager M, et al. Effectiveness of the New York State Office of Mental Health Core Curriculum: Direct care staff training. Psychiatr Rehabil J 2002; 25(4): 398-402.

101. Browne CV, Braun KL, Mokuau N, et al. Developing a multisite project in geriatric and/or gerontological education with emphases in interdisciplinary practice and cultural competence. Gerontologist 2002; 42(5): 698-704.

102. Tang TS, Fantone JC, Bozynski ME, et al. Implementation and evaluation of an undergraduate Sociocultural Medicine Program. Acad Med 2002; 77(6): 578-85.

103. Blackford J, Street A. Cultural conflict: the impact of western feminism(s) on nurses caring for women of non-English speaking background. J Clin Nurs 2002; 11(5): 664-71.

104. Jeffreys MR. A transcultural core course in the clinical nurse specialist curriculum. Clin Nurse Spec 2002; 16(4): 195-202.

105. Underwood SM, Dobson A. Cancer prevention and early detection program for educators: reducing the cancer burden of among African Americans within the academic arena. J Natl Black Nurses Assoc 2002; 13(1): 45-55.

106. Mazor SS, Hampers LC, Chande VT, et al. Teaching Spanish to pediatric emergency physicians: Effects on patient satisfaction. Arch Pediatr Adolesc Med 2002; 156(7): 693-695.

107. Ryan M, Ali N, and Carlton KH. Community of Communities: an electronic link to integrating cultural diversity in nursing curriculum. J Prof Nurs 2002; 18(2): 85-92.

108. Hansen ND. Teaching cultural sensitivity in psychological assessment: a modular approach used in a distance education program. J Pers Assess 2002; 79(2): 200-6.

109. Chevannes M. Issues in educating health professionals to meet the diverse needs of patients and other service users from ethnic minority groups. J Adv Nurs 2002; 39(3): 290-8.

110. Godkin M, Savageau J. The effect of medical students' international experiences on attitudes toward serving underserved multicultural populations. Fam Med 2003; 35(4): 273-8.

111. Crandall SJ, George G, Marion GS, et al. Applying theory to the design of cultural competency training for medical students: a case study. Acad Med 2003; 78(6): 588-94.

112. Beagan BL. Teaching Social and Cultural Awareness to Medical Students: "It's All Very Nice to Talk about It in Theory, But Ultimately It Makes No Difference". Acad Med 2003; 78(6): 605-14.

113. Drouin J, Rivet C. Training medical students to communicate with a linguistic minority group. Acad Med 2003; 78(6): 599-604.

114. Dowell A, Crampton P, and Parkin C. The first sunrise: an experience of cultural immersion and community health needs assessment by undergraduate medical students in New Zealand. Med Educ 2001; 35(3): 242-9.

115. Ryan M, Twibell R, Brigham C, et al. Learning to care for clients in their world, not mine. J Nurs Educ 2000; 39(9): 401-8.

116. Warner JR. Cultural competence immersion experiences: public health among the Navajo. Nurse Educ 2002; 27(4): 187-90.

117. Wendler MC, Struthers R. Bridging culture on-line: Strategies for teaching cultural sensitivity. J Prof Nurs 2002; 18(6): 320-7.

118. Dogra N. The development and evaluation of a programme to teach cultural diversity to medical undergraduate students. Med Educ 2001; 35(3): 232-41.

119. Dolhun EP, Muñoz C, and Grumbach K. Cross-cultural Education in U.S. Medical Schools: Development of an Assessment Tool. Acad Med 2003; 78(6): 615-22.

120. Ulrey KL, Amason P. Intercultural communication between patients and health care providers: an exploration of intercultural communication effectiveness, cultural sensitivity, stress, and anxiety. Health Commun 2001; 13(4): 449-63.

121. Egger M, Juni P, Bartlett C, et al. How important are comprehensive literature searches and the assessment of trial quality in systematic reviews? Empirical study. Health Technol Assess 2003; 7(1): 1-76.

Listing of Excluded Articles

Affonso DD, Mayberry L, Inaba A, et al. Hawaiian-style "talkstory": psychosocial assessment and intervention during and after pregnancy. J Obstet Gynecol Neonatal Nurs 1996; 25(9): 737-42.
no evaluation of an intervention

Affonso DD, Mayberry LJ, Inaba A, et al. Neighborhood women's health watch: partners in community care. Adv Pract Nurs Q 1995; 1(3): 34-40.
not targeted to healthcare providers or organizations

Ailinger RL, Zamora L, Molloy S, et al. Nurse practitioner students in Nicaragua. Clin Excell Nurse Pract 2000; 4(4): 240-4.
no evaluation of an intervention

Albritton TA, Wagner PJ. Linking cultural competency and community service: a partnership between students, faculty, and the community. Acad Med 2002; 77(7): 738-9.
no evaluation of an intervention

Alexander M. Cinemeducation: An In ovatine approach to teaching multi-cultural dicersity in medicine. Annals of behavioral science and medical education 1995; 2(1): 23-28.
no evaluation of an intervention

Andersen MD. Personalized nursing: an effective intervention model for use with drug-dependent women in an emergency room. Int J Addict 1986; 21(1): 105-22.
not targeted to healthcare providers or organizations

Badger TA, Cardea JM, Biocca LJ, et al. Assessment and management of depression: an imperative for community-based practice. Arch Psychiatr Nurs 1990; 4(4): 235-41.
other: duplicate

Badger TA, Mishel MH, Biocca LJ, et al. Depression assessment and management: evaluating a community-based mental health training program for nurses. Public Health Nurs 1991; 8(3): 170-5.
not relevant to minority health

Bahry VJ, Fullerton JT, and Lops VR. Provision of comprehensive perinatal services through rural outreach: A model program. J Rural Health 1989; 5(4): 387-396.
only quality (Q1) and not RCT or concurrent CCT

Baker SS, Burkhalter NC. Teaching transcultural nursing in a transcultural setting. J Transcult Nurs 1996; 7(2): 10-3.
no evaluation of an intervention

Baldwin D, Nelms T. Difficult dialogues: impact on nursing education curricula. J Prof Nurs 1993; 9(6): 343-6.
no evaluation of an intervention

Bardack MA, Thompson SH. Model prenatal program of Rush Medical College at St. Basil's Free Peoples Clinic, Chicago. Public Health Rep 1993; 108(2): 161-5.
no evaluation of an intervention

Bartz R. Beyond the biopsychosocial model: new approaches to doctor-patient interactions. J Fam Pract 1999; 48(8): 601-7.
no original data

Beisecker AE, Hayes J, Ashworth JK, et al. Providing information about breast cancer via public forums. Cancer Detect Prev 1997; 21(4): 370-9.
not relevant to minority health

Bengiamin MI, Downey VW, and Heuer LJ. Transcultural healthcare: a phenomenological study of an educational experience. J Cult Divers 1999; 6(2): 60-6; quiz 67-8.
not targeted to healthcare providers or organizations

Benoliel JQ. Death influence in clinical practice: a course for graduate students. Death Education 1982; 5(4): 327-346.
not relevant to minority health

Berlin EA, Fowkes Jr WC. A teaching framework for cross-cultural health care. Application in family practice. West J Med 1983; 139(6): 934-938.
no original data

Bidigare SA, Ellis AR. Family physicians' role in recruitment of organ donors. Arch Fam Med 2000; 9(7): 601-5.
not relevant to minority health

Bittle M, Duggleby W, and Ellison P. Implementation of the essential elements of service learning in three nursing courses. J Nurs Educ 2002; 41(3): 129-32.
no original data

Blackford J, Street A. Problem-based learning: an educational strategy to support nurses working in a multicultural community. Nurse Educ Today 1999; 19(5): 364-72.
no evaluation of an intervention

Blue AV, Kern DH, Chessman AW, et al. A collaborative clerkship with a focus on rural community health. J S C Med Assoc 2001; 97(9): 383-4, 387-9.
no evaluation of an intervention

Boekeloo BO, Schamus LA, Simmens SJ, et al. A STD/HIV prevention trial among adolescents in managed care. Pediatrics 1999; 103(1): 107-15.
only quality (Q1) and not RCT or concurrent CCT

Bogden PE, Abbott RD, Williamson P, et al. Comparing standard care with a physician and pharmacist team approach for uncontrolled hypertension. J Gen Intern Med 1998; 13(11): 740-5.
not relevant to minority health

Bonner S, Zimmerman BJ, Evans D, et al. An individualized intervention to improve asthma management among urban Latino and African-American families. J Asthma 2002; 39(2): 167-79.
not targeted to healthcare providers or organizations

Bowen J, Yaste C. Effect of a stroke protocol on hospital costs of stroke patients. Neurolog 1994; 44(10): 1961-4.
only quality (Q1) and not RCT or concurrent CCT

Bravo M, Canino GJ, Rubio-Stipec M, et al. A cross-cultural adaptation of a psychiatric epidemiologic instrument: the diagnostic interview schedule's adaptation in Puerto Rico. Cult Med Psychiatry 1991; 15(1): 1-18.
not targeted to healthcare providers or organizations

Brill JR, Ohly S, and Stearns MA. Training community-responsive physicians. Acad Med 2002; 77(7): 747.
meeting abstract

Burack R, Gimmotty P, Moncrease A, et al. The intial and sustained efffectiveness of an intervention to improve breast cancer control in an inner-city health department. Clin Res 1992; 40: 607A.
meeting abstract

Burack RC, Gimotty PA, Stengle W, et al. Detroit's avoidable mortality project: breast cancer control for inner-city women. Public Health Rep 1989; 104(6): 527-35.
no evaluation of an intervention

Burns IT, Zimmerman RK, and Santibanez TA. Effectiveness of chart prompt about immunizations in an urban health center. J Fam Pract 2002; 51(12): 1018.
not relevant to minority health

Burrows A. Patient-centred nursing care in a multi-racial society: the relevance of ethnographic perspectives in nursing curricula. J Adv Nurs 1983; 8(6): 477-85.
no original data

Buttriss G, Kuiper R, and Newbold B. The use of a homeless shelter as a clinical rotation for nursing students. J Nurs Educ 1995; 34(8): 375-7.
not relevant to minority health

Caggiula AW, Watson JE, Kuller LH, et al. Cholesterol-lowering intervention program. Effect of the step I diet in community office practices. Arch Intern Med 1996; 156(11): 1205-13.
not relevant to minority health

Carpio BA, Majumdar B. Experiential learning: an approach to transcultural education for nursing. J Transcult Nurs 1993; 4(2): 4-11.

no evaluation of an intervention

Chrisman N J. Backyard cultural change: diversity workshops at the institution level. J Multicul Nurs Health 1998; 4(1): 6-10.
no evaluation of an intervention

Chrisman NJ, Schultz PR. Transforming health care through cultural competence training IN: Cultural diversity in nursing: issues, strategies, and outcomes (Dienemann JA). 1997.
no original data

Chugh U, Dillmann E, Kurtz SM, et al. Multicultural issues in medical curriculum: implications for Canadian physicians. Med Teach 1993; 15(1): 83-91.
no evaluation of an intervention

Chussil JT. Cultural competency in nursing. Dermatol Nurs 1998; 10(6): 393.
does not include human data

Cultural diversity in the nursing curriculum: a guide for implementation. 1986.
no original data

Improving minority health outcomes through culturally-specific care. Nursing Trends and Issues 1997; 2(3): 1-8.
no intervention

Practice notes: strategies in health education. Program: Institute for Cross Cultural Competence in the Healthcare System. Health Educ Behav 2001; 28(5): 530-1.
no evaluation of an intervention

Report and recommendations for the first national conference on teaching of transcultural nursing. J Transcult Nurs 1992; 4(1): 41-2.
does not include human data

Waerea te ara Ri te ora... a bicultural approach to nursing... Maori representation. N Z Nurs J 1987; 80(3): 17.
no original data

Clinton JF. Cultural diversity and health care in America: knowledge fundamental to cultural competence in baccalaureate nursing students. J Cult Divers 1996; 3(1): 4-8.
no evaluation of an intervention

Cook P R, Cullen JA. Diversity as a value in undergraduate nursing education. Nurs Health Care Perspect. 2000; 21(4): 178-83.
no evaluation of an intervention

Costanza ME, Stoddard AM, Luckmann R, et al. Promoting mammography: results of a randomized trial of telephone counseling and a medical practice intervention. Am J Prev Med 2000; 19(1): 39-46.
not relevant to minority health

Crampton P, Dowell A, Parkin C, et al. Combating effects of racism through a cultural immersion medical education program. Acad Med 2003; 78(6): 595-8.
other: duplicate

Cunningham Warburton PA. A study of the relationship between cross-cultural training, the Scale to Assess World Views, and the quality of care given by nurses in a psychiatric setting. 1988.
other: non-pubilshed

Daddy J, Clegg A. Cultural sensitivity: a practical approach to improving services. Nurs Stand 2001; 15(33): 39-40.
no evaluation of an intervention

Dana R H, Aguilar-K itibutr A, Diaz-Vivar N, et al. A teaching method for multicultural assessment: psychological report contents and cultural competence. J Pers Assess 2002; 79(2): 207-15.
not targeted to healthcare providers or organizations

Das MK, Bhattacharyya N. Paediatric immunisation: Special emphasis on measles and MMR vaccinations. J Indian Med Assoc 2002; 100(5): 320-321.
no intervention

Davidson MB, Karlan VJ, and Hair TL. Effect of a pharmacist-managed diabetes care program in a free medical clinic. Am J Med Qual 2000; 15(4): 137-42.
only quality (Q1) and not RCT or concurrent CCT

Dedier J, Penson R, Williams W, et al. Race, ethnicity, and the patient-caregiver relationship. Oncologist 1999; 4(4): 325-331.
no evaluation of an intervention

Delgado M. Alcohol use/abuse among Latinos: Issues and examples of culturally competent services: Introduction. Alcoholism Treatment Quarterly 1998; 16(1-2): 1-3.
no original data

Delgado M. Natural support systems and AOD services to communities of color: A California case example. Alcoholism Treatment Quarterly 1995; 13(4): 13-23.
not targeted to healthcare providers or organizations

DeSantis L. The relevance of transcultural nursing to international nursing. Int Nurs Rev 1988; 35(4): 110-2, 116.
no original data

DiCicco Bloom B. Practical approaches to developing cultural competency. Home Health Care Management and Practice 2000; 12(2): 30-7.
no intervention

Dietrich AJ, O'Connor GT, Keller A, et al. Cancer: improving early detection and prevention. A community practice randomised trial. BMJ 1992; 304(6828): 687-91.
not relevant to minority health

Dohlie MB, Mielke E, Bwire T, et al. COPE (client-oriented, provider-efficient), a model for building community partnerships that improve care in East Africa. J Healthc Qual 2000; 22(5): 34-39.
does not apply to any research question

Dowd SB, Poole VL, Davidhizar R, et al. Death, dying and grief in a transcultural context: application of the Giger and Davidhizar Assessment Model. Hosp J 1998; 13(4): 33-56.
no evaluation of an intervention

Drouin J, Jean P. Educating future physicians for a minority population: a French-language stream at the University of Ottawa. Acad Med 2002; 77(3): 217-21.
no evaluation of an intervention

Dyck I, Forwell S. Occupational therapy students' first year fieldwork experiences: Discovering the complexity of culture. Can J Occup Ther 1997; 64(4): 185-196.
no intervention

Elliott BA, Johnson KM, Elliott TE, et al. Enhancing Cancer Pain Control among American Indians (ECPCAI): a study of the Ojibwe of Minnesota. J Cancer Educ 1999; 14(1): 28-33.
no evaluation of an intervention

Ferrell BR, Grant M, Ritchey KJ, et al. The Pain Resource Nurse Training Program: A unique approach to pain management. Journal of Pain & Symptom Management. 1993; 8(8): 549-556.
not relevant to minority health

Fisher S, Groce SB. Doctor-patient negotiation of cultural assumptions. Sociol Health Illn 1985; 7(3): 342-374.
not relevant to minority health

Flores G. Culture and the patient-physician relationship: achieving cultural competency in health care. J Pediatr 2000; 136(1): 14-23.
no original data

Fraser HC, Kutner JS, and Pfeifer MP. Senior medical students' perceptions of the adequacy of education on end-of-life issues. J Palliat Med 2001; 4(3): 337-43.
no intervention

Freeman P. A culturally orientated curriculum for Aboriginal health workers. World Health Forum 1993; 14(3): 262-6.
no evaluation of an intervention

Friedman RH, Kazis LE, Jette A, et al. A telecommunications system for monitoring and counseling patients with hypertension. Impact on medication adherence and blood pressure control. Am J Hypertens 1996; 9(4 Pt 1): 285-92.
not relevant to minority health

Gara-Trevino ES. A psychiatric curriculum directed to the care of the hospanic patient. Acad Psychiatry 1997; 21(1): 1-10.
no evaluation of an intervention

Gentry AF, Fudge KA, Wellman G, et al. A novel

comprehensive DUE program--five years of experience. Top Hosp Pharm Manage 1991; 11(2): 18-30.
not relevant to minority health

Gifford DR, Holloway RG, Frankel MR, et al. Improving adherence to dementia guidelines through education and opinion leaders. A randomized, controlled trial. Ann Intern Med 1999; 131(4): 237-46.
not relevant to minority health

Goiceochea-Balbona A. Culturally-specific health care model for ensuring helath care use by rural, ethnically diverse families affected by HIV/AIDS. Health Soc Work 1997; 22(3): 172-180.
no evaluation of an intervention

Guyer B, Hughart N, Strobino D, et al. Assessing the impact of pediatric-based development services on infants, families, and clinicians: challenges to evaluating the Health Steps Program. Pediatrics 2000; 105(3): E33.
no evaluation of an intervention

Hanna K. Multicultural considerations for the advanced practice nurse anesthetist in the preoperative teaching area. Nurs Adm Q 1997; 21(4): 55-60.
no intervention

Headrick LA, Speroff T, Pelecanos HI, et al. Efforts to improve compliance with the National Cholesterol Education Program guidelines. Results of a randomized controlled trial. Arch Intern Med 1992; 152(12): 2490-6.
not relevant to minority health

Healton C, Taylor S, Burr C, et al. The impact of patient education about the effect of zidovudine on HIV perinatal transmission: knowledge gain, attitudes, and behavioral intent among women with and at risk of HIV. Am J Prev Med 1996; 12(4 Suppl): 47-52.
not targeted to healthcare providers or organizations

Heins HC Jr, Nance NW, McCarthy BJ, et al. A randomized trial of nurse-midwifery prenatal care to reduce low birth weight. Obstet Gynecol 1990; 75(3 Pt 1): 341-5.
not targeted to healthcare providers or organizations

Hendrickson WD, Wood PR, Hidalgo HA, et al. Implementation of a physician education intervention. The Childhood Asthma Project. Arch Pediatr Adolesc Med 1994; 148(6): 595-601.
only quality (Q1) and not RCT or concurrent CCT

Herman CJ, Speroff T, and Cebul RD. Improving compliance with breast cancer screening in older women. Results of a randomized controlled trial. Arch Intern Med 1995; 155(7): 717-22.
not relevant to minority health

Herman CJ, Speroff T, and Cebul RD. Improving compliance with immunization in the older adult: results of a randomized cohort study. J Am Geriatr Soc 1994; 42(11): 1154-9.
not relevant to minority health

Hernandez CA, Antone I, and Cornelius I. A grounded theory study of the experience of type 2 diabetes mellitus in First Nations adults in Canada. J Transcult Nurs 1999; 10(3): 220-8.
not targeted to healthcare providers or organizations

Hershey CO, Grant BJ. Controlled trial of a patient-completed history questionnaire: effects on quality of documentation and patient and physician satisfaction. Am J Med Qual 2002; 17(4): 126-35.
not targeted to healthcare providers or organizations

Hill MN, Bone LR, Hilton SC, et al. A clinical trial to improve high blood pressure care in young urban black men: recruitment, follow-up, and outcomes. Am J Hypertens 1999; 12(6): 548-54.
not targeted to healthcare providers or organizations

Hislop TG, Deschamps M, Teh C, et al. Facilitators and barriers to cervical cancer screening among Chinese Canadian women. Can J Public Health 2003; 94(1): 68-73.
no intervention

Hjelm K, Isacsson A, and Apelqvist J. Healthcare

professionals' perceptions of beliefs about health and illness in migrants with diabetes mellitus. Practical-Diabetes-International 1998; 15(8): 233-7.
no intervention

Houldin AD, Reville B, Boland BA, et al. Graduate education in oncology nursing for minorities. J Cancer Educ 2002; 17(4): 201-204.
does not apply to any research question

Humphreys T, Shofer FS, Jacobson S, et al. Preformatted charts improve documentation in the emergency department. Ann Emerg Med 1992; 21(5): 534-40.
not relevant to minority health

Huttlinger K, Keating SB. Understanding cultural diversity through a student exchange program. Nurse Educ 1991; 16(5): 29-33.
no evaluation of an intervention

Imperato PJ. A Third World international health elective for U.S. medical students. The 16-year experience of the State University of New York, Health Science Center at Brooklyn. J Community Health 1996; 21(4): 241-68.
no intervention

Jaber LA, Halapy H, Fernet M, et al. Evaluation of a pharmaceutical care model on diabetes management. Ann Pharmacother 1996; 30(3): 238-43.
not targeted to healthcare providers or organizations

Jackson D, Sullivan JR. Integrating the creative arts into a midwifery curriculum: a teaching innovation report. Nurse Educ Today 1999; 19(7): 527-32.
not relevant to minority health

Jacobson TA, Thomas DM, Morton FJ, et al. Use of a low-literacy patient education tool to enhance pneumococcal vaccination rates. A randomized controlled trial. JAMA 1999; 282(7): 646-50.
not targeted to healthcare providers or organizations

Jeffreys MR, O'Donnell M. Cultural discovery: an innovative philosophy for creative learning activities. J Transcult Nurs 1997; 8(2): 17-22.
no original data

Jeffs L. Research in progress: the impact of cultural safety nursing education on nursing and midwifery practice. Nurs Prax N Z 2001; 17(1): 44.
no original data

Jones ME, Bond ML, and Mancini ME. Developing a culturally competent work force: an opportunity for collaboration. J Prof Nurs 1998; 14(5): 280-7.
no evaluation of an intervention

Kaiser MM, Barry TL, and Kaiser KL. Using focus groups to evaluate and strengthen public health nursing population-focused interventions. J Transcult Nurs 2002; 13(4): 303-10.
only quality (Q1) and not RCT or concurrent CCT

Kamien M. Education in community medicine with an emphasis on the health of an Aboriginal community: a pilot project. Med J Aust 1975; 2(13): 509-13.
published prior to 1980

Kataoka-Yahiro M, Yoder M, and Cohen J. Ten steps to create an innovative community-based pediatric experience as part of a clinical practicum: a model. J Pediatr Nurs 1996; 11(5): 309-14.
no original data

Kater V. A tale of teaching in two cities. Int Nurs Rev 2000; 47(2): 121-5.
no evaluation of an intervention

Kavanagh K, Absalom K, Beil W Jr, et al. Connecting and becoming culturally competent: a Lakota example. ANS Adv Nurs Sci 1999; 21(3): 9-31.
no original data

Kavanagh K, Pope D, Weiss K, et al. Students experience the Pine Ridge South Dakota Reservation. Imprint 1995; 42(5): 48-51.
no original data

Kavanagh KH. Summers of no return: transforming care through a nursing field school. J Nurs Educ 1998; 37(2): 71-9.

no evaluation of an intervention

Kearnes DR. Impact of a nurse practitioner and physician collaborative practice on older adults admitted to a large urban hospital: differences in treatment and outcome. Nurse Pract 1994; 19(8): 32, 34-6.
not relevant to minority health

Keitz SA, Box TL, Homan RK, et al. Primary care for patients infected with human immunodeficiency virus: a randomized controlled trial. J Gen Intern Med 2001; 16(9): 573-82.
not relevant to minority health

Kirkpatrick MK, Brown S. Efficacy of an international exchange via the Internet. J Nurs Educ 1999; 38(6): 278-81.
not relevant to minority health

Knight RA, Remington PL. Training internal medicine residents to screen for domestic violence. J Womens Health Gend Based Med 2000; 9(2): 167-74.
not relevant to minority health

Kollar SJ, Ailinger RL. International clinical experiences: long-term impact on students. Nurse Educ 2002; 27(1): 28-31.
no evaluation of an intervention

Kristal L, Pennock PW, Foote SM, et al. Cross-cultural family medicine residency training. J Fam Pract 1983; 17(4): 683-7.
no evaluation of an intervention

Larkin GL, Rolniak S, Hyman KB, et al. Effect of an administrative intervention on rates of screening for domestic violence in an urban emergency department. Am J Public Health 2000; 90(9): 1444-8.
not relevant to minority health

Lavizzo-Mourey R, Mackenzie ER. Cultural competence: Essential measurements of quality for managed care organizations. Ann Intern Med 1996; 124(10): 919-921.
no original data

Lefley HP, Bestman EW. Public-academic linkages for culturally sensitive community mental health. Community Ment Health J 1991; 27(6): 473-88.
no original data

Leininger M. Culture care theory: a major contribution to advance transcultural nursing knowledge and practices. J Transcult Nurs 2002; 13(3): 189-92; discussion 200-1.
no original data

Leininger M. The significance of cultural concepts in nursing... originally published in Minnesota League for Nursing, vol. 10, no. 3, 3-12, in 1966, and in the Journal of Nursing Education (1967). J Transcult Nurs 1990; 2(1): 52-9 .
no intervention

Leininger M. Transcultural nurse specialists and generalists: new practitioners in nursing. J Transcult Nurs 1989; 1(1): 4-16 (18 ref).
no original data

Leonard PJ. Consciousness-raising groups as a multicultural awareness approach: an experience with counselor trainees. Cult Divers Ment Health 1996; 2(2): 89-98.
no evaluation of an intervention

Lie D, Rucker L, and Cohn F. Using literature as the framework for a new course. Acad Med 2002; 77(11): 1170.
no evaluation of an intervention

Lindquist GJ. Integration of international and transcultural content in nursing curricula: a process for change. J Prof Nurs 1990; 6(5): 272-9.
no intervention

Little M, Saul GD, Testa K, et al. Improving pregnancy outcome and reducing avoidable clinical resource utilization through telephonic perinatal care coordination. Lippincotts Case Manag 2002; 7(3): 103-12.
not targeted to healthcare providers or organizations

Loue S, Lloyd L, and Loh L. HIV prevention in U.S. Asian Pacific Islander communities: an innovative approach. J Health Care Poor Underserved 1996; 7(4): 364-76.
no evaluation of an intervention

MacPhee D, Kreutzer JC, and Fritz JJ. Infusing a

diversity perspective into human development courses. Child Dev 1994; 65(2 Spec No): 699-715.
not targeted to healthcare providers or organizations

Martey JO, Elkins TE, Wilson JB, et al. Innovative community-based postgraduate training for obstetrics and gynecology in west Africa. Obstet Gynecol 1995; 85(6): 1042-6.
does not apply to any research question

Mawn B, Pakkala K. Immunization update: a community-based nursing education program. J Contin Educ Nurs 2000; 31(3): 101-10.
not relevant to minority health

McCaskill Stevens W, Pinto H, Marcus AC, et al. Recruiting minority cancer patients into cancer clinical trials: a pilot project involving the Eastern Cooperative Oncology Group and the National Medical Association. J Clin Oncol 1999; 17(3): 1029-39.
does not apply to any research question

McGee P. Teaching transcultural care: a guide for teachers of nursing and health care. 1992.
no intervention

Moore ML. From randomized trial to community-focused practice. Image J Nurs Sch 1999; 31(4): 349-54.
no evaluation of an intervention

Morell VW, Sharp PC, and Crandall SJ. Creating student awareness to improve cultural competence: Creating the critical incident. Med Teach 2002; 24(5): 532-534.
no evaluation of an intervention

Muender MM, Moore ML, Chen GJ, et al. Cost-benefit of a nursing telephone intervention to reduce preterm and low-birthweight births in an African American clinic population. Prev Med 2000; 30(4): 271-6.
not targeted to healthcare providers or organizations

Mundinger MO, Kane RL, Lenz ER, et al. Primary care outcomes in patients treated by nurse practitioners or physicians: a randomized trial. JAMA 2000; 283(1): 59-68.
does not apply to any research question

Narayanasamy A. Transcultural nursing. The ACCESS model: a transcultural nursing practice framework. Br J Nurs 2002; 11(9): 643-50.
no intervention

Nelson WA, Wood SO, and Nalepka CD. Development of a culturally sensitive rural practicum. Nurse Educ 1993; 18(3): 10-3.
not relevant to minority health

Nestel D. Evaluation of a communication skills course: Cultural relevance of the patient-centred interview in a Hong Kong Chinese setting. Med Teach 2001; 23(2): 212-214.
does not apply to any research question

Nguyen T, Vo PH, McPhee SJ, et al. Promoting early detection of breast cancer among Vietnamese-American women. Results of a controlled trial. Cancer 2001; 91(1 Suppl): 267-73.
only quality (Q1) and not RCT or concurrent CCT

Nyamathi A, Flaskerud JH, Leake B, et al. Evaluating the impact of peer, nurse case-managed, and standard HIV risk-reduction programs on psychosocial and health-promoting behavioral outcomes among homeless women. Res Nurs Health 2001; 24(5): 410-22.
not targeted to healthcare providers or organizations

Nyamathi AM, Flaskerud J, Bennett C, et al. Evaluation of two AIDS education programs for impoverished Latina women. AIDS Educ Prev 1994; 6(4): 296-309.
not targeted to healthcare providers or organizations

O'Brien LA, Grisso JA, Maislin G, et al. Nursing home residents' preferences for life-sustaining treatments. JAMA 1995; 274(22): 1775-9.
not targeted to healthcare providers or organizations

O'Connell DL, Henry D, and Tomlins R. Randomised controlled trial of effect of feedback on general practitioners' prescribing in Australia. BMJ 1999; 318(7182): 507-11.
not relevant to minority health

O'Hara EM, Zhan L. Cultural and pharmacologic considerations when caring for Chinese elders. J Gerontol Nurs 1994; 20(10): 11-6 (9 ref).
no intervention

Ofori-Adjei D, Arhinful DK. Effect of training on the clinical management of malaria by medical assistants in Ghana. Soc Sci Med 1996; 42(8): 1169-76.
does not apply to any research question

Olds DL, Henderson CR Jr, Tatelbaum R, et al. Improving the life-course development of socially disadvantaged mothers: a randomized trial of nurse home visitation. Am J Public Health 1988; 78(11): 1436-45.
not targeted to healthcare providers or organizations

Olson LL. Commentary on Resolving conflict in a multicultural nursing department [original article by Martin K et al appears in NURS MANAGE 1994;25(1):49-51]. AONE's-Leadership-Prospectives 1994; 2(3): 14.
no evaluation of an intervention

Oneha MFM. Ka mauli O ka `aina a he mauli kanaka (the life of the land is the life of the people): an ethnographic study from a Hawaiian sense of place. 2000.
not targeted to healthcare providers or organizations

Perez-Cuevas R, Guiscafre H, Munoz O, et al. Improving physician prescribing patterns to treat rhinopharyngitis. Intervention strategies in two health systems of Mexico. Soc Sci Med 1996; 42(8): 1185-94.
only quality (Q2) and not conducted in the US

Persaud DI, Barnett SE, Weller SC, et al. An asthma self-management program for children, including instruction in peak flow monitoring by school nurses. J Asthma 1996; 33(1): 37-43.
not targeted to healthcare providers or organizations

Peters AL, Davidson MB, and Ossorio RC. Management of patients with diabetes by nurses with support of subspecialists. HMO Pract 1995; 9(1): 8-13.
not relevant to minority health

Peterson R, Smith J. A patient care team approach to multicultural patient care issues. J Nurs Care Qual 1996; 10(3): 75-9.
no evaluation of an intervention

Philips BU, Mahan JM, and Perry RR. Minority recruitment to the health professions: a matched comparison six-year follow-up. J Med Educ 1981; 56(9 I): 742-747.
not targeted to healthcare providers or organizations

Philis-Tsimikas A, Walker C. Improved care for diabetes in underserved populations. J Ambul Care Manage 2001; 24(1): 39-43.
not targeted to healthcare providers or organizations

Poteet GW. Ethnic diversity. J Nurs Adm 1986; 16(3): 6.
no original data

Pozen MW, D'Agostino RB, Selker HP, et al. A predictive instrument to improve coronary-care-unit admission practices in acute ischemic heart disease. A prospective multicenter clinical trial. N Engl J Med 1984; 310(20): 1273-8.
not relevant to minority health

Princeton JC. Promoting culturally competent nursing education. J Nurs Educ 1993; 32(5): 195-7.
no intervention

Ramsden I. Cultural safety in nursing education in Aotearoa (New Zealand). Nurs Prax NZ 1993; 8(3): 4-10.
no intervention

Rankin SB, Kappy MS. Developing therapeutic relationships in multicultural settings. Acad Med 1993; 68(11): 826-7.
no evaluation of an intervention

Reuben DB, Smith SR. Community health projects as part of a core clinical clerkship: teaching research skills in a community setting. J Community Health 1987; 12(4): 257-64.
not relevant to minority health

Riegel B, Carlson B, Glaser D, et al. Standardized telephonic case management in a Hispanic heart failure population: an effective intervention. Dis

Manage Health Outcomes 2002; 10(4): 241-9.
not targeted to healthcare providers or organizations

Rivero Kempf R. AT&T language line: educating transcultural nurses on federal mandates and interpreter use. J Transcult Nurs 1999; 10(2): 159-60.
not relevant to minority health

Roberts RR, Zalenski RJ, Mensah EK, et al. Costs of an emergency department-based accelerated diagnostic protocol vs hospitalization in patients with chest pain: a randomized controlled trial. JAMA 1997; 278(20): 1670-6.
not targeted to healthcare providers or organizations

Rogers MA, Small D, Buchan DA, et al. Home monitoring service improves mean arterial pressure in patients with essential hypertension. A randomized, controlled trial. Ann Intern Med 2001; 134(11): 1024-32.
not relevant to minority health

Rollman BL, Hanusa BH, Gilbert T, et al. The electronic medical record. A randomized trial of its impact on primary care physicians' initial management of major depression. Arch Intern Med 2001; 161(2): 189-97.
not relevant to minority health

Ryan M, Twibell RS. Outcomes of a transcultural nursing immersion experience: confirmation of a dimensional matrix. J Transcult Nurs 2002; 13(1): 30-9.
does not apply to any research question

Sadler GR, Nguyen F, Doan Q, et al. Strategies for reaching Asian Americans with health information. Am J Prev Med 1998; 14(3): 224-8.
not targeted to healthcare providers or organizations

Scholes J, Moore D. Clinical exchange: one model to achieve culturally sensitive care. Nurs Inq 2000; 7(1): 61-71.
not relevant to minority health

Schoonover SC, Bassuk EL, Smith R, et al. The use of videotape programs to teach interpersonal skills. J Med Educ 1983; 58(10): 804-10.
not relevant to minority health

Schraeder C, Shelton P, and Sager M. The effects of a collaborative model of primary care on the mortality and hospital use of community-dwelling older adults. J Gerontol A Biol Sci Med Sci 2001; 56(2): M106-12.
not relevant to minority health

Schwartzberg JG, Guttman R. Effect of training on physician attitudes and practices in home and community care of the elderly. Arch Fam Med 1997; 6(5): 439-44.
not relevant to minority health

Sebern MD. Cost and efficacy of pressure ulcer management in a metropolitan visiting nurse association. Decubitus 1989; 2(3): 58-9.
not targeted to healthcare providers or organizations

Selker HP, Beshansky JR, and Griffith JL. Use of the electrocardiograph-based thrombolytic predictive instrument to assist thrombolytic and reperfusion therapy for acute myocardial infarction. A multicenter, randomized, controlled, clinical effectiveness trial. Ann Intern Med 2002; 137(2): 87-95.
not relevant to minority health

Shadick KM. Development of a transcultural health education program for the Hmong. Clin 1993; 7: 48-53.
no original data

Shapiro J, Lie D. Using literature to help physician-learners understand and manage "difficult" patients. Acad Med 2000; 75(7): 765-8.
not relevant to minority health

Share L, Chaikin S, Pomeranets S, et al. Implementation of guidelines for preventing early onset group B streptococcal infection. Semin 2001; 25(2): 107-113.
only quality (Q1) and not RCT or concurrent CCT

Sharieff GQ, Hoecker C, and Silva PD. Effects of a pediatric emergency department febrile infant protocol on time to antibiotic therapy. J Emerg Med 2001.
not relevant to minority health

Sharma SB. Bridging the gap: anthropological brokerage in nursing care. 1988.
other: non-pubilshed

Shea S, Basch CE, Wechsler H, et al. The Washington Heights-Inwood Healthy Heart Program: a 6-year report from a disadvantaged urban setting. Am J Public Health 1996; 86(2): 166-71.
no original data

Sheales A. The Victorian Management Residency Programme: a student's perspective. Aust Health Rev 1992; 15(3): 345-53.
not relevant to minority health

Sheinfeld Gorin S, Gemson D, Ashford A, et al. Cancer education among primary care physicians in an underserved community. Am J Prev Med 2000; 19(1): 53-8.
only quality (Q1) and not RCT or concurrent CCT

Sherwood GD. Creating change through partnership: Developing continuing educational resources in rural areas. J Contin Educ Health Prof 1995; 15(2): 101-105.
no evaluation of an intervention

Shortell SM, Bennett CL, and Byck GR. Assessing the impact of continuous quality improvement on clinical practice: what it will take to accelerate progress. Milbank 1998; 76(4): 593-624, 510.
no evaluation of an intervention

Simon MS, Gimotty PA, Coombs J, et al. Factors affecting participation in a mammography screening program among members of an urban Detroit health maintenance organization. Cancer Detect Prev 1998; 22(1): 30-8.
not targeted to healthcare providers or organizations

Simon MS, Gimotty PA, Moncrease A, et al. The effect of patient reminders on the use of screening mammography in an urban health department primary care setting. Breast Cancer Res Treat 2001; 65(1): 63-70.
not targeted to healthcare providers or organizations

Slack MK, Cummings DM, Borrego ME, et al. Strategies used by interdisciplinary rural health training programs to assure community responsiveness and recruit practitioners. J Interprof Care 2002; 16(2): 129-38.
no evaluation of an intervention

Smith CA. The lived experience of care within the context of cultural diversity. J Holist Nurs 1994; 12(3): 282-90.
no intervention

Smith S. The Tex-Mex leap. Nurs Times 1998; 94(44): 38-9.
no original data

Smith SE. Increasing transcultural awareness: the McMaster-Aga Khan-CIDA Project workshop model. J Transcult Nurs 1997; 8(2): 23-31.
no evaluation of an intervention

Sommer S. Faculty forum. Multicultural nursing education. J Nurs Educ 2001; 40(6): 276-8.
no original data

Sookhoo D, Adams J, and Anionwu E. In the melting pot... educating students to become culturally competent. Nurs Times 2000; 96(29): 40-1.
no intervention

Soto-Greene M, Wright L, Gona OD, et al. Minority enrichment programs at the New Jersey Medical School: 26 years in review. Acad Med 1999; 74(4): 386-9.
not relevant to minority health

Spitzer A, Kesselring A, Ravid C, et al. Learning about another culture: project and curricular reflections... the care of Ethiopian Jews who immigrated to Israel. J Nurs Educ 1996; 35(7): 322-8.
no original data

Sterling RC, Gottheil E, Weinstein SP, et al. The effect of therapist/patient race- and sex-matching in individual treatment. Addiction 2001; 96(7): 1015-22.
no intervention

Stumpf SH, Bass K. Cross cultural communication to help physician assistants provide unbiased health care. Public Health Rep 1992; 107(1): 113-5.
no evaluation of an intervention

Taylor VM, Taplin SH, Urban N, et al. Community organization to promote breast cancer screening ordering by primary care physicians. J Community Health 1996; 21(4): 277-91.
not relevant to minority health

Thobaben M, Mattingly HJ. Cultural sensitivity: educating home healthcare nurses to be transcultural nurses. Home Healthc Nurse 1993; 11(4): 61-3.
no original data

Thompson JW. A curriculum for learning about American Indians and alaska natives in psychiatric residency program. Acad Psychiatry 1996; 20: 5-14.
no evaluation of an intervention

Ulrey KL, Amason P. Intercultural communication between patients and health care providers: an exploration of intercultural communication effectiveness, cultural sensitivity, stress, and anxiety. Health Commun 2001; 13(4): 449-63.
no intervention

Vest GW, Ronnau J, Lopez BR, et al. Alternative health practices in ethnically diverse rural areas: a collaborative research project. Health Soc Work 1997; 22(2): 95-100.
only quality (Q1) and not RCT or concurrent CCT

White JE, Begg L, Fishman NW, et al. Increasing cervical cancer screening among minority elderly. Education and on-site services increase screening. J Gerontol Nurs 1993; 19(5): 28-34.
not targeted to healthcare providers or organizations

Wilborn KP. A critical Heideggerian hermeneutic analysis of the meaning of nursing students' clinical experience in Haiti. 2000.
other: non-pubilshed

Yates M, Craddock E. Culturally sensitive care in a forensic setting. Nurs Times 1998; 94(26): 68-9.
no evaluation of an intervention

Appendixes

Appendix A: Search Strings and Priority Journals

Search Strategy for MEDLINE®

((minority groups[mh] OR ethnic groups[mh] OR urban health[mh] OR urban population[mh] OR minority[tiab] OR urban[tiab] OR inner-city[tiab] OR black*[tiab] OR african american*[tiab] OR mexican*[tiab] OR native*[tiab] OR indian*[tiab] OR latina[tiab] OR latino[tiab]) AND (nurs*[tiab] OR physician*[tiab] OR health professional*[tiab] OR health care provider*[tiab] OR health personnel[mh]) AND (randomized controlled trial [pt] OR controlled clinical trial [pt] OR randomized controlled trials [mh] OR random allocation [mh] OR double-blind method [mh] OR single-blind method [mh]) NOT (animal [mh] NOT human [mh])) OR ((cultura*[tiab] OR multicultural[tiab] OR transcultural[tiab] OR divers*[tiab] OR cultural diversity[mh] OR transcultural nursing[mh] OR ethnic[tw] OR minority[tw]) AND (competen*[tiab] OR sensitiv*[tiab] OR attitude*[tiab] OR experience[tiab] OR knowledge[tiab]) AND (education[mh] OR ed[sh] OR educat*[tiab] OR train*[tiab] OR curriculum[tiab]) AND (nurs*[tiab] OR physician*[tiab] OR health professional*[tiab] OR health care provider*[tiab] OR student*[tiab])) AND eng[la] AND 1980:2003[dp] NOT review[pt]

Search Strategy for the Cochrane CENTRAL Register of Controlled Trials

1 (minority or ethnic or (inner next city) or cultural) (1980 to current date)
2 ((health next professional) or physician or nurse) (1980 to current date)
3 1 and 2

Search Strategy for EMBASE

1	cultural.mp
2	"ETHNIC, RACIAL AND RELIGIOUS GROUPS"/ or ETHNIC DIFFERENCE/ or "ETHNIC OR RACIAL ASPECTS"/ or "ETHNIC AND RACIAL GROUPS"/ or ETHNIC GROUP/ or ethnic.mp.
3	MINORITY GROUP/ or minority.mp.
4	1 or 2 or 3
5	exp EDUCATION/ or education.mp.
6	4 and 5
7	health professional.mp. or Health Practitioner/
8	(physician or nurse).mp.
9	STUDENT/
10	7 or 8 or 9
11	6 and 10
12	cultural competence.mp
13	11 or 12
14	limit 13 to (human and english language)

Search Strategy for the Cumulative Index of Nursing and Alliance Health Literature (CINAHL)

((minority in TI,AB or ethnic in TI,AB or urban in TI,AB or inner-city in TI,AB or "Cultural-Diversity" / all TOPICAL SUBHEADINGS / all AGE SUBHEADINGS in DE or "Minority-Groups" /all TOPICAL SUBHEADINGS /all AGE SUBHEADINGS in DE or "Ethnic-Groups" /all TOPICAL SUBHEADINGS /all AGE SUBHEADINGS in DE or "Urban-Health" /all TOPICAL SUBHEADINGS /all AGE SUBHEADINGS in DE) and ("Health-Personnel" / all TOPICAL SUBHEADINGS / all AGE SUBHEADINGS in DE or health care provider* in TI,AB or nurs* in TI,AB or physician* in TI,AB or health professional* in TI,AB) and (LA:NU = ENGLISH) and (PY:NU >= 1980) AND ("clinical trials" /all TOPICAL SUBHEADINGS /all AGE SUBHEADINGS in DE)) or (("Education-" / all TOPICAL SUBHEADINGS / all AGE SUBHEADINGS in DE or educat* in TI,AB or train* in TI,AB or curriculum in TI,AB) and ("Transcultural-Nursing" / all TOPICAL SUBHEADINGS / all AGE SUBHEADINGS in DE or "Cultural-Diversity" / all TOPICAL SUBHEADINGS / all AGE SUBHEADINGS in DE or "Cultural-Sensitivity" / all TOPICAL SUBHEADINGS / all AGE SUBHEADINGS in DE or "Cultural-Competence" / all TOPICAL SUBHEADINGS / all AGE SUBHEADINGS in DE or ((cultura* in TI,AB or divers* in TI,AB) and (sensitiv* in TI,AB or attitude in TI,AB or knowledge in TI,AB or competen* in TI,AB))) and ("Health-Personnel" / all TOPICAL SUBHEADINGS / all AGE SUBHEADINGS in DE or "health care provider*" in TI,AB or nurs* in TI,AB or physician* in TI,AB or "health professional*" in TI,AB) and (LA:NU = ENGLISH) and (PY:NU >= 1980))

(minority OR ethnic OR cultural OR urban)

- selected indexed and non-indexed fields
- OR'd terms together

minority
cultural
racial

Journals Hand Searched

Academic Medicine

Archives of Pediatric and Adolescent Medicine

Ethnicity and Disease

Health Services Research

Journal of the American Medical Association

Journal of General Internal Medicine

Journal of Health Care for the Poor and Underserved

Journal of Transcultural Nursing

Medical Care

Milbank Quarterly

New England Journal of Medicine

Pediatrics

Appendix B: Abstraction Forms

EPC Minority Health
Abstract Review Form

Reviewer: _____

Data Entry: _____

Delete article because (check only one):

☐ published prior to 1980

☐ not in English

☐ does not include human data

☐ no original data

☐ meeting abstract (no full article for review)

☐ not relevant to minority health

(include <50% minority or no subgroup analysis)

☐ no intervention

☐ not targeted to health care providers or organizations

☐ has no evaluation of an intervention

☐ other: (specify) _____

Article addresses only quality question (Q1) and is:

☐ not RCT or concurrent CCT (non historical)

☐ not conducted in the U.S.

☐ **Unclear: get article to decide**

Do not go on if any item above is checked.

Article addresses following questions (check all that apply):

Strategies targeted at healthcare professionals to:

Quality

- ☐ improve *quality* of minority healthcare (Q1)
- ☐ *reducing disparities* in health or in healthcare (Q1a)
- ☐ *costs* of strategies (Q1b)

Cultural competence

- ☐ improve *cultural competence* of healthcare professionals (Q2)
- ☐ *costs* of strategies (Q2a)

☐ This article does not apply to any of the questions

☐ Get article for reference regarding:_____

Minority Health Article *Quality Assessment Form*

Article ID: _____ Reviewer 1:_____ Reviewer 2:_____

Section I: Article Eligibility: Review eligibility criteria before abstracting

Article is **not** eligible for review because (Check one):

- ○ published prior to 1980
- ○ not in English
- ○ does not include human data
- ○ no original data
- ○ meeting abstract (no full article for review)
- ○ not relevant to minority health (includes ≤ 50% minority OR no subgroup analysis)
- ○ no intervention
- ○ not targeted to health care providers or organizations
- ○ no evaluation of an intervention
- ○ this article does not apply to any of the questions
- ○ other: (specify)_____

Article addresses only quality (Q1) and is:

- ○ not RCT or concurrent CCT (non historical)
- ○ not conducted in the U.S.

IF ANY OF THE ABOVE ITEMS IS CHECKED, STOP: DO NOT CONTINUE

Section II: **Focus of Article**

Article provides information to address the following questions (Check all that apply):

Q1 Quality of Care ☐ What strategies targeted at health care providers or organizations, have been shown to improve minority health care quality? (Q1) ☐ Which of these strategies have been shown to be effective in reducing disparities in health or in health care between minority and white populations? (Q1a) ☐ What are the costs of these strategies? (Q1b)	Complete Quality Assessment Form AND the green Content Review Form
Q2 Cultural Competence ☐ What strategies have been shown to improve the cultural competence of health care providers or organizations? (Q2) ☐ What are the costs of these strategies? (Q2a)	Complete Quality Assessment Form AND the blue Content Review Form
☐ Article addresses intervention targeted to health care organizations **ONLY**	**STOP** and return the forms to Keo
☐ Article addresses intervention targeted at **BOTH** health care providers and organizations	Complete Quality Assessment Form AND the relevant Content Review Form for health care providers **only**

Section III: **Representativeness of Targeted Health Care Providers**

For each question, circle one response in the column on the right.

1. Does the study describe the setting and population from which the **health care providers** sample was drawn, and give the dates of the study? (e.g., clinic or hospital-based; nurses, dentists, physicians, etc.)	a. Adequate	(Setting AND population described AND start/end date specified)	2
	b. Fair	(One or more of these NOT reported OR poor description)	1
	c. Inadequate	(Not specified)	0

2. Was information provided on **health care providers** who were excluded or not participating in the intervention?	a. Adequate	(All reasons for exclusion/non participation AND number OR specified no exclusions/non participation)	2
	b. Fair	(Only one of above criteria specified or information not sufficient to allow replication)	1
	c. Inadequate	(None of the above criteria specified)	0
3. Does the study describe key **health care provider** characteristics at enrollment? *Demographics:* age, gender, specialty, race/ethnicity, years in practice or training level	a. Adequate	(Complete demographic description) (3-4 features)	2
	b. Fair	(Partial demographic description) (1-2 features)	1
	c. Inadequate	(No demographic features described)	0

Section IV: **Representativeness of Targeted Patients**

For each question, circle one numeric response.

4. Were **patients** involved in the study?	a. Yes	⇨ If yes, continue to Q5	
	b. No	⇨ If no, skip to Q7	
5. Does the study describe the setting and population from which the study sample of **patients** was drawn? (e.g., hospital/clinic OR community; all patients in practice; diabetics)	a. Adequate	(Setting AND population described)	2
	b. Fair	(One or more of these NOT reported OR poor description)	1
	c. Inadequate	(None Specified)	0
6. Does the study describe key **patient** characteristics? *Demographics:* age, gender, SES, race/ethnicity, comorbidity	a. Adequate	(Complete demographic description) (3-4 features)	2
	b. Fair	(Partial demographic description) (1-2 features)	1
	c. Inadequate	(No demographic features described)	0

Section V: **Bias and Confounding**

For each question, circle one response in the column on the right.

7. Was there an appropriate comparison group?	a. Adequate	(Concurrent and similar group)	2
	b. Fair	(Non-concurrent OR non-similar)	1
	c. Inadequate	(Non-concurrent AND non-similar)	0
	d. None	⇨Skip to item 11	0
8. Was assignment of participant groups randomized?	a. Adequate	(Investigators could not predict assignment)	2
	b. Partial	(Date of birth, admission date, hospital record number, or other non-random scheme for assignment, OR did not state)	1
	c. Not randomized		0
	d. Unclear		0
9. Did the **health care provider** group(s) have any important differences on key provider characteristics? *Demographics:* age, gender, specialty, race/ethnicity, years in practice or level of training	a. Groups equivalent in all factors examined OR appropriate adjustment		2
	b. Groups have minor difference in 1 or 2 factors		1.5
	c. Groups have an important difference in one or more factors OR minor difference in more than two factors		1
	d. Health care provider characteristics not reported		0
10. Did the **patient** group(s) have any important differences on key patient characteristics? *Demographics:* age, gender, SES, race/ethnicity, comorbidity	a. Groups equivalent in all factors examined OR appropriate adjustment		2
	b. Groups have minor difference in 1 or 2 factors		1.5
	c. Groups have an important difference in one or more factors OR minor difference in more than two factors		1
	d. Patient characteristics not reported		0
	e. Patients are not the unit of observation		N/A

Section VI: **Description of the Intervention**

For each question, circle one response in the column on the right.

11. Does the intervention have stated objectives?	a. Adequate	(Objectives stated clearly)	2
	b. Fair	(Objectives stated, but unclear)	1
	c. Inadequate	(Objectives not stated)	0
12. Was there a complete description of the intervention?	a. Adequate	(Intervention could be replicated given the completeness of description)	2
	b. Fair	(Some detail but insufficient to ensure replication)	1
	c. Inadequate	(Minimal to no detail)	0

Section VII: **Outcomes of the Intervention**

For each question, circle one response in the column on the right.

13. Was there blinding of outcome assessors?	a. Yes		2
	b. No		0
	c. No comparison group		N/A
14. Assessment of the intervention was based upon:	a. Pre- AND post-intervention evaluation		2
	b. Post-intervention evaluation		1
15. Were objective methods used to evaluate outcomes?	a. Adequate	(Evaluation methods were objective, e.g., statistics, written exams, video)	2
	b. Fair	(Objectivity of evaluation is questionable, e.g., de-briefing, self-assessment)	1
	c. Inadequate	(Evaluation methods not objective, e.g., participant essay OR methods unclear)	0

Section VIII: **Analytic Approach**

For each question, circle one response in the column on the right.

16. Did the study report the numbers of AND reasons for non-inclusion in the study analysis?	a. Numbers AND reasons for withdrawal reported or NO withdrawals	2
	b. Numbers OR reasons reported	1
	c. Neither numbers NOR reasons reported	0
17. What was the greatest percentage of **health care providers** in a study group that withdrew from the study protocol OR were lost to follow-up at the final evaluation?	a. < 10% withdrew or were lost to follow-up	2
	b. 10 - 30% withdrew or were lost	1
	c. > 30% withdrew or were lost	0
	d. Withdrawals/lost to follow-up not stated	0
	e. Providers not the unit of observation	N/A
18. What was the greatest percentage of **patients** in a study group that withdrew from the study protocol or were lost to follow-up?	a. < 10% withdrew or were lost to follow-up	2
	b. 10 - 30% withdrew or were lost to follow-up	1
	c. > 30% withdrew or were lost to follow-up	0
	d. Withdrawals/lost to follow-up not stated	0
	e. Patients are not the unit of observation	N/A
19. Was there differential loss to follow-up between groups?	a. No loss to follow-up OR no difference between groups	2
	b. Minor differences in loss to follow-up between groups	1
	c. Major differences in loss to follow-up between groups	0
	d. Withdrawals/loss to follow-up not stated	0
	e. No comparison group	N/A

Section IX: Statistical Quality and Interpretation

For each question, circle one response in the column on the right.

20. For primary endpoints of the evaluation, does the study report the magnitude of difference between groups (include pre post test) AND an index of variability - including pre-post testing (e.g., test statistic, p value, standard error, confidence interval)?	a. Adequate	(Both reported with index of variability using standard error or confidence intervals)	2
	b. Fair	(Both reported with index of variability using only test statistic or p value)	1
	c. Inadequate	(One or both not reported)	0
	d. No comparisons	(Descriptive analysis only)	0
	e. Qualitative analysis only		N/A
21. Were the appropriate analyses and statistical tests performed?	a. Adequate	(Yes, for all analyses)	2
	b. Fair	(Yes, but for only some of the analyses)	1
	c. Inadequate	(Not performed for any of the analyses OR not able to tell)	0
	d. Not applicable		N/A

THANK YOU! For completing this form. Please return to Keo.

Minority Health Content Review Form
for Key Question 1 (Quality)

Article ID: _____ Reviewer 1: _____ Reviewer 2: _____

1. What health care professionals are targeted? (Check all that apply)
   - ☐ Community health worker
   - ☐ Dentist
   - ☐ Nurse
   - ☐ Pharmacist
   - ☐ Physician
   - ☐ Other (specify): _____
   - ☐ Not specified

2. Training level? (Check all that apply)
   - ☐ Pre-professional training (medical/nursing student)
   - ☐ Resident/fellow
   - ☐ Professional (i.e., completed training)
   - ☐ Other (specify): _____
   - ☐ Not specified

3. Clinical specialty? (Check all that apply)
   - ☐ Emergency medicine
   - ☐ Family medicine
   - ☐ Internal medicine
   - ☐ Obstetrics and gynecology
   - ☐ Pediatrics
   - ☐ Primary care
   - ☐ Psychiatry
   - ☐ Surgery
   - ☐ Other (specify): _____
   - ☐ Not specified
   - ☐ N/A (for non-physicians and all students)

4. Where did the targeted health care provider(s) practice? (Check all that apply)
   - ☐ Community health center OR free standing clinic
   - ☐ Home/community (not health care setting)
   - ☐ Not specified
   - ☐ Other (specify): _____
   - ☐ Hospital inpatient
   - ☐ Hospital outpatient clinic
   - ☐ Group practice
   - ☐ Solo practice

5. What was the main objective of the study?_____

_____

_____

6. The objectives addressed which dimension of quality *(Refer to IOM definitions handout)*? (Check all that apply)

Consumer perspectives on health care needs	**Safety**	**Effectiveness**	**Patient centeredness**	**Timeliness**
Staying healthy	☐	☐	☐	☐
Getting better	☐	☐	☐	☐
Living with illness or disability	☐	☐	☐	☐
Coping with the end of life	☐	☐	☐	☐

7. Which of the following areas does this article address? (Check all that apply)

☐ Care coordination
☐ Asthma
☐ Children with special health care needs
☐ Hypertension
☐ Ischemic heart disease
☐ Medication management
☐ Pain control
☐ Mental illness
☐ Tobacco dependence
☐ End of life
☐ Self-management/health literacy
☐ Cancer screening
☐ Diabetes
☐ Frailty associated with old age
☐ Immunization
☐ Major depression (clinical depression)
☐ Nosocomial infections
☐ Pregnancy and childbirth
☐ Stroke
☐ Obesity
☐ Other _____

8. Study design? (Check one)

○ Randomized controlled trial (RCT) ○ Concurrent controlled trial (CCT)

9. Was assignment of the intervention made at the patient or provider level or both? (Check one)

○ Patients ○ Providers ○ Clinics
○ Both (patients and providers) ○ Both (providers and clinics)

10. How many groups, including the control group, are there in this study? _____ groups

11. Name, in one or two words, each group to be abstracted, e.g., control; nurse I; 4th year students. *Continue with this form and then complete a Group Description for Key Question 1 (pink sheets) for **each** group listed below.*

	Group name
Group A	Control
Group B	
Group C	
Group D	
Group E	
Group F	

12. Enter numbers for entire study (total for all groups). Enter "NS" where the number of participants is not specified and "NA" where not applicable, e.g., if no participants in study. *"# completed" refers to number of participants included in analysis for the entire study.*

Patients		**Providers**		**Clinics**	
# recruited	**# completed study**	**# recruited**	**# completed study**	**# recruited**	**# completed study**

13. When was the evaluation completed? (Check all that apply)

- ☐ < 1 day after end of intervention (includes immediate post test)
- ☐ 1 - 29 days after end of intervention
- ☐ 1 - 3 months after end of intervention
- ☐ 4 - 6 months after end of intervention
- ☐ 7 - 12 months after end of intervention
- ☐ > 1 year after end of intervention
- ☐ Not specified

14. Enter **patient** characteristics for the entire study as given, e.g., Ns OR %s, for entire study (total for all groups). Enter "NS" where the number of participants is not specified and "NA" where not applicable. Enter age range only if mean is not provided. If no patients in study, skip to item 16, next page. *Group level information must be entered on Group Description for Key Question 1 (pink sheets):*

☐ No patient information

	N	%
Female ☐ Not specified		
Asian/Pacific Islander ☐ Not specified		
African American ☐ Not specified		
Caucasian ☐ Not specified		
Hispanic ☐ Not specified		
American Indian/Alaskan Native ☐ Not specified		

	Mean	Range
Age ☐ Not specified		
Years of education ☐ Not specified		

15. Outcomes of the provider targeted intervention assessed by (check one):

○ Patient outcomes ○ Provider outcomes ○ Both

16. What health care quality outcomes related to the intervention objectives were assessed and how measured?
Outcome type codes: Utilization = U; Quality of Providers = QP; Appropriateness of Care = AC; Efficacy of Treatment = ET; Patient Adherence = PA; Health Status = HS; Patient Satisfaction = PS. *This item continued next page for additional outcomes.*

Outcome type (select code from list above)	**Outcome** (e.g., physician counseling behavior, immunization rates, cancer screening tests, etc.)	**How measured** (e.g., provider self report, medical record review, patient report, administrative or claims, etc.)	**Intervention effects** (specify group comparison outcomes)

16 (Continued). What health care quality outcomes related to the intervention objectives were assessed and how measured?
Outcome type codes: Utilization = U; Quality of Providers = QP; Appropriateness of Care = AC; Efficacy of Treatment = ET; Patient Adherence = PA; Health Status = HS; Patient Satisfaction = PS.

Outcome type (select code from list above)	**Outcome** (e.g., physician counseling behavior, immunization rates, cancer screening tests, etc.)	**How measured** (e.g., provider self report, medical record review, patient report, administrative or claims, etc.)	**Intervention effects** (specify group comparison outcomes, refer to question 10)

17. Author conclusion/summary: (Check one)

- ○ Overall improvement after intervention
- ○ Partial improvement or mixed results
- ○ No improvement after intervention
- ○ Unclear
- ○ Other (specify): _____

18. Briefly summarize the authors' main conclusion(s): _____

_____

_____

19. Reflecting back on this study as a whole, what is your overall impression of the quality of the study? (Check one)

- ○ Very good
- ○ Fair
- ○ Poor

20. Any other comments for us?

_____

_____

_____

Thank you ....and please continue.

Complete a Group Description form (pink sheets) for each group (A-F) listed in Item 11, page 3, MH Content Review Form for KQ1.

When all forms are completed, please assemble them and bring them to the next meeting.

Minority Health Content Review Form
GROUP *Description for Key Question 1 (Quality)*

Article ID: _____ Reviewer 1: _____ Reviewer 2: _____

Group (from Item 11, p 3, MH Content Review Form for KQ1. Circle): A B C D E F

Group Name (from Item 11, p 3, MH Content Review Form for KQ1.) _____

1G. Enter **patient** characteristics as given, e.g., Ns OR %s. Enter "NS" where the number of participants is not specified and "NA" where not applicable. Enter age range only if mean is not provided. *If no patients in study, skip to item 2G, next page.*

☐ No patient information

	N	%
Female ☐ Not specified		
Asian/Pacific Islander ☐ Not specified		
African American ☐ Not specified		
Caucasian ☐ Not specified		
Hispanic ☐ Not specified		
American Indian/Alaskan Native ☐ Not specified		

	Mean	Range
Age ☐ Not specified		
Years of education ☐ Not specified		

2G. Briefly describe the group intervention described on this form. Identify whether usual care or provider or patient focus. Enter "NS" where number of participants is not specified and "NA" where not applicable. *"# completed" refers to total # included in analysis for this group.*

Column 1			**Column 2**
Patients # recruited / # completed	**Providers** # recruited / # completed	**Clinics** # recruited / # completed	Indicate group type and provide brief group description, e.g., providers given computer reminders; patients given written material)
			☐ No intervention/usual care
			☐ Provider intervention
			☐ Patient intervention

3G. Were there *educational* methods used in the provider intervention?

☐ Yes (Continue to item 4G) ☐ No educational methods (Skip to item 8G)

4G. Educational methods used: (Check all that apply)

☐ Written material (book, flyer, journal, article)

☐ AV material (audiotape, videotape, guidelines, case studies)

☐ Computer-based material (CD, software, Internet)

☐ Lecture

☐ Self-study

☐ Small group

☐ Simulated patients

☐ Academic detailing

☐ Other_____

5G. Number of training sessions for the *main educational intervention*? _____ sessions ☐ N/S

6G. What was the average duration for *one* training session for the *main educational intervention?*

- ○ < 2 hours
- ○ 2 - 10 hours
- ○ 11 - 20 hours
- ○ > 20 hours
- ○ Not specified

7G. How often were the sessions held for the *main educational intervention*?

- ○ Once only
- ○ Weekly
- ○ Monthly
- ○ Other (specify): _____
- ○ Not specified

8G. What *other* methods were used? (check all that apply)

- ☐ No other methods used
- ☐ Tracking/reminder system
- ☐ Audit & feedback
- ☐ Standing orders/protocols/guidelines/algorithms
- ☐ Reward incentive
- ☐ Penalty incentive
- ☐ Other (describe): _____

9G. How much time elapsed from the beginning to the end of the intervention?

- ○ < 1 day
- ○ 1 - 29 days
- ○ 1 - 3 months
- ○ 4 - 6 months
- ○ 7 - 12 months
- ○ > 1 year
- ○ Not specified

10G. Comments about intervention if not captured by previous questions (i.e., brief description intervention, including duration and frequency).

Thank you ....and please continue.

Complete a Group Description form (pink sheets) for *each* group (A-F) listed in Item 11, page 3, MH Content Review Form for KQ1.

When all forms are completed, please assemble them and bring them to the next meeting.

Minority Health Content Review Form for
Key Question 2 (Cultural Competence)

Article ID: _____ Reviewer 1: _____ Reviewer 2: _____

1. What health care professionals are targeted? (Check all that apply)
   - ☐ Community health worker
   - ☐ Dentist
   - ☐ Nurse
   - ☐ Pharmacist
   - ☐ Physician
   - ☐ Other (specify): _____
   - ☐ Not specified

2. Training level? (Check all that apply)
   - ☐ Pre-professional training (medical/nursing student)
   - ☐ Resident/fellow
   - ☐ Practicing professional (i.e., completed training)
   - ☐ Other (Specify): _____
   - ☐ Not specified

3. Study design? (Check one)
   a. Controlled trial
      - ○ Randomized controlled trial (RCT)
      - ○ Concurrent controlled trial (CCT)

   b. Uncontrolled
      - ○ Pre/post test
      - ○ Post test only

   c. Other (specify): _____

   d. Not specified

4. In what part of the world was the intervention mainly performed? (Check all that apply)
   - ☐ Africa
   - ☐ Asia
   - ☐ Australia
   - ☐ Canada
   - ☐ Mexico, South or Central America
   - ☐ U.K.
   - ☐ U.S.
   - ☐ Other (specify): _____
   - ☐ Not specified

5. What was the setting of the educational intervention? (Check all that apply)

- ☐ Continuing medical education/ continuing nursing education
- ☐ Health professional school
- ☐ Professional meeting/conference
- ☐ Residency program
- ☐ Not specified
- ☐ Other (specify): _____
- ☐ Ambulatory health care setting
- ☐ Community health clinic
- ☐ Community (includes cultural immersion)
- ☐ Hospital
- ☐ Workshop

6. What are the educational objectives of the intervention?

Objectives (✔ all that apply)	**Describe briefly (use key words and point form)**
☐ Knowledge	
☐ Attitudes/Beliefs	
☐ Skills	
☐ Behaviors	
☐ Patient outcomes	

7. What **methods** were used in the intervention? (Check all that apply)

- ☐ Audio/visual (e.g. videotapes)
- ☐ Brainstorming
- ☐ Case scenarios
- ☐ Clinical experiences
- ☐ Culture immersion
- ☐ Demonstration/role modeling
- ☐ Discussion (group)
- ☐ Drill/practice exercise
- ☐ Interviewing members of another culture
- ☐ Language lessons
- ☐ Lectures
- ☐ Other (specify): _____
- ☐ Literature (poems, stories)
- ☐ Presentations by community members, members of another culture
- ☐ Problem based learning
- ☐ Readings
- ☐ Role play
- ☐ Standardized patient (includes OSCEs)
- ☐ Self reflection/awareness
- ☐ Self study
- ☐ Small group
- ☐ Not specified

8. How was the intervention developed? (Check all that apply)

- ☐ Literature review
- ☐ Guidelines
- ☐ Focus groups
- ☐ Expert opinion
- ☐ Learner input
- ☐ Theoretical model (specify): _____
- ☐ Other (specify): _____
- ☐ Not specified

9. How many training sessions were held?

_____

- ○ Not specified

10. What was the average duration for one training session (i.e., contact time)?

- ○ < 2 hours
- ○ 2 - 10 hours
- ○ 11 - 20 hours
- ○ > 20 hours
- ○ Not specified

11. How often were the sessions held?

- ○ Once only
- ○ Weekly
- ○ Monthly
- ○ Other (specify): _____
- ○ Not specified

12. When was the evaluation completed? (Check all that apply)

- ☐ < 1 day after end of intervention (includes immediate post test)
- ☐ 1 - 29 days after end of intervention
- ☐ 1 - 3 months after end of intervention
- ☐ 4 - 6 months after end of intervention
- ☐ 7 - 12 months after end of intervention
- ☐ > 1 year after end of intervention
- ☐ Not specified

13. Comments about intervention if not captured by previous questions (i.e., briefly describe intervention, including duration and frequency).

14. Methods used in evaluation of this intervention: (Check all that apply)

- ☐ Computer interactive tests
- ☐ Essays
- ☐ Group interviews
- ☐ Individual interviews
- ☐ Observer/rater questionnaire (includes family)
- ☐ Performance audits
- ☐ Participant ratings of curriculum
- ☐ Patient rating
- ☐ Self-assessment forms
- ☐ Video or audiotape feedback/analysis
- ☐ Written exam
- ☐ Other (specify): _____
- ☐ Not specified

15. What were the outcomes?

(✔ all that apply)	**Briefly describe the outcomes including differential outcomes for comparison groups, if relevant.**
☐ Knowledge	
☐ Attitudes/Beliefs	
☐ Skills	
☐ Behaviors	
☐ Patient outcomes	
☐ Curriculum evaluation	
☐ Other	

16. Author conclusion/summary:

- ☐ Overall improvement after intervention
- ☐ Partial improvement or mixed results
- ☐ No improvement after intervention
- ☐ Unclear
- ☐ Other (specify): _____

17. Briefly summarize the authors' main conclusion(s):

_____

_____

_____

18. Reflecting back on this study as a whole, what is your overall impression of the quality of the study?

- ☐ Very Good
- ☐ Fair
- ☐ Poor

19. Any other comments for us?

_____

_____

_____

THANK YOU! For completing this form. Please return to Keo.

Appendix C: Evidence Tables

Evidence Table 1: Description of study characteristics for articles addressing Question 1

Study	Targeted Healthcare Providers/Levels of Training/ Number of Providers	Study Design [a]	Study Setting	Clinical Areas	Objectives	Summary of Quality Assessment [b]				
						Rep	Bias	Inter	Out	Analy
PREVENTION, ADULT										
Adult, General Prevention										
Gemson, 1995	Physician Resident/fellow, Professional n=254	CCT	Hospital Outpatient	Tobacco, Cancer, Immunization, Obesity, Exercise counselling	To test the effectiveness of a multifaceted physician prevention education program using prototype materials from "Put Prevention into Practice Program" and didactic nursing.	●	●	●	◒	◒
McDonald, 1984	Physician, nurse clinicians Resident/fellow, Professional n=126	RCT	Hospital Outpatient	Cancer, Immunization, Obesity	To determine the effect of the reminder system on physician's use of individual actions and to find improvements in patient outcomes that may result from the computer reminders.	◒	●	◒	◒	○
Turner, 1989	Physician Resident/fellow n=34	CCT	Hospital Outpatient	Cancer, Immunization	To determine if two different interventions (computer record/reminder for physician and preventive status questionnaire for patients) would influence the rate of preventive services.	●	●	●	◒	●

Evidence Table 1: Description of study characteristics for articles addressing Question 1 (continued)

Study	Targeted Healthcare Providers/Levels of Training/ Number of Providers	Study Design [a]	Study Setting	Clinical Areas	Objectives	Summary of Quality Assessment [b]				
						Rep	Bias	Inter	Out	Analy
Adult, Cancer Screening										
Burack, 1994	Nurse, Physician Professional n=25	RCT	Community Health Clinic, Hospital Outpatient, HMO	Cancer	To determine effectiveness of a patient and physician reminder system to increase use of screening mammography.	◒	◒	●	◒	◒
Burack, 1996	Physician Professional n=20	RCT	Group Practice, HMO	Cancer	To evaluate the overall effectiveness of the four combinations of patient/physician reminders on mammography screening.	●	●	●	◒	◒
Burack, 1997	Physician Professional n=not applicable	RCT	Community Health Clinic, HMO	Cancer	To evaluate the sustained effectiveness of a computerized reminder system in promoting mammography during a second year of continuing education.	○	●	●	●	○
Burack, 1998	Physician Professional n=20	RCT	Group Practice	Cancer	To evaluate the overall effectiveness of the combinations of patient and physician reminder interventions regarding pap smear use.	●	◒	●	◒	◒
Burack, 2003	Physician Professional n=20	RCT	Home/ Community, HMO	Cancer	To better understand the potential interaction among procedure reminders.	◒	●	●	●	○
Chambers, 1989	Physician Resident/fellow, Professional n=30	RCT	Hospital Outpatient	Cancer	To investigate the influence on mammogram ordering of a reminder bulletin or "ticker system" integrated with a microcomputerized system that links clinical encounters data and billing data.	●	●	●	●	●

Evidence Table 1: Description of study characteristics for articles addressing Question 1 (continued)

Study	Targeted Healthcare Providers/Levels of Training/ Number of Providers	Study Design [a]	Study Setting	Clinical Areas	Objectives	Summary of Quality Assessment [b]				
						Rep	Bias	Inter	Out	Analy
Dietrich, 1998	Nurse, Physician, Office staff, Clinical directors Professional n=not specified	RCT	Community Health Clinic	Cancer	To test an intervention for increasing rates of cancer early-detection services in community/migrant health centers.	●	●	◒	●	●
Mandelblatt, 1993	Nurse, Physician Resident/fellow, Professional n=not specified	CCT	Hospital Outpatient	Cancer	To increase breast and cervical cancer screening among elderly black women of low socioeconomic status using public hospital primary care clinics.	◒	◒	●	◒	○
Manfredi, 1998	Physician Professional n=not specified	RCT	Group Practice, Solo Practice, HMO, Community of free standing clinics	Cancer	To evaluate a health maintenance organization-sponsored intervention to improve cancer screening in private physician practices serving low-income minority populations.	◒	◒	●	◒	◒
McCarthy, 1997	Nurse, Medical assistant Professional n=not specified	CCT	Hospital Outpatient	Cancer	(1) To develop new processes for offering mammography. (2) To determine whether protocols executed completely by non-physicians would increase mammography utilization.	◒	◒	●	●	●

Evidence Table 1: Description of study characteristics for articles addressing Question 1 (continued)

Study	Targeted Healthcare Providers/Levels of Training/ Number of Providers	Study Design [a]	Study Setting	Clinical Areas	Objectives	Summary of Quality Assessment [b]				
						Rep	Bias	Inter	Out	Analy
Adult ,Tobacco Cessation										
Ahluwalia, 1999	Physician Resident/fellow n=45	CCT	Hospital Outpatient	Tobacco	To assess whether or not a smoking status stamp would change physician counseling patterns.	●	●	●	◒	●
Allen, 1998	Physician Resident/fellow n=158	RCT	Hospital Outpatient	Tobacco	To assess the effectiveness of physicians in training counseling for smoking cessation in African Americans.	●	●	●	◒	◒
Adult, Cholesterol										
Keyserling, 1997	Physician, Nurse practitioners, Physician assistants Professional n=42	RCT	Community Health Clinic	Hypercholesterolemia	To assess the effectiveness of a cholesterol-lowering intervention designed to facilitate the management of hypercholesterolemia by primary care clinicians.	●	●	◒	◒	◒
PREVENTION, CHILDREN										
Health Behavior Screening										
Schubiner, 1994	Physician Pre-professional training, Resident/fellow n=not specified	RCT	Community Health Clinic	Health behavior screening	To determine the effect of use of the Safe Times Questionnaire (STQ) on the length and nature of the psychosocial risk assessment, the degree of patient satisfaction, and the ability of physicians to identify adolescents at risk in the topic area covered by the STQ.	◒	●	●	●	○

Evidence Table 1: Description of study characteristics for articles addressing Question 1 (continued)

Study	Targeted Healthcare Providers/Levels of Training/ Number of Providers	Study Design [a]	Study Setting	Clinical Areas	Objectives	Summary of Quality Assessment [b]				
						Rep	Bias	Inter	Out	Analy
Injury Prevention in Children										
Gielen, 2001	Physician Resident/fellow n=31	RCT	Hospital Outpatient	Injury prevention in children	To improve patients' safety practices for the prevention of burns, falls and poisoning among children aged 0 to 2 years living in low income inner-city neighborhoods.	◒	●	●	●	◒
Well Baby Care										
Hornberger, 1996	Physician Professional n=4	RCT	Hospital Outpatient	Well baby care	To determine the impact of remote simultaneous versus proximate consecutive interpretation on translation errors, provider and patient satisfaction, provider ratings of patient understanding, and accuracy of translation.	○	◒	●	◒	◒
MENTAL HEALTH										
Alcohol										
Burge, 1997	Physician Resident/fellow n=not specified	RCT	Hospital Outpatient	Alcohol abuse	To examine the effect of two primary care interventions for alcohol abuse on outpatients (1) drinking patterns, (2) psychosocial problems, and (3) blood test results over a period of 18 months.	●	●	●	●	◒

Evidence Table 1: Description of study characteristics for articles addressing Question 1 (continued)

Study	Targeted Healthcare Providers/Levels of Training/ Number of Providers	Study Design [a]	Study Setting	Clinical Areas	Objectives	Summary of Quality Assessment [b]				
						Rep	Bias	Inter	Out	Analy
Depression										
Callahan, 1994	Physician Professional n=103	RCT	Group Practice	Care coordination, Major depression	To assess the effect of a multi-faceted physician targeted intervention to improve the recognition and treatment of depression in primary care among an elderly population with co-morbidities.	◒	●	●	◒	●
Miranda, 2003	Nurse, Physician, Nurse practitioner Professional n=181	RCT	Group Practice, HMO Primary Care Practice	Major depression	To determine if quality improvement, practice initiated interventions for depressed primary care clinics can improve care across groups and improve health and employment outcomes among ethnic minorities over those of whites.	◒	◒	◒	◒	○
OTHER CLINICAL AREAS										
Acute Respiratory Infections										
Harris, 2003	Physician, Nurse practitioner Professional n=42	CCT	Hospital Outpatient	Prescribing for acute respiratory tract infections	To decrease unnecessary antibiotic use for acute respiratory tract infections in adults in a point of service health care setting.	●	◒	●	◒	●

Evidence Table 1: Description of study characteristics for articles addressing Question 1 (continued)

Study	Targeted Healthcare Providers/Levels of Training/ Number of Providers	Study Design [a]	Study Setting	Clinical Areas	Objectives	Summary of Quality Assessment [b]				
						Rep	Bias	Inter	Out	Analy
Asthma										
Evans, 1997	Nurse, Physician, Clerical staff, Laboratory technicians, Public health assistants Professional n=134	RCT	Community Health Clinic	Asthma	To determine if training of professional and support staff (in intervention clinics) would (1) increase the number of children diagnosed with asthma and receiving continuing care and (2) improve quality of care by increasing staff use of new pharmacologic and educational treatment methods.	◒	◒	◒	◒	◒
Chronic renal disease										
Harris, 1998	Physician Resident/fellow, Professional n=not applicable	RCT	Hospital Outpatient	Care coordination, Renal disease	To assess whether a comprehensive multidisciplinary program for chronic renal insufficiency patients slow the decline of renal function.	◒	◒	◒	◒	◒
Emergency Systems										
Kellermann, 1993	Firefighters Professional n=40	CCT	Home/Community	Emergency first response	(1) To determine if first responder defibrillation can improve rates of cardiac resuscitation and survival in urban EMS system served by paramedics. (2) To determine if rapid pre-hospital defibrillation can compensate for delayed notification of EMS or lack of bystander CPR. (3) To determine if station characteristics can be used to identify optimal locations of automated external defibrillators.	◒	◒	◒	◒	○

Evidence Table 1: Description of study characteristics for articles addressing Question 1 (continued)

Study	Targeted Healthcare Providers/Levels of Training/ Number of Providers	Study Design [a]	Study Setting	Clinical Areas	Objectives	Summary of Quality Assessment [b]				
						Rep	Bias	Inter	Out	Analy
End of Life										
Dexter, 1998	Physician Resident/fellow, Professional n=147	RCT	Hospital Outpatient	End of Life	Determine effect of computer-generated reminders to physicians on frequency of advance directive discussions between patients and their primary care givers.	●	●	●	●	●

[a] CCT= controlled clinical trial; RCT= randomized controlled trial

[a] assessments of methodological strengths and weaknesses in 5 domains, as categorized by following symbols:

● = quality score of 80% or above

◒ = quality score of 50 to 79%

○ = quality score of less than 50%

Domains:

Rep = representativeness of targeted healthcare providers and/or patients

Bias = potential for bias and confounding

Inter = description of interventions

Out = assessment of outcomes

Analy = analytic approach

Evidence Table 2: Description of intervention characteristics for articles addressing Question 1

Study	Targeted Healthcare Providers/Levels of Training	Study Design	Group	Patient Race/Ethnicity	Interventions	Educational Methods	Patient Interventions
PREVENTION, ADULT							
Adult, General Prevention							
Gemson, 1995	Physician Resident/fellow, Professional	CCT	Control n=471	93% African American, 5% Hispanic	No Interventions		
			Intervention n=529	92% African American, 5% Hispanic	Education, pads of prevention prescription forms	Written Material, AV material, Lecture	
McDonald, 1984	Physician, nurse clinicians Resident/fellow, Professional	RCT	Control n=not specified		No Interventions		
			Intervention n=not specified		Tracking/reminder system		
Turner, 1989	Physician Resident/fellow	CCT	Patient intervention n=86				Questionnaire of status of preventive services before primary care visit
			Physician and patient interventions n=64		Tracking/reminder system		Questionnaire of status of preventive services before primary care visit
			Physician intervention n=103		Tracking/reminder system		

Evidence Table 2: Description of intervention characteristics for articles addressing Question 1 (continued)

Study	Targeted Healthcare Providers/Levels of Training	Study Design	Group	Patient Race/Ethnicity	Interventions	Educational Methods	Patient Interventions
Adult, Cancer Screening							
Burack, 1994	Nurse, Physician Professional	RCT	Full intervention n=1382		Education, Tracking/reminder system	Lecture	Elimination of out-of-Pocket expenses for patients, post-card and telephone follow-up
			Limited intervention n=1343		Education	Lecture	Elimination of out-of-pocket expenses for patients
Burack, 1996	Physician Professional	RCT	Control n=596		No Interventions		
			Patient reminders n=592				Patient reminder letters
			Physician and patient reminders n=590		Tracking/reminder system		Patient reminder letters
			Physician reminders n=590		Tracking/reminder system		
Burack, 1997	Physician Professional	RCT	Full intervention n=1413		Education, Tracking/reminder system	Physician and staff orientation	
			Limited intervention n=1413		Education	Physician and staff orientation	

Evidence Table 2: Description of intervention characteristics for articles addressing Question 1 (continued)

Study	Targeted Healthcare Providers/Levels of Training	Study Design	Group	Patient Race/Ethnicity	Interventions	Educational Methods	Patient Interventions
Burack, 1998	Physician Professional	RCT	Control n=964		No Interventions		
			Patient reminders n=964				Patient reminder letters
			Physician and patient reminder n=960		Tracking/reminder system		Patient reminder letters
			Physician reminders n=960		Tracking/reminder system		
Burack, 2003	Physician Professional	RCT	Mammogram only reminder group n=1228		Tracking/reminder system		Patient reminder letter
			Pap smear and mammogram reminder group n=1243		Tracking/reminder system		Patient reminder letter
Chambers, 1989	Physician Resident/fellow, Professional	RCT	Control n=623	31% White	No Interventions		
			Intervention n=639	28% White	Tracking/reminder system		

Evidence Table 2: Description of intervention characteristics for articles addressing Question 1 (continued)

Study	Targeted Healthcare Providers/Levels of Training	Study Design	Group	Patient Race/Ethnicity	Interventions	Educational Methods	Patient Interventions
Dietrich, 1998	Nurse, Physician, Office staff, Clinical directors Professional	RCT	Control n=1267	23% African American, 22% White, 26% Hispanic	No Interventions		
			Intervention n=1381	31% African American, 22% White, 22% Hispanic	Education, Tracking/reminder system, preventive care flow sheets, advice to center leaders, external chart identifiers	Written Material, provider workshops	Patient-held health diaries, patient education materials
Mandelblatt, 1993	Nurse, Physician Resident/fellow, Professional	CCT	Control n=not specified	82% African American, 15% White, 2% Hispanic	Tracking/reminder system		
			Intervention n=not specified	93% African American, 1% White, 1% Hispanic	Screening offered directly to patient by nurse practitioner		Patient counseling and screening offered directly to patient by nurse practitioner
Manfredi, 1998	Physician Professional	RCT	Control n=42230		Flow sheets supplied but not actively encouraged		
			Intervention n=52392		Education, Tracking/reminder system, Audit & Feedback, incorporation of cancer screening in guidelines and into HMO quality assurance procedures	Written Material, on-site training of staff and 2 follow-up assistant visits CME seminar for physicians, NCI screening guidelines	Health maintenance cards with letter of explanation from HMO

Evidence Table 2: Description of intervention characteristics for articles addressing Question 1 (continued)

Study	Targeted Healthcare Providers/Levels of Training	Study Design	Group	Patient Race/Ethnicity	Interventions	Educational Methods	Patient Interventions
McCarthy, 1997	Nurse, Medical assistant Professional	CCT	Control (Clinic A) n=2560	79% African American, 18% White	No Interventions		
			Control (Clinic B) n=2124	73% African American, 24% White	No Interventions		
			Intervention n=1250	82% African American, 15% White	Education, Nurses and medical assistants screened all patients to ensure mammography was up to date and then initiated referrals for patients not up to date	Flow diagram for mammogram screening	
Adult, Tobacco Cessation							
Ahluwalia, 1999	Physician Resident/fellow	CCT	Control n=not specified	100% African American	No Interventions		
			Intervention n=not specified	100% African American	Tracking/reminder system, smoking stamp which physicians needed to mark as never, former, or current		
Allen, 1998	Physician Resident/fellow	RCT	Control n=571	100% African American	No Interventions		
			Intervention n=515	100% African American	Education, Reward Incentive, summary sheet of patient's smoking history on outside of medical record	Written Material, AV material, Lecture, review of videotapes of counseling sessions, didactic sessions, role play	Written material given to patients about smoking cessation

Evidence Table 2: Description of intervention characteristics for articles addressing Question 1 (continued)

Study	Targeted Healthcare Providers/Levels of Training	Study Design	Group	Patient Race/Ethnicity	Interventions	Educational Methods	Patient Interventions
Adult, Cholesterol							
Keyserling, 1997	Physician, Nurse practitioners, Physician assistants Professional	RCT	Control n=188	40% African American, 47% White, 12% American Indian/Native Alaskan	No Interventions		
			Intervention n=184	39% African American, 50% White, 11% American Indian/Native Alaskan	Education, Tracking/reminder system, nutritionist completed summary on each referred patient which was mailed to clinician, letter to clinician urging drug treatment in all patients who have not responded to diet therapy after 7 months	Written Material, Lecture	Patient education materials
PREVENTION, CHILDREN							
Health Behavior Screening							
Schubiner, 1994	Physician Pre-professional training, Resident/fellow	RCT	Control (Interview) n=not specified		Education	Written Material, Lecture	
			Intervention (STQ) n=not specified		Education, provision of Safe Times Questionnaire completed by patient	Written Material, Lecture	

Evidence Table 2: Description of intervention characteristics for articles addressing Question 1 (continued)

Study	Targeted Healthcare Providers/Levels of Training	Study Design	Group	Patient Race/Ethnicity	Interventions	Educational Methods	Patient Interventions
Injury Prevention in Children							
Gielen, 2001	Physician Resident/fellow	RCT	Control n=76		Education	Written Material, Lecture	
			Intervention n=120		Education	Written Material, Lecture, 5 additional hours of experiential learning	
Well Baby Care							
Hornberger, 1996	Physician Professional	RCT	Proximate consecutive translation n=not specified	100% Hispanic	Proximate consecutive translation of patient and physician statements by an interpreter in the examination room		
			Remote simultaneous translation n=not specified	100% Hispanic	Remote simultaneous translation of patient and physician statements by interpreter in another location		

Evidence Table 2: Description of intervention characteristics for articles addressing Question 1 (continued)

Study	Targeted Healthcare Providers/Levels of Training	Study Design	Group	Patient Race/Ethnicity	Interventions	Educational Methods	Patient Interventions
MENTAL HEALTH							
Alcohol							
Burge, 1997	Physician Resident/fellow	RCT	Control n=not specified	100% Hispanic	No Interventions		
			Patient intervention n=not specified	100% Hispanic			Psychoeducation (9 hours)
			Physician and patient intervention n=not specified	100% Hispanic	Education, Tracking/reminder system, Standing Orders/protocols/guidelines/algorithms	Written Material, Lecture (8 hours)	Psychoeducation (9 hours)
			Physician intervention n=not specified	100% Hispanic	Education, Tracking/reminder system, Standing Orders/protocols/guidelines/algorithms	Written Material, lecture (8 hours)	
Depression							
Callahan, 1994	Physician Professional	RCT	Control n=100	53% African American	Education	Lecture	
			Intervention n=75	50% African American	Education, Standing Orders/protocols/guidelines/algorithms, 3 additional primary care visits scheduled with depressed patients	Written Material, Lecture, instruction in use of materials	

Evidence Table 2: Description of intervention characteristics for articles addressing Question 1 (continued)

Study	Targeted Healthcare Providers/Levels of Training	Study Design	Group	Patient Race/Ethnicity	Interventions	Educational Methods	Patient Interventions
Miranda, 2003	Nurse, Physician, nurse practitioner Professional	RCT	Behavioral therapists n=not specified		Education, in kind resources to support costs	Written Material, Lecture, Small Group, Academic Detailing	Nurse used culturally tailored written materials and videotapes to activate depressed patients to engage in treatment and psychotherapist provided individual and group Cognitive Behavioral Therapy for 8-12 sessions
			Control n=not specified			Written Material, (national practice guidelines)	
			Nurse follow-up n=not specified		Education, in kind resources to support costs	Written Material, Lecture, Small Group, Academic Detailing	Nurse used culturally tailored written materials and videotapes to activate depressed patients to engage in treatment and then nurses provided follow-up assessments for 6 to 12 months

Evidence Table 2: Description of intervention characteristics for articles addressing Question 1 (continued)

Study	Targeted Healthcare Providers/Levels of Training	Study Design	Group	Patient Race/Ethnicity	Interventions	Educational Methods	Patient Interventions
OTHER CLINICAL AREAS							
Acute Respiratory Infections							
Harris, 2003	Physician, nurse practitioners Professional	CCT	Baseline control group n=671	16% African American, 39% White, 42% Hispanic	No Interventions		
			Full intervention n=393	9% African American, 35% White, 41% Hispanic	Education, Standing Orders/protocols/guidelines/algorithms, posters for acute respiratory infection treatment guidelines in exam rooms	Written Material, Computer-based material, Lecture	Posters in exam rooms, computerized education in waiting room for patients
			Limited intervention n=805	12% African American, 37% White, 48% Hispanic	Education, Standing Orders/protocols/guidelines/algorithms, posters for acute respiratory infection treatment guidelines in exam rooms	Written Material, Lecture	Posters in exam rooms

Evidence Table 2: Description of intervention characteristics for articles addressing Question 1 (continued)

Study	Targeted Healthcare Providers/Levels of Training	Study Design	Group	Patient Race/Ethnicity	Interventions	Educational Methods	Patient Interventions
Asthma							
Evans, 1997	Nurse, Physician, Clerical staff, Laboratory technicians, Public health assistants Professional	RCT	Control n=not specified	46% African American, 34% Hispanic	Standing Orders/protocols/guidelines/algorithms, access to new medicines through increased distribution to clinics		
			Intervention n=not specified	44% African American, 33% Hispanic	Education, Standing Orders/protocols/guidelines/algorithms, access to new medicines through increased distribution to clinics 1) monthly visits by nurse-educator to clinic to help solve problems, 2) consultation (telephone) available with "expert" physician	Written Material, AV material, Lecture, Small Group, interactive exercise, performance of skit, clinical observation of "expert" physicians	
Chronic renal disease							
Harris, 1998	Physician Resident/fellow, Professional	RCT	Control n=231	80% African American	No Interventions		
			Intervention n=206	81% African American	Letter to primary care physician including summary of actions taken by consultant nephrologist, suggestions for future care, and summary of clinic visit		Consultation with nephrologist

Evidence Table 2: Description of intervention characteristics for articles addressing Question 1 (continued)

Study	Targeted Healthcare Providers/Levels of Training	Study Design	Group	Patient Race/Ethnicity	Interventions	Educational Methods	Patient Interventions
Emergency systems							
Kellermann, 1993	Firefighters Professional	CCT	Cardiopulmonary resuscitation control n=432	59% African American	No Interventions		
			Automated external defibrillators n=447	60% African American	Education	Simulated cardiac arrest scenario ("mega code" exercise)	
End of life							
Dexter, 1998	Physician Resident/fellow, Professional	RCT	Control n=253	60% African American, 39% White	Education	Written Material, Lecture, Face-to-face meetings	
			Instruction and Proxy Intervention n=277	56% African American, 44% White	Education, Tracking/reminder system	Written Material, Lecture, Face-to-face meetings	
			Instruction Directive n=219	56% African American, 44% White	Education, Tracking/reminder system	Written Material, Lecture, Face-to-face meetings	
			Proxy Directive n=260	49% African American, 51% White	Education, Tracking/reminder system	Written Material, Lecture, Face-to-face meetings	

Evidence Table 3: Results from articles addressing Question 1

Study	Targeted Healthcare Providers/Levels of Training	Study Design	Outcome Type	Outcome	How Measured	Intervention Effect	Summary	
							Between-Group Summary	Within-Group Summary
PREVENTION, ADULT								
Adult, General Prevention								
Gemson, 1995	Physician Resident/fellow, Professional	CCT	Quality of Providers	Breast self examination counseling	Patient report	Changes in breast self-exam counseling rates received by patients pre and post intervention time period: intervention + 0.12 ($p<0.01$); control -0.06 ($p=0.25$).	not available	significant improvement
			Quality of Providers	Nutrition and weight control counseling	Patient report	Changes in nutrition and weight control counseling rates received by patients pre and post intervention time period: intervention +0.11 ($p=0.02$); control -0.05 ($p=0.27$).	not available	significant improvement
			Quality of Providers	Prevention knowledge	Provider written test	The overall change in physician knowledge of prevention was significantly greater for the intervention [+2.67 (SD 3.96)] compared to control [+1.58 (SD 3.43)] ($p=0.03$).	significant improvement	not available
			Quality of Providers	Exercise counseling	Provider self report	Positive change in physician exercise counseling practices comparing intervention to control ($p<0.01$).	significant improvement	not available

Evidence Table 3: Results from articles addressing Question 1 (continued)

Study	Targeted Healthcare Providers/Levels of Training	Study Design	Outcome Type	Outcome	How Measured	Intervention Effect	Summary	
							Between-Group Summary	Within-Group Summary
			Quality of Providers	Nutrition and weight control counseling	Provider self report	Positive change in physician nutrition and weight control counseling practices comparing intervention to control (p<0.01).	significant improvement	not available
			Quality of Providers	Smoking cessation counseling	Patient report	Change in receipt of smoking cessation counseling rates pre and post intervention time period: intervention +0.03 (p=0.08), control +0.01 (p=0.4).	not available	improvement
			Quality of Providers	Breast cancer screening	Provider self report	Positive change in physician breast cancer screening practices comparing intervention to control (p=0.01).	significant improvement	not available
			Quality of Providers	Smoking cessation counseling	Provider self report	Positive change in physician smoking cessation counseling practices comparing intervention to control (p<0.01).	significant improvement	not available
			Quality of Providers	Exercise counseling	Patient report	Changes in exercise counseling rates received by patients pre and post intervention time period: intervention + 0.07 (p<0.01); control + 0.03 (p=0.14).	not available	significant improvement

Evidence Table 3: Results from articles addressing Question 1 (continued)

Study	Targeted Healthcare Providers/Levels of Training	Study Design	Outcome Type	Outcome	How Measured	Intervention Effect	Summary	
							Between-Group Summary	Within-Group Summary
McDonald, 1984	Physician, nurse clinicians Resident/fellow, Professional	RCT	Health Status	Blood pressure, weight, serum glucose, serum hemoglobin, serum potassium, and blood urea nitrogen	Medical record review	No significant differences between patients assigned to intervention group physicians and control physicians.	no improvement	not available
			Utilization	Hospitalizations and emergency room visits for patients eligible for pneumococal or influenza vaccines	Review of admission logs	Patients cared for by intervention group physicians had fewer hospitalizations and emergency room visits in the years influenza occurred ($p<0.02$).	significant improvement	not available
			Utilization	Overall number of hospitalizations, emergency room visits, or clinic visits	Review of admission logs	No significant overall differences between patients assigned to intervention group physicians and control physicians.	no improvement	not available
			Appropriateness of Care	Physician response to computerized reminders	Computer record review	49% of physicians responded to computerized reminders in intervention group compared to 29% in control group ($p<0.001$).	significant improvement	not available
			Appropriateness of Care	Physician response to computerized reminders regarding preventive care	Computer record review	Physicians in intervention group were 2 to 4 times more likely to apply preventive care to their eligible patients than were control group physicians ($p<0.005$).	significant improvement	not available

Evidence Table 3: Results from articles addressing Question 1 (continued)

Study	Targeted Healthcare Providers/Levels of Training	Study Design	Outcome Type	Outcome	How Measured	Intervention Effect	Summary	
							Between-Group Summary	Within-Group Summary
Turner, 1989	Physician Resident/fellow	CCT	Appropriateness of Care	Guaiac test rates	Medical record review	Guaiac test rates increased from 34.1% to 50% in the physician-reminder group ($p<0.05$), increased from 32.6% to 42.5% (p=ns) in the patient-reminder group, and increased from 29.7% to 46.1% ($p<0.05$) in the combined intervention group.	not available	significant improvement
			Appropriateness of Care	Rectal exam rates	Medical record review	Rectal exam rates increased from 10.4% to 52.6% in the physician-reminder group ($p<0.05$), increased from 32.3% to 46.9% ($p<0.05$) in the patient-reminder group, and increased from 34.1% to 57.1% ($p<0.05$) in the combined intervention group.	not available	significant improvement
			Appropriateness of Care	Pap smear rates	Medical record review	Pap smear rates increased from 20.3% to 33.1% in the physician-reminder group (p=ns), decreased from 29.4% to 27.5% (p=ns) in the patient-reminder group, and increased from 20.5% to 40% (p=ns) in the combined intervention group.	not available	no improvement

Evidence Table 3: Results from articles addressing Question 1 (continued)

Study	Targeted Healthcare Providers/Levels of Training	Study Design	Outcome Type	Outcome	How Measured	Intervention Effect	Summary	
							Between-Group Summary	Within-Group Summary
			Appropriateness of Care	Breast exam rates	Medical record review	Breast exam rates increased from 37.5% to 53.5% in the physician-reminder group ($p<0.05$), increased from 41.2% to 53.6% ($p<0.05$) in the patient-reminder group, and increased from 38.3% to 47.8% (p=ns) in the combined intervention group.	not available	significant improvement
			Appropriateness of Care	Mammogram rates	Medical record review	Mammogram rates increased from 14.3% to 15% in the physician-reminder group (p=ns), increased from 15% to 46.6% ($p<0.05$) in the patient-reminder group, and increased from 0% to 4.8% (p=ns) in the combined intervention group.	not available	significant improvement
			Appropriateness of Care	Tetanus immunization rates	Medical record review	No change reported in any group.	not available	no improvement
Adult, Cancer Screening								
Burack, 1994	Nurse, Physician Professional	RCT	Appropriateness of Care	Mammogram appointment	Mammogram appointment rates	At each site, full intervention status was associated with significant increase in mammogram appointment rates with absolute increase from 13% to 29% compared to limited intervention.	significant improvement	not available

Evidence Table 3: Results from articles addressing Question 1 (continued)

Study	Targeted Healthcare Providers/Levels of Training	Study Design	Outcome Type	Outcome	How Measured	Intervention Effect	Summary	
							Between-Group Summary	Within-Group Summary
			Appropriateness of Care	Overall use of mammography	Mammogram appointment completion rates	Compared to limited intervention, full intervention was associated with a significant increase in the mammography rate at each of the sites.	significant improvement	not available
			Appropriateness of Care	Completion of first mammogram appointment	Completed mammogram appointments	No differences in completion of first mammography appointment between full intervention groups.	not available	not available
Burack, 1996	Physician Professional	RCT	Utilization	Primary care visit rates in 1 year	Administrative data	No significant relation between interventions and primary care visitation.	no improvement	not available
			Appropriateness of Care	Mammography screening rates (completion in study year)	Administrative data	Mammography rates were higher for the two groups of women assigned to the physician reminder intervention, but only at one of two HMO sites. No significant difference for patient intervention.	improvement	improvement
Burack, 1997	Physician Professional	RCT	Appropriateness of Care	Annual mammography rates	Medical record review; computerized administrative records	At the end of year 2, mammography rates were 44% for full intervention versus 28% for limited intervention at the health department (OR: 1.84, 95% CI:1.40, 2.40) and 45% for full versus 46% for limited at the health maintenance organization (OR: 1.06, 95% CI: 0.08, 1.42).	significant improvement	not available

Evidence Table 3: Results from articles addressing Question 1 (continued)

Study	Targeted Healthcare Providers/Levels of Training	Study Design	Outcome Type	Outcome	How Measured	Intervention Effect	Summary	
							Between-Group Summary	Within-Group Summary
Burack, 1998	Physician Professional	RCT	Appropriateness of Care	Completion of pap smear	Reports of pap-smear results	Women who received the patient and physician reminders together had 1.23 times the odds of completing pap smear screening (95% CI, 1.01, 1.50) than women who received neither intervention. The pap smear rates for women in the patient only or physician only intervention were not significantly different than the pap smear rates for women who received neither intervention.	significant improvement	not available
			Utilization	Primary care visits	Administrative data	No significant association of intervention.	no improvement	not available
Burack, 2003	Physician Professional	RCT	Appropriateness of Care	Completing pap smear	Medical record review	Combined reminder treatment associated with increased likelihood of pap smear (30% versus 23%, p=0.007) OR 1.39.	significant improvement	not available
			Appropriateness of Care	Completing mammogram	Medical record review	No difference between combined reminder treatment and mammogram only reminder (39% versus 40%).	no improvement	not available
			Utilization	Visits to gynecology	Medical record review	Combined reminder treatment associated with increased rate of visits (34% versus 29%, p=0.001).	significant improvement	not available
			Utilization	Visits to primary care physician	Medical record review	No difference between groups.	no improvement	not available

Evidence Table 3: Results from articles addressing Question 1 (continued)

Study	Targeted Healthcare Providers/Levels of Training	Study Design	Outcome Type	Outcome	How Measured	Intervention Effect	Summary	
							Between-Group Summary	Within-Group Summary
Chambers, 1989	Physician Resident/fellow, Professional	RCT	Appropriateness of Care	Mammography rates	Medical record review	At the end of the study period, 27% of the experimental group were up-to-date as compared with 21% of the control group (p=0.011).	significant improvement	not available
Dietrich, 1998	Nurse, Physician, Office staff, Clinical directors Professional	RCT	Appropriateness of Care	Mammography rates in females over 50	Medical record review	Both interventions and control groups showed increased rates, 58% to 65% in the intervention group (p=0.008) versus 59% to 64% in the control group (p=0.02).	no improvement	improvement
			Appropriateness of Care	Oral cavity exam	Medical record review	Both intervention and control groups showed significantly increased rates, 67% to 78% in the intervention group versus 73% to 83% in the control group (p<0.001).	no improvement	significant improvement
			Appropriateness of Care	Rates of clinical breast exams in all females	Medical record review	Both intervention and control groups showed increased rates, 50% to 63% in the intervention group versus 55% to 59% in the control group (significant in both groups).	no improvement	significant improvement
			Appropriateness of Care	Rates of pap test in all females	Medical record review	Intervention showed no change in rates, changing from 52% to 55%, while the control group increased rates from 43% to 62% (p<0.01)	no improvement	improvement

Evidence Table 3: Results from articles addressing Question 1 (continued)

Study	Targeted Healthcare Providers/Levels of Training	Study Design	Outcome Type	Outcome	How Measured	Intervention Effect	Summary	
							Between-Group Summary	Within-Group Summary
			Appropriateness of Care	Fecal occult blood test	Medical record review	Both intervention and control groups increased rates, 9% to 19% in the intervention group versus 7% to 19% in the control group (not significant in either group).	no improvement	improvement
			Appropriateness of Care	Digital rectal exam	Medical record review	Both intervention and control groups showed increased rates, 35% to 41% in the intervention group (not significant) versus 34% to 49% in the control group (p=0.03).	no improvement	improvement
			Quality of Providers	Rates of breast self-exam advice in all females	Medical record review	Both interventions and control groups showed increased rates, 4% to 13% in the intervention group (p<0.001) versus 3% to 8% in the control group (not significant). Intervention showed a greater increase than control (p=0.009).	significant improvement	significant improvement
			Appropriateness of Care	Sigmoidoscopy	Medical record review	Neither intervention or control arm increased rates, 3% to 3% in the intervention group versus 2% to 2% in the control group.	no improvement	no improvement
Mandelblatt, 1993	Nurse, Physician Resident/fellow, Professional	CCT	Appropriateness of Care	Mammography screening rates	Medical record review	Significant increase in the mammography screening rate in intervention 18% to 40% versus control 18% to 18% (p<0.01).	significant improvement	not available

Evidence Table 3: Results from articles addressing Question 1 (continued)

Study	Targeted Healthcare Providers/Levels of Training	Study Design	Outcome Type	Outcome	How Measured	Intervention Effect	Summary	
							Between-Group Summary	Within-Group Summary
			Appropriateness of Care	Pap test screening rates	Medical record review	Significant increase in the pap test screening rate in the intervention 17% to 57% versus the control 12% to 18% (p<0.01).	significant improvement	not available
Manfredi, 1998	Physician Professional	RCT	Appropriateness of Care	Rates of pap smears among eligible patients of HMO/not of HMO	Medical record review	Rates increase in HMO patients only from 55.7% at baseline to 59.7% post-intervention but decrease in control group from 56.1% to 48.2% (not statistically significant).	significant improvement	not available
			Appropriateness of Care	Rates of clinical breast exams (CBE) among eligible patients of HMO/not of HMO	Medical record review	No effect of intervention in HMO patients/positive effect of intervention among non-HMO patients with rates increasing from 26.6 to 36.5% in intervention clinics and decreasing in control clinics (p<0.05).	significant improvement	not available
			Appropriateness of Care	Rates of fecal occult blood testing (FOBT) among eligible patients of HMO/not of HMO	Medical record review	Rates increased in both groups of patients. For HMO patients, rates increased from 3.2% to 12.5% in the intervention clinics with decrease in control clinics (p<0.05). In non-HMO patients, rates increased from 4.5% to 5.2% in intervention clinics while de	significant improvement	not available

Evidence Table 3: Results from articles addressing Question 1 (continued)

Study	Targeted Healthcare Providers/Levels of Training	Study Design	Outcome Type	Outcome	How Measured	Intervention Effect	Summary	
							Between-Group Summary	Within-Group Summary
			Appropriateness of Care	Rates of mammograms among eligible patients of HMO/not of HMO	Medical record review	No effect of intervention in either group of patients.	no improvement	not available
McCarthy, 1997	Nurse, Medical assistant Professional	CCT	Appropriateness of Care	Mammography screening rates	Computerized audit of billing records	Prior to the intervention, the proportion of visits in which women were up-to-date was 68% in the intervention clinic and 66% in each control clinic. At the end of evaluation, there was an absolute increase of 9% in the intervention group (95% CI 2-16%) while one control clinic had an absolute increase of 1% (95%. CI:-5, 7%) and the other has an absolute decrease of 2% (95%. CI: - 3, 5%).	not available	significant improvement
Adult ,Tobacco Cessation								
Ahluwalia, 1999	Physician Resident/fellow	CCT	Quality of Providers	Smoking cessation counseling by provider; ASK if patient smokes cigarettes or any other form of tobacco	Patient report	Odds ratio of "ASK" between intervention and control: if smokes cigarettes 3.97 (2.87, 5.49); if uses other tobacco products 1.40 (0.91, 2.18).	significant improvement	not available

Evidence Table 3: Results from articles addressing Question 1 (continued)

Study	Targeted Healthcare Providers/Levels of Training	Study Design	Outcome Type	Outcome	How Measured	Intervention Effect	Summary	
							Between-Group Summary	Within-Group Summary
			Quality of Providers	Smoking cessation counseling by provider; ASSIST how or when to quit smoking	Patient report	Odds ratio of "ASSIST" between intervention and control groups: how to quit 1.60 (0.78, 3.31); set a date 0.74 (0.16, 3.34).	improvement	not available
			Quality of Providers	Smoking cessation counseling by provider; ADVISE to quit smoking	Patient report	Odds ratio of "ADVISE" between intervention and control groups 1.75 (1.29, 2.35).	significant improvement	not available
			Quality of Providers	Smoking cessation counseling by provider; ARRANGE follow-up or refer to specialist	Patient report	Odds ratio of "ARRANGE" between intervention and control 1.97 (1.20, 3.24).	significant improvement	not available
Allen, 1998	Physician Resident/fellow	RCT	Quality of Providers	Protocol adherence	Patient report	Only 16% of the control group patients compared to nearly 70% of the intervention patients reported that their physician urged them to quit smoking.	improvement	not available
			Patient Adherence	3 month quit rate	Patient report	6.1% for intervention group versus 5.2% for control group (p=not specified).	no improvement	not available
			Patient Adherence	12 month quit rate	Saliva cotinine tests	3.2% for intervention group versus 2.8% for control group, (p=not specified).	no improvement	not available

Evidence Table 3: Results from articles addressing Question 1 (continued)

Study	Targeted Healthcare Providers/Levels of Training	Study Design	Outcome Type	Outcome	How Measured	Intervention Effect	Summary	
							Between-Group Summary	Within-Group Summary
			Patient Adherence	12 month quit rate	Patient report	8.4% for intervention group versus 10.6% for control group (not significant).	no improvement	not available
			Patient Adherence	3 month quit rate	Saliva cotinine tests	2% for intervention group versus 1.8% for control group (not significant).	no improvement	not available
Adult, Cholesterol								
Keyserling, 1997	Physician, Nurse practitioners, Physician assistants Professional	RCT	Health Status	Difference in total cholesterol among participants not on lipid lowering therapy at one year	Blood tests	Average reduction of 0.14 mmol/L (5.3 mg/dL) greater in intervention group (p=0.01).	significant improvement	not available
			Quality of Providers	Clinician dietary counseling behavior	Medical record review	Cholesterol mentioned in progress note for 10% of intervention patients and 30% of control patients on first routine follow-up (statistical significance not assessed).	no improvement	not available
			Appropriateness of Care	Referral for dietary counseling	Medical record review	9% of control group patients compared to 2% of intervention patients referred for dietary counseling (statistical significance not assessed).	no improvementno t available	
			Appropriateness of Care	Number patients taking lipid lowering medication	Medical record review	8% of intervention patients compared to 15% of control group patients were taking lipid-lowering medication on	no improvement	not available

Evidence Table 3: Results from articles addressing Question 1 (continued)

Study	Targeted Healthcare Providers/Levels of Training	Study Design	Outcome Type	Outcome	How Measured	Intervention Effect	Summary	
							Between-Group Summary	Within-Group Summary
						follow-up (p=0.05).		

Evidence Table 3: Results from articles addressing Question 1 (continued)

Study	Targeted Healthcare Providers/Levels of Training	Study Design	Outcome Type	Outcome	How Measured	Intervention Effect	Summary	
							Between-Group Summary	Within-Group Summary
			Health Status	Difference in total cholesterol among all study participants at one year	Blood tests	Averaged over 1 year follow-up, the total cholesterol reduction in the intervention group was 0.08 mmol/L (3.0 mg/dL) greater than in control group (p=0.09).	improvement	not available
			Patient Adherence	Dietary habits	Patient report, dietary risk assessment	Sustained decrease in both groups with average reduction in the intervention group significantly more than for the control group (p>0.001).	significant improvement	not available
			Health Status	Difference in LDL among all study participants at one year	Blood tests	Average reduction 0.10 mmol/L (3.7 mg/dL) greater in intervention group (p=0.08).	improvement	not available
PREVENTION, CHILDREN								
Health Behavior Screening								
Schubiner, 1994	Physician Pre-professional training, Resident/fellow	RCT	Quality of Providers	Total time of interview	Videotaped encounters	Physicians in intervention group had shorter visits than physicians in the control group.	improvement	not available
			Quality of Providers	Accuracy of physician assessment of patient need for interventions in each "Safe	Compared to "gold standard" of psychologist interview	Physicians in the intervention group had higher agreement with psychologist ratings in identification of subjects at risk for depression and family conflicts than the physicians	improvement	not available

Evidence Table 3: Results from articles addressing Question 1 (continued)

Study	Targeted Healthcare Providers/Levels of Training	Study Design	Outcome Type	Outcome	How Measured	Intervention Effect	Summary	
							Between-Group Summary	Within-Group Summary
				Times" topic area		in the control group.		
			Patient Satisfaction	Patient satisfaction	Medical Interview Satisfaction Scale	No difference in satisfaction between groups.	no improvement	not available
			Quality of Providers	Time spent making assessment versus counseling in each area	Videotaped encounters	Physicians in intervention group spent less time in assessment rather than counseling in each of the "Safe Times" areas ($p<0.05$).	significant improvement	not available
			Quality of Providers	Total time spent in each of the "Safe Times" topics	Videotaped encounters	Physicians in intervention group spent less time discussing each of the specific "Safe Times" topics.	improvement	not available
			Quality of Providers	Time spent discussing "Safe Times" topics	Videotaped encounters	Physicians in intervention group spent less time discussing all "Safe Times" topics.	improvement	not available
Injury Prevention in Children								
Gielen, 2001	Physician Resident/fellow	RCT	Patient Adherence	Safety practices	Self report and home-observation	Groups did not differ.no improvement	not available	
			Efficacy of Treatment	Parental knowledge and beliefs regarding injury prevention	Follow-up interview	Groups did not differ.	no improvement	not available
			Patient Satisfaction	Satisfaction	Patient report	Patients in the intervention group rated the help they received with safety topics	significant improvement	not available

Evidence Table 3: Results from articles addressing Question 1 (continued)

Study	Targeted Healthcare Providers/Levels of Training	Study Design	Outcome Type	Outcome	How Measured	Intervention Effect	Summary	
							Between-Group Summary	Within-Group Summary
						significantly higher than patients in the control group (p=0.01).		

Evidence Table 3: Results from articles addressing Question 1 (continued)

Study	Targeted Healthcare Providers/Levels of Training	Study Design	Outcome Type	Outcome	How Measured	Intervention Effect	Summary	
							Between-Group Summary	Within-Group Summary
			Quality of Providers	Injury prevention counseling	Audiotape analysis	Mention of safety strategies was higher in intervention group (9.4 +/- 6.8) than control group (3.7 +/- 3.2).	improvement	not available
Well Baby Care								
Hornberger, 1996	Physician Professional	RCT	Quality of Providers	Adequacy of interpretation	Audiotape analysis	The remote simultaneous translation group had a 13% lower rate of inaccurately interpreted mother utterance per visit than the proximate consecutive service (most were omissions).	improvement	not available
			Quality of Providers	Number of questions asked by mother	Audiotape analysis	Significantly more questions were asked by mothers in the remote simultaneous translation than with the proximate consecutive translation service (no p-values given).	improvement	not available
			Quality of Providers	Provider preference for type of intervention	Provider self report	Providers preferred remote simultaneous translation to proximate consecutive translation.	improvement	not available

Evidence Table 3: Results from articles addressing Question 1 (continued)

Study	Targeted Healthcare Providers/Levels of Training	Study Design	Outcome Type	Outcome	How Measured	Intervention Effect	Summary	
							Between-Group Summary	Within-Group Summary
			Utilization	Duration of encounter	Audiotape analysis	No significant difference between intervention and control.	no improvement	not available
			Quality of Providers	Number of explanations by mother	Audiotape analysis	The number of mother explanations per visit was 22% more in the remote simultaneous translation group than in the proximate consecutive translation group visits.	improvement	not available
			Quality of Providers	Number of explanations by physicians	Audiotape analysis	The number of physician explanations per visit was 18% more in the remote simultaneous translation group than in the proximate consecutive translation group visits.	improvement	not available
			Patient Satisfaction	Patient preference for type of intervention	Patient self report	All 17 mothers who experienced both types of translation and who responded to the survey preferred remote simultaneous translation.	improvement	not available
			Quality of Providers	Patient-physician eye-to-eye contact	Provider self-report	Physician reported that eye-to-eye contact was improved in remote simultaneous translation group.	improvement	not available

Evidence Table 3: Results from articles addressing Question 1 (continued)

Study	Targeted Healthcare Providers/Levels of Training	Study Design	Outcome Type	Outcome	How Measured	Intervention Effect	Summary	
							Between-Group Summary	Within-Group Summary
MENTAL HEALTH								
Alcohol								
Burge, 1997	Physician Resident/fellow	RCT	Health Status	Addiction Severity Index (ASI) Family Score	Interview; medical record review	Decreased over time in all groups (p=0.000), but decrease more significant for physician intervention group at 12 months (p=0.003).	significant improvement	significant improvement
			Health Status	Addiction Severity Index (ASI) Employment Score	Interview; medical record review	No change over time in any group (not significant) at 12 months.	no improvement	no improvement
			Health Status	Addiction Severity Index (ASI) Alcohol score	Interview; medical record review	Decreased over time in all groups (p=0.000). No difference between groups at 12 months.	no improvement	significant improvement
			Health Status	Drinks per week	Interview; medical record review	Decreased over time for all groups (p=0.000). No difference between groups at 12 months.	no improvement	significant improvement
			Health Status	Addiction Severity Index (ASI) Medical Score	Interview; medical record review	Decreased over time in all groups (p=0.000) at 12 months.	no improvement	significant improvement
			Health Status	Mean Corpuscular Volume (MCV)	Blood test	Decreased over time in all groups (p=0.000). No difference between groups at 12 months.	no improvement	significant improvement

Evidence Table 3: Results from articles addressing Question 1 (continued)

Study	Targeted Healthcare Providers/Levels of Training	Study Design	Outcome Type	Outcome	How Measured	Intervention Effect	Summary	
							Between-Group Summary	Within-Group Summary
			Health Status	Liver enzymes (SGot, SGPt, GGT)	Blood test	No difference between groups at 12 months. SGoT decreased over time (p=0.000) in all groups.	no improvement	significant improvement
Depression								
Callahan, 1994	Physician Professional	RCT	Appropriateness of Care	Percentage of patients with depression diagnosis recorded at 6 months	Medical record review	32.3% (intervention) versus 12.1% (control) (p=0.002).	significant improvement	not available
			Appropriateness of Care	Percentage of patients with newly-prescribed antidepressant at 6 months	Medical record review	26.0% (intervention) versus 8.0% (control) (p=0.01).	significant improvement	not available
			Appropriateness of Care	Percentage of patients referred to psychiatry at 6 months	Medical record review	13.7% (intervention) versus 12.1% (control) (no significant differences).	no improvement	not available
			Health Status	Depression	Hamilton Depression Scale	Both groups showed statistically significant improvement in depression at 6 months (no significant difference between groups).	no improvement	not available
			Appropriateness of Care	Percentage of patients in whom drug associated with depression was discontinued	Medical record review	22.0% (intervention) versus 23.0% (control) (no significant difference).	no improvement	not available

Evidence Table 3: Results from articles addressing Question 1 (continued)

Study	Targeted Healthcare Providers/Levels of Training	Study Design	Outcome Type	Outcome	How Measured	Intervention Effect	Summary	
							Between-Group Summary	Within-Group Summary
Miranda, 2003	Nurse, Physician, nurse practitioner Professional	RCT	Health Status	Depression	Composite International Diagnostic Interview (CIDI)	At 6 and 12 months, patients in both intervention groups were less likely than patients in control group to meet criteria for probable depressive disorder (39.9% versus 49.9%, p=0.001). In subgroup analysis only African American and Latino patients were significantly less likely to screen positive for depression, whereas the difference was not significant for white patients.	significant improvement	not available
			Appropriateness of Care	Appropriate depression care	Not specified	At 6 and 12 months, all patients (African American, Latino, and white) in both intervention groups were more likely than controls to receive counseling or to receive anti-depressant medications (50.9% versus 39.7%, p<0.001).	significant improvement	not available
			Health Status	Employment	Telephone and mailed survey	At 6 and 12 months, there were no improvements for African American or Latino patients in employment rates, however, there were improvements for white patients.	no improvement	not available

Evidence Table 3: Results from articles addressing Question 1 (continued)

Study	Targeted Healthcare Providers/Levels of Training	Study Design	Outcome Type	Outcome	How Measured	Intervention Effect	Summary	
							Between-Group Summary	Within-Group Summary
OTHER CLINICAL AREAS								
Acute Respiratory Infections								
Harris, 2003	Physician, nurse practitioners Professional	CCT	Appropriateness of Care	Antibiotic prescription rates for acute bronchitis	Medical record review	The proportion of patients with acute bronchitis decreased from 58% in the baseline period to 30% and 24% among patients exposed to the limited and full interventions (p<0.001 for intervention groups versus baseline). No differences between groups.	no improvement	significant improvement
			Appropriateness of Care	Antibiotic prescription rates for non-specific upper respiratory tract infections	Medical record review	Antibiotic prescriptions for nonspecific upper respiratory tract infections decreased from 14% to 3% and 1% in the limited and full intervention groups (p<0.001 for intervention groups versus baseline). No difference between limited and full intervention groups.	no improvement	significant improvement

Evidence Table 3: Results from articles addressing Question 1 (continued)

Study	Targeted Healthcare Providers/Levels of Training	Study Design	Outcome Type	Outcome	How Measured	Intervention Effect	Summary	
							Between-Group Summary	Within-Group Summary
Asthma								
Evans, 1997	Nurse, Physician, Clerical staff, Laboratory technicians, Public health assistants Professional	RCT	Appropriateness of Care	Patient education by physician and nurse	Patient report	Patient reported education by physicians was 71% for intervention versus 58% for control patients ($p<0.01$), and by nurses was 61% for intervention versus 41% for control patients ($p<0.05$).	significant improvement	not available
			Utilization	Continuity of care	Average number of visits made by children with asthma per year	Average number of visits made by children with asthma increased in intervention clinics from baseline through both follow-up periods (2.15 in 1992 versus 2.42 in 1993 versus 1.41 in 1991, $p<0.001$) and remained the same in control clinics.	not available	significant improvement
			Appropriateness of Care	Use of appropriate medicines	Proportion of patients with asthma who had each type of medication dispensed	In the intervention clinics, a higher proportion of patients with asthma compared to controls were given inhaled anti-inflammatory medication (17 versus 3, $p<0.001$), spacers devices (28 versus 3, $p<0.001$), and anti-inflammatory meds (68 versus 50, $p<0.05$).	significant improvement	not available

Evidence Table 3: Results from articles addressing Question 1 (continued)

Study	Targeted Healthcare Providers/Levels of Training	Study Design	Outcome Type	Outcome	How Measured	Intervention Effect	Summary	
							Between-Group Summary	Within-Group Summary
			Utilization	Continuity of care	Proportion of patients treated for asthma in 1 year who returned for treatment the next year	Percent of patients with asthma in year 1 who returned in year 2 increased in intervention clinics 16% to 32% (p<.0002) and decreased slightly in control clinics 14% to 12% (not significant).	not available	significant improvement
			Appropriateness of Care	Identification/ treatment of asthma patients	Number of asthmatic patients per 1000 clinic patients	Intervention clinics doubled (p<.001) rate at which they identified asthma patients with no change in control clinics during both 1st and 2nd follow-up years.	not available	significant improvement
Chronic Renal Disease								
Harris, 1998	Physician Resident/fellow, Professional	RCT	Utilization	All outpatient clinic visits (years 3-5 after enrollment)	Medical record review	Intervention group patients had significantly more outpatient clinic visits overall than did control group patients, 26 versus 18 (p<0.001).	significant improvement	not available
			Health Status	Blood pressure (years 3-5 after enrollment)	Medical record review	No significant differences in systolic and diastolic blood pressures between groups.	no improvement	not available
			Utilization	Emergency department visits (years 3-5 after enrollment)	Medical record review	No significant difference in emergency department visits between groups.	no improvement	not available
			Utilization	Hospitalizations (years 3-5 after enrollment)	Medical record review	No significant difference in number of hospitalizations between groups.	no improvement	not available

Evidence Table 3: Results from articles addressing Question 1 (continued)

Study	Targeted Healthcare Providers/Levels of Training	Study Design	Outcome Type	Outcome	How Measured	Intervention Effect	Summary	
							Between-Group Summary	Within-Group Summary
			Appropriateness of Care	Calcium channel blocker use (years 3-5 after enrollment)	Medical record review	Patients in the intervention group were more likely to be on a calcium channel blocker than were patients in control group, 49% versus 35% (p=0.003).	no improvement	not available
			Utilization	Ophthalmology clinic visits (years 3-5 after enrollment)	Medical record review	Patients in the intervention group had a greater number of ophthalmology appointments than did patients in the control group, 1.8 versus 1.2 (p=0.07).	improvement	not available
			Health Status	Cumulative 5 year mortality	Death certificate from Indiana State Department of Health, hospital death summaries, discharge status reports, autopsy reports	No significant difference in intervention (29%) versus control (33%) group in cumulative 5 year mortality.	no improvement	not available
			Health Status	Change in renal function (years 3-5 after enrollment)	Medical record review	Intervention group patients had lower creatinine clearance than did control group patients, 30 versus 34 (p=0.10).	no improvement	not available
Emergency Systems								
Kellermann, 1993	Firefighters Professional	CCT	Health Status	Neurological deficits	Physician/nurse report	Neurological outcomes for survivors of both groups were similar.	no improvement	not available

Evidence Table 3: Results from articles addressing Question 1 (continued)

Study	Targeted Healthcare Providers/Levels of Training	Study Design	Outcome Type	Outcome	How Measured	Intervention Effect	Summary	
							Between-Group Summary	Within-Group Summary
			Health Status	Survival to hospital discharge	Hospital report	Patients treated by automated external defibrillator equipped responders were no more likely to survive to hospital discharge.	no improvement	not available
			Health Status	Survival to hospital admission	Written report	Patients treated by automated external defibrillator equipped responders were no more likely to survive to hospital admission.	no improvement	not available
End of Life								
Dexter, 1998	Physician Resident/fellow, Professional	RCT	Patient Adherence	Completion of either Instruction or Proxy Directive	Patients complete either Directive	The percentage of patients who completed either directive was 15% in the instruction and proxy group, 7% in the instruction group, 3% in the proxy group, and 4% in the control group.	improvement	not available
			Quality of Providers	Discussion of advance directives	Patient report	Compared with control, dissemination of advanced directives had OR of 7.7 (3.4 to 18) in instruction and proxy group; 4.4 (2.1 to 9.4) in instruction group; and 2.5 (1.1 to 5.5) in proxy group.	significant improvement	not available

Evidence Table 3: Results from articles addressing Question 1 (continued)

Study	Targeted Healthcare Providers/Levels of Training	Study Design	Outcome Type	Outcome	How Measured	Intervention Effect	Summary	
							Between-Group Summary	Within-Group Summary
			Quality of Providers	Initiation of discussion	Patient report	Discussions initiated by physician in 86% of instances in instruction and proxy group, 77% in instruction group, 43% in proxy group, and 38% in control group.	improvement	not available
			Patient Adherence	Completion of Proxy Directive	Completion of form by patient	The percentage of patients who complete a Proxy Directive was 8% in the instruction and proxy group, 4% in the instruction group, 1% in the proxy group, and 2% in the control group.	improvement	not available
			Patient Adherence	Completed Instruction Directive	Completion of form by patient	The percentage of patients who completed an instruction directive in the instruction and proxy group was 15%, 7% in instruction group, 2% in proxy group, and 2% in control group.	improvement	not available

Evidence Table 4: Description of study characteristics for articles addressing Question 2, sorted by targeted healthcare provider(s)

Study	Categorization of Curriculum Content		Training Methods	Contact Time	Training Objectives
	Cultural Concepts	Specific Cultures			
PHYSICIAN					
Beagan, 2003, Canada	Language, Specific cultural content	Not Specified	Clinical experiences, Lectures, Standardized patient, Small group	1 afternoon each week held over 2 years	To develop physicians who are sensitive to the ethnic, cultural, and gender diversity of the community.
					To develop students skills to address critical issues in the doctor-patient relationship including cross-cultural healthcare.
Copeman, 1989, Australia	Racism, Doctor-patient interactions, Language, Specific cultural content	Other specific culture: Aboriginal	Case scenarios, Clinical experiences, Discussion (group), Interviewing members, Presentations	Not Specified	To be aware and reassess any prejudices, stereotypes, and judgmental attitudes towards Aboriginal or ethnic minorities.
					To practice overcoming difficulties in communicating with persons of different cultures and languages.
					To be aware of difficulties in communicating with different cultures.
					To understand how sociocultural backgrounds affect health.
					To learn basic facts about Aboriginal and migrant health, their social, and cultural backgrounds.
Crandall, 2003, U. S.	General concepts of culture, Racism, Specific cultural content, Socioeconomic status (SES)	Not Specified	Audio/Visual, Case scenarios, Demonstration/role, Interviewing members, Lectures, Problem based, Readings, Role play	20 2-3 hour sessions held over 1 year	To help students become more culturally competent by moving towards conscious incompetence, and in some instances to conscious competence.

Evidence Table 4: Description of study characteristics for articles addressing Question 2, sorted by targeted healthcare provider(s) (continued)

Study	Categorization of Curriculum Content		Training Methods	Contact Time	Training Objectives
	Cultural Concepts	Specific Cultures			
Culhane-Pera, 1997, U. S.	General concepts of culture, Doctor-patient interactions, Language, Specific cultural content	Hispanic	Audio/Visual, Clinical experiences, Discussion (group), Drill/practice exercise, Lectures, Literature, Presentations, Role play	3 1-day sessions	To define culture and factors influencing culture of different population groups.
					To describe beliefs, values, behaviors, and health practices of ethnic groups.
					To be aware of own cultural beliefs, values, and practices and respect patients' and families' behaviors and values as pertinent to their medical problems.
					To appreciate the heterogeneity of patients, providers, and the clinical encounter.
					To inquire about beliefs, practices, and values of patients and family.
					To obtain medical history considering cultural information.
					To perform physical exam that is adjusted to the patient's cultural desires. To work with interpreters.
					To consider cultural information in making diagnostic and therapeutic plans.
					To be aware of sociocultural factors.
Dogra, 2001,U. K.	General concepts of culture	Not Specified	Brainstorming, Case scenarios, Drill/practice exercise, Lectures, Self study, Small group	2 hours sessions in one week	To evaluate students' own attitudes and perceptions of different groups within society.
					To demonstrate respect for patients and colleagues that encompasses without prejudice, diversity of background and opportunity, language, culture, and way of life.

Evidence Table 4: Description of study characteristics for articles addressing Question 2, sorted by targeted healthcare provider(s) (continued)

Study	Categorization of Curriculum Content		Training Methods	Contact Time	Training Objectives
	Cultural Concepts	Specific Cultures			
					To assess both the positive and negative impact of students' attitudes on their future practices as doctors.
					To apply the principles the students have learned from the exercises to other similar situations.
					To recognize the limitations of students' knowledge and seek appropriate advice with respect to students' understanding of another person's perspective.
					To describe at least two cultures different from your own.
					To outline the current legislation that exists to prevent discrimination.
					To respect the differences that exist between different groups of people.
Douglas, 1994, U. S.	General concepts of culture, Doctor-patient interactions, Language, Specific cultural content, Access issues	Asian/Pacific Islander, Hispanic	Audio/Visual, Clinical experiences, Discussion (group), , Readings, Self study	Not Specified	To learn about the errors that can occur with use of translators.
					To teach physicians about themselves (self awareness of culture/language).
					To deliver culturally sensitive healthcare.
					To address need of minority community.
Dowell, 2001, New Zealand	General concepts of culture, Specific cultural content	Other specific culture: Maori	Culture immersion	one week full-time	To increase awareness of importance of cultural issues.
					To encourage students to adopt broad public health approaches in assessing the health needs of defined communities.
Drouin, 2003, Canada	Language	Other specific culture: Francophone Canadian	Observation and feedback, Standardized patient	15 < 2 hour sessions held over 2 years	To expose students to clinical scenarios that reflect the primary care practice of francophone physicians and to introduce them to cultural aspects of healthcare.

Evidence Table 4: Description of study characteristics for articles addressing Question 2, sorted by targeted healthcare provider(s) (continued)

Study	Categorization of Curriculum Content		Training Methods	Contact Time	Training Objectives
	Cultural Concepts	Specific Cultures			
					To give students the opportunity to learn clinical skills efficiently outside the tertiary care centers where instruction in French was rarely possible.
Farnill, 1997, Australia	Language	Other specific culture: non-English speaking	Discussion (group), Interviewing members, Small group	16 < 2-hour sessions held over 7 months	To interview people of non-English speaking backgrounds.
					To develop students' basic skills in interviewing.
					To increase student sensitivity to multicultural issues.
Godkin, 2001, U. S.	General concepts of culture, Language, Specific cultural content, Socioeconomic status (SES)	Asian/Pacific Islander, Hispanic	Culture immersion, Interviewing members, Language lessons, Lectures, Community service	30 half-day sessions over 1 year plus 6 weeks full time	To develop sensitivity through first-hand experiences when living in a new country.
					To develop abilities to speak the language of an immigrant, refugee, or undocumented population new to Massachusetts.
					To develop an understanding of the culture and health beliefs of the newcomer group and the problems that they face.
					To promote a career preference to serve underserved populations.
Godkin, 2003, U. S.	General concepts of culture, Specific cultural content	Asian/Pacific Islander, African American, Hispanic	Culture immersion	Not Specified	To improve language skills for pre-clinical students in a formal language program.

Evidence Table 4: Description of study characteristics for articles addressing Question 2, sorted by targeted healthcare provider(s) (continued)

Study	Categorization of Curriculum Content		Training Methods	Contact Time	Training Objectives
	Cultural Concepts	Specific Cultures			
Haq, 2000, U. S.	General concepts of culture, Specific cultural content	Asian/Pacific Islander, African American, Hispanic	Brainstorming, Case scenarios, Clinical experiences, Culture immersion, Discussion (group), Drill/practice exercise, Lectures, Conduction of community health activities, Role play	8-10 weeks full time	To learn about 23 vital areas of international health, including planning, sanitation, nutrition, etc.
Mao, 1988, U. S.	General concepts of culture, Doctor-patient interactions, Specific cultural content	Not Specified	Audio/Visual, Discussion (group), Role play, Small group	1 4-hour session held once only	To improve ability to provide medical care appropriate to patients ethnic and sociocultural backgrounds.
					To use LEARN (Listen, Explain, Acknowledge, Recommend, Negotiate) model as a framework for resolving physician-patient conflicts.
					To acknowledge that ethnic and sociocultural differences between a physician and a patient can influence the type of medical care given.
					To understand ethnic differences between patients and students.
Marvel, 1993, U. S.	General concepts of culture, Doctor-patient interactions	Not Specified	Audio/Visual, Case scenarios, Interviewing members, Readings, Role play, Small group	16 sessions held over 4 weeks	To understand basic family systems concepts.
					To understand how one's own cultural and family background influences the doctor-patient relationship.
					To conduct a family conference.
					To identify developmental tasks in the family life cycle.
					To identify cultural factors that affect health care.
					To recognize the family role in chemical dependency.

Evidence Table 4: Description of study characteristics for articles addressing Question 2, sorted by targeted healthcare provider(s) (continued)

Study	Categorization of Curriculum Content		Training Methods	Contact Time	Training Objectives
	Cultural Concepts	Specific Cultures			
Mazor, 2002, U. S.	Language, Specific cultural content	Hispanic	Case scenarios, Language lessons	2-hour sessions held weekly for 10 weeks	To improve understanding of Hispanic cultural beliefs.
					To improve ability in taking medical history in Spanish.
					To determine whether a course in medical Spanish for Pediatric Emergency department physicians is associated with an increase in patient satisfaction for Spanish-speaking-only families.
Nora, 1994, U. S.	Language, Specific cultural content, Access issues	Hispanic	Clinical experiences, Culture immersion, Demonstration/role, Discussion (group), Language lessons, Lectures, Presentations, Readings, Small group	30 2-hour sessions plus 8 days full time	To learn about demographic, geographic, and cultural differences between Hispanics and Anglo-Americans and implications for health care.
					To teach medical terminology and physician-patient conversation.
					To explore issues of health care in a developing Hispanic country.
					To improve ability to understand health issues and communicate them to Spanish-speaking patients.
Rubenstein, 1992, U. S.	General concepts of culture, Specific cultural content	Asian/Pacific Islander	Case scenarios, Discussion (group), Interviewing members, Lectures, Presentations, Small group	1 4-hour session held once only	To describe the effect of non-conventional health beliefs in doctor-patient relationship.

Evidence Table 4: Description of study characteristics for articles addressing Question 2, sorted by targeted healthcare provider(s) (continued)

Study	Categorization of Curriculum Content		Training Methods	Contact Time	Training Objectives
	Cultural Concepts	Specific Cultures			
					To identify resources for learning more about these beliefs.
					To recognize how pervasive such beliefs are in our society.
					To interview a person about his/her health beliefs and practices.
Sinnott, 2001, Australia	General concepts of culture, Specific cultural content	Other specific culture: Aboriginal	Lectures, Readings	1 < 2-hour session held once only	To be aware of the role of indigenous hospital liaison officers.
Tang, 2002, U. S.	Not Specified	Not Specified	Case scenarios, Lectures, Role play, Self reflection, Small group	sessions held over four years	To prepare students to negotiate sociocultural issues that will emerge in their clinical experiences.
					To increase the knowledge about sociocultural factors in medical students future patient care.
					To increase understanding of the relationships among sociocultural background, health, and medicine.
NURSE					
Alpers, 1996, U. S.	General concepts of culture, Specific cultural content	Asian/Pacific Islander, African American, Hispanic	Home visits, Not Specified	Not Specified	To improve skill specific transcultural tasks.
					To increase knowledge of specific cultural patterns.
					To increase knowledge of general transcultural concepts.
					To improve confidence and competence in providing care to minorities (African Americans, Latino-Hispanics, Southeast Asians).
Barton, 1992, U. S.	General concepts of culture, Specific cultural content	Hispanic	Clinical experiences, Culture immersion	Not Specified	To explore the extent to which student discovery learning occurs when the teaching model includes clinical experience involving transcultural health care.

Evidence Table 4: Description of study characteristics for articles addressing Question 2, sorted by targeted healthcare provider(s) (continued)

Study	Categorization of Curriculum Content		Training Methods	Contact Time	Training Objectives
	Cultural Concepts	Specific Cultures			
Berman, 1998, U. S.	General concepts of culture, Specific cultural content	Asian/Pacific Islander, African American, Hispanic	Audio/Visual, Case scenarios, Lectures, Readings, Small group	3 one-day sessions plus 1 two-day session	To identify beliefs, sources of information, and access of minority/underserved populations.
					To increase cultural sensitivity.
					To identify appropriate nursing interventions for minorities.
					To identify cancer-related needs in different minorities.
					To identify barriers to adequate cancer nursing care for minority/underserved populations.
Blackford, 2002, Australia	General concepts of culture, Specific cultural content, Gender roles and sexuality	Other specific culture: non-English speaking	Discussion (group), Interviewing members	< 2-hour sessions held every two weeks for 7 months	To examine health professionals own Anglo-Australian culture and its impact on other ethnic communities.
Bond, 1994, U. S.	General concepts of culture, Language, Specific cultural content	Hispanic	Culture immersion, Language lessons, Literature, Presentations, Readings, Self reflection, Small group	Not Specified	To allow the student to compare observations to what is reported in the literature.
					To gain exposure to the Spanish language.
					To explore Mexican culture.
					To increase knowledge of Mexican health care beliefs.
					To acknowledge the challenges presented in planning and delivering culturally sensitive and competent care within health care work settings.
					To experience the Mexican culture by beginning to learn the language, living with people, sharing food and customs, and ultimately gaining insight into behavior.

Evidence Table 4: Description of study characteristics for articles addressing Question 2, sorted by targeted healthcare provider(s) (continued)

Study	Categorization of Curriculum Content		Training Methods	Contact Time	Training Objectives
	Cultural Concepts	Specific Cultures			
Campinha-Bacote, 1996, U. S.	General concepts of culture	Not Specified	Audio/Visual, Drill/practice exercise, Lectures, Experimental exercises	4 < 2-hour sessions	To increase cultural awareness and knowledge of nurses.
					To improve the cultural skills of nurses.
Felder, 1990, U. S.	General concepts of culture, Doctor-patient interactions, Specific cultural content	African American	Not Specified	Not Specified	To test for any significant difference between baccalaureate and associate degree nursing students' cultural knowledge and attitudes towards black American clients.
					To test for any significant difference of cultural knowledge of black Americans among baccalaureate and associate degree seniors and freshmen.
					To test for any significant difference in the attitudes of baccalaureate and associate degree seniors and freshmen where programs have provided similar training experiences.
Flavin, 1997, U. S.	Doctor-patient interactions, Specific cultural content	Asian/Pacific Islander	Audio/Visual, Case scenarios, Discussion (group), Presentations, Role play	< 2-hour sessions held weekly for 3 weeks	To provide culturally relevant quality care to clients from cultures different from nurses' own.
Frank-Stromborg, 1987, U. S.	Specific cultural content	African American	Demonstration/role, Discussion (group), Lectures, , Role play	1 day session held once only	To identify cancer risks at the individual and community level.
					To describe nursing role in prevention/detection of cancers in black Americans.
					To integrate what was learned into clinical practice.
					To explore nurses' own feelings toward cancer.
					To palpate simulated prostate and gynecological malignancies.
					To increase cancer prevention/detection activities among Black Americans.

Evidence Table 4: Description of study characteristics for articles addressing Question 2, sorted by targeted healthcare provider(s) (continued)

Study	Categorization of Curriculum Content		Training Methods	Contact Time	Training Objectives
	Cultural Concepts	Specific Cultures			
Frisch, 1990, U. S.	General concepts of culture, Specific cultural content	Hispanic	Culture immersion	6 weeks full-time	To assess the change in students' thinking maturity over time.
					To assess the level of cognition of undergraduate students.
					To examine whether exposure to diversity challenged established views and brought measurable cognitive change.
Hadwiger, 1999, U. S.	Doctor-patient interactions, Language, Specific cultural content	African American, American Indian/Alaska Native, Hispanic, Other specific culture	Case scenarios	4 sessions	To learn about the cultural background of another group, particularly healthcare practices, communication styles, and specific health-problems.
					To have the nursing student reflect on how his/her beliefs and assumptions differs from the patient.
					To negotiate a plan of care without resorting to ethnocentric attitudes or stereotypes.
Haloburdo, 1998, U. S.	General concepts of culture, Specific cultural content	Hispanic	Clinical experiences, Culture immersion, Lectures	Not Specified	Not specified.
Inglis, 2000, Asia; Australia	Doctor-patient interactions, Specific cultural content	Asian/Pacific Islander	Lectures, Visits to local hospitals and health centers, Field trip	3 weeks full time	To improve knowledge about the Nepalese people and their health system.
					To improve behaviors directed towards the Nepalese people.
					To improve students' attitudes and beliefs about the Nepalese people.
Jeffreys, 1999, U. S.	General concepts of culture, Specific cultural content	Not Specified	Clinical experiences, Discussion (group), Lectures, Written assignments, Readings	Not Specified	To systematically conduct basic cultural assessment.

Evidence Table 4: Description of study characteristics for articles addressing Question 2, sorted by targeted healthcare provider(s) (continued)

Study	Categorization of Curriculum Content		Training Methods	Contact Time	Training Objectives
	Cultural Concepts	Specific Cultures			
					To discover importance of culturally competent care.
					To identify similarities and differences among individuals from cultural groups.
					To distinguished between varying levels of acculturation.
Jeffreys, 2002, U. S.	General concepts of culture, Doctor-patient interactions, Access issues	Not Specified	Audio/Visual, Discussion (group), Lectures, Readings, Role play, Small group	Not Specified	To identify strategies to integrate cultural health assessment.
					To discuss impact of healthcare policy on diverse populations.
					To identify ethical, legal, and moral dimensions of interventions from transcultural perspective.
					To identify role of provider in culturally competent care.
					To discuss application of transcultural care.
					To discuss theories of culture.
					To discuss future directions and challenge of transcultural care.
					To discuss issues in diversity and healthcare in relation to culturally competent clinical practice.
					To critically appraise selected theories/research.
Lasch, 2000, U. S.	Specific cultural content	Not Specified	Clinical experiences, Discussion (group), Lectures, Presentations	1 1-day sessions held once only	To improve cancer pain knowledge hands-on experience.
					To improve attitudes relating to cancer pain among nurses of patients from 11 different ethnic groups.
					To improve knowledge about cancer pain among nurses of patients from 11 different ethnic

Evidence Table 4: Description of study characteristics for articles addressing Question 2, sorted by targeted healthcare provider(s) (continued)

Study	Categorization of Curriculum Content		Training Methods	Contact Time	Training Objectives
	Cultural Concepts	Specific Cultures			
					groups.
					To increase durability of attitudes related to cancer pain via hands-on-experience.
Lindquist, 1984, U. K.	Specific cultural content	Not Specified	Culture immersion, Discussion (group), Lectures	sessions held daily for 4 weeks	To learn about another culture and health care delivery system.
Lockhart, 1997, U. S.	General concepts of culture, Access issues	African American, American Indian/Alaska Native, Hispanic, Other specific culture	Drill/practice exercise, Lectures, Simulations; Field experience; Self assessment	Not Specified	To explore ways to promote knowledge development of and the profession's involvement in transcultural nursing.
					To investigate cultural diversity as it relates to the nursing program.
					To examine select healthcare delivery and acceptance issues related to an individual's background.
					To examine specific concepts and principles in transcultural health care system.
					To explore the evaluation of transcultural nursing as a specialty area.
Napholz, 1999, U. S.	General concepts of culture, Language, Specific cultural content	African American	Clinical experiences, Presentations, Small group	3 2-hour sessions	To increase cultural sensitivity.
					To apply change strategies.
					To formulate culturally relevant care plans.
					To discuss openly racial and ethnic differences.
					To adapt to clients' interactive style and language.

Evidence Table 4: Description of study characteristics for articles addressing Question 2, sorted by targeted healthcare provider(s) (continued)

Study	Categorization of Curriculum Content		Training Methods	Contact Time	Training Objectives
	Cultural Concepts	Specific Cultures			
Oneha, 1998, U. S.	General concepts of culture	Asian/Pacific Islander	Case scenarios, Clinical experiences, Discussion (group), Problem based, Small group	sessions held weekly	To identify the role of nurses in multi professional team.
					To solve culturally sensitive group problems.
					To adjust activities to benefit the community.
					To identify the impact of culture on nursing care.
					To accept the controls, constraints, and ambiguity in community based practice.
Rolls, 1997, Australia	General concepts of culture	Asian/Pacific Islander	Culture immersion, Discussion (group), Readings	4 2-hour sessions plus 4 weeks full time	To develop an understanding of the forces influencing international health care services.
					To create awareness and change attitudes towards different cultures.
Rooda, 1993, U. S.	General concepts of culture, Specific cultural content	Asian/Pacific Islander, African American, Hispanic	Discussion (group), Drill/practice exercise, Lectures, Reflection, Small group	1 1-day session held once only	To learn how the culture of various ethnic groups affects their healthcare practices.
					To develop a sequence of learning to be used for increasing cultural awareness.
Ryan, 2000, U. S.	General concepts of culture	Not Specified	Culture immersion	Not Specified	No stated objectives.
Ryan, 2002, U. S.	General concepts of culture, Language, Specific cultural content	Asian/Pacific Islander, African American, Other specific culture	Case scenarios, Discussion (group), Web page	Not Specified	To learn new ways of communicating and facilitating dialogue about culture.
					To gain insight into both one's own and others' cultural beliefs.
					To gain insight into social orientation.
					To identify health behaviors unique to a culture.
					To increase knowledge about health practices in another country.

Evidence Table 4: Description of study characteristics for articles addressing Question 2, sorted by targeted healthcare provider(s) (continued)

Study	Categorization of Curriculum Content		Training Methods	Contact Time	Training Objectives
	Cultural Concepts	Specific Cultures			
					To discuss nursing interventions for case study.
					To increase awareness of culture in healthcare and the environmental influences in cultural heritage.
Scisney-Matlock, 2000, U. S.	General concepts of culture	Not Specified	Lectures, Web pages; Written and verbal presentations, Small group	Not Specified	To increase exposure to information and activities devoted to understanding other racial/ethnic groups.
					To increase knowledge of diversity.
Smith, 2001, U. S.	General concepts of culture, Specific cultural content	Not Specified	Case scenarios, Demonstration/role, Lectures, Simulations	1 session held once only	To improve confidence in performing specific transcultural skills.
					To improve confidence in knowledge of cultural patterns within different groups.
					To improve knowledge of cultural concepts (culturally specific health and illness concerns, values, and family orientation issues).
St Clair, 1999, U. S.	General concepts of culture, Doctor-patient interactions	African American	Culture immersion	2-3 weeks full time	To change nursing students' self-efficacy and cultural perceptions.
					To determine if there are changes in the nurse-patient relationship as a result of these cultural immersions.
					To improve cultural sensitivity.
					To change nursing students' ethnocentrism.

Evidence Table 4: Description of study characteristics for articles addressing Question 2, sorted by targeted healthcare provider(s) (continued)

Study	Categorization of Curriculum Content		Training Methods	Contact Time	Training Objectives
	Cultural Concepts	Specific Cultures			
Underwood, 1999, U. S.	Specific cultural content	African American	Case scenarios, Demonstration/role, Lectures, Outreach with national prevention organization	Not Specified	To identify common attitudes of African Americans towards cancer.
					To describe nurses' role in cancer prevention and early detection.
					To describe procedures for performing screening examinations for 5 common cancers.
					To conduct NCI breast self exam or smoking cessation program.
					To identify factors which facilitate and impede cancer prevention in the African American community.
					To identify individuals at increased risk for 5 common cancers.
					To design a community-based cancer prevention program including: development, implementation, and evaluation.
Underwood, 2002, U. S.	Specific cultural content	African American	Lectures, Presentations, Role play, Small group	Not Specified	To discuss the nurse education role in prevention and early detection and strategies to enhance understanding of burden of cancer experienced by African Americans.
					To identify etiological factors associated with 5 common cancers among African Americans.
					To describe signs and symptoms associated with 5 common cancers in the African American population.
					To describe incidence mortality and survival of breast, cervical, prostrate, colorectal, and lung cancer in African Americans.
					To teach programs related to breast health, smoking cessation, and smoking prevention.

Evidence Table 4: Description of study characteristics for articles addressing Question 2, sorted by targeted healthcare provider(s) (continued)

Study	Categorization of Curriculum Content		Training Methods	Contact Time	Training Objectives
	Cultural Concepts	Specific Cultures			
					To discuss recommended cancer screening procedures and diagnostic examination for 5 common cancers in African Americans.
					To provide nurse educators with information and resources on the prevention and control of cancer in African Americans.
					To propose a strategy for educating students to promote health screening and early detection for African Americans in the community or practice setting.
					To describe procedures for accessing state-of-the-art cancer information on the Internet and World-Wide Web.
					To identify common attitudes of African Americans towards cancer, cancer prevention, early detection, and cancer cure.
					To identify established organizations with cancer control as a major objective.
					To identify factors which facilitate or impede cancer prevention and early detection.
Warner, 2002, U. S.	General concepts of culture, Specific cultural content	American Indian/Alaska Native	Culture immersion	Not Specified	To "broaden horizons".

Evidence Table 4: Description of study characteristics for articles addressing Question 2, sorted by targeted healthcare provider(s) (continued)

Study	Categorization of Curriculum Content		Training Methods	Contact Time	Training Objectives
	Cultural Concepts	Specific Cultures			
Wendler, 2002, U. S.	General concepts of culture, Specific cultural content	African American, American Indian/Alaska Native, Hispanic, Other specific culture	Interviewing members, internet learning, cultural enrichment activities, Small group	Not Specified	To evaluate the impact of culture on health, illness, and wellness.
					To analyze the theoretical and conceptual approaches underlying cultural congruency/competency.
					To evaluate health patterns of different ethnic groups: African-American, Hispanic, Asian, and Native American.
					To synthesize the scholarly literature to facilitate healthcare planning, implementation, and/or evaluations that are culturally competent.
					To examine the interrelationships among a pluralistic society, the culturally diverse group within the society, and the health/illness status and beliefs of the group members, with a specific focus on the peoples of the African-American, Hispanic, Asian, and Native American cultures.
Williamson, 1996, U. S.	General concepts of culture	Not Specified	Audio/Visual, Clinical experiences, Culture immersion, Discussion (group), Interviewing members, Presentations, Readings	sessions held weekly	To increase the students' knowledge of ethnic groups.
					To increase students' ability to care for ethnic groups.

Evidence Table 4: Description of study characteristics for articles addressing Question 2, sorted by targeted healthcare provider(s) (continued)

Study	Categorization of Curriculum Content		Training Methods	Contact Time	Training Objectives
	Cultural Concepts	Specific Cultures			
OTHER PROVIDERS/ MIXED GROUPS					
Nurse, Physician, Receptionists, Volunteers, Business office staff					
Gallagher Thompson, 2000, U. S.	Doctor-patient interactions, Specific cultural content, Access issues	Hispanic	Audio/Visual, Discussion (group), Lectures,	1 session held once only	To increase knowledge about Hispanic Alzheimer's patients and their families.
					To increase general knowledge about Alzheimer's disease.
					To increase knowledge of Hispanic beliefs about dementia.
					To increase referrals of Hispanic Alzheimer's patients and their families to the appropriate specialized services about Alzheimer's disease.
Nurse, Physician, Social workers, Nurse's aides, Receptionists, Clerks					
Gany, 1996, U. S.	Language, Specific cultural content	Asian/Pacific Islander, African American, Hispanic	Discussion (group), Personal experiences, Role play	4 sessions	To learn about expectations and behaviors of immigrant groups concerning pregnancy, birth, well-baby care, contraceptive use, and folk remedies.
					To learn about immigrant epidemiology, management of disease and other health issues, the impact of immigration, and use of folk medicine.
					To discern between health beliefs that are beneficial or neutral to the child and well-being of the mother and those that are harmful.
					To bridge differences between the Western biomedical system and alternative healthcare systems.
					To learn about the impact of migration in family dynamics and interaction, and the increased possibility of family violence.

Evidence Table 4: Description of study characteristics for articles addressing Question 2, sorted by targeted healthcare provider(s) (continued)

Study	Categorization of Curriculum Content		Training Methods	Contact Time	Training Objectives
	Cultural Concepts	Specific Cultures			
					To become aware of own interview style and learn effective communication strategies in the bilingual medical interview.
Nurse, Pharmacist					
Chevannes, 2002, U. K.	General concepts of culture	Not Specified	Audio/Visual, Case scenarios, Clinical experiences, Discussion (group), Lectures, Presentations	Not Specified	To develop skills (i.e. history taking) to meet the health needs of ethnic minorities.
					To change practice as a result of training.
					To improve culture knowledge of ethnic minority patients and their health care needs.
Nurse, Pharmacist, Physician, Occupational Therapy, Physical Therapy, Health administration					
Erkel, 1995, U. S.	Specific cultural content	African American	Audio/Visual, Case scenarios, Clinical experiences, Culture immersion, Literature, Presentations, Readings, Role play	5 weeks full time	To develop culturally sensitive health professionals able to function within interdisciplinary team in rural setting.
Nurse, Pharmacist, Physician, Any staff with direct patient contact					
Way, 2002, U. S.	General concepts of culture	Not Specified	Not Specified	1 sessions held once only	To enhance recognition and understanding of other cultures.

Evidence Table 4: Description of study characteristics for articles addressing Question 2, sorted by targeted healthcare provider(s) (continued)

Study	Categorization of Curriculum Content		Training Methods	Contact Time	Training Objectives
	Cultural Concepts	Specific Cultures			
Community health worker, Undergraduate student					
Bengiamin, 1999, U. S.	General concepts of culture, Specific cultural content, Access issues	Asian/Pacific Islander, American Indian/Alaska Native, Hispanic, Other specific culture	Audio/Visual, Discussion (group), Literature, Presentations	Not Specified	To explore one's own cultural background.
					To increase knowledge of student perception of transcultural nursing.
					To facilitate cultural awareness from a holistic care perspective.
					To develop a sense of cultural awareness.
					To cultivate skills that allow students to understand and analyze cultural differences.
Community health worker, Church nurse guild members and other interested community organizations					
Briscoe, 1999, U. S.	Access issues	African American	Case scenarios, Discussion (group), Lectures, Readings, Role play	1 2-hour session held once only	To instruct organization members on strategies for maximizing medical encounters.
					To identify strategies to overcome practical obstacles to quality of care, utilization (e.g., manage child care, transportation).
					To develop a plan for overcoming attitudinal obstacles to health care utilization, especially diabetes screening.
					To describe and implement a plan for promoting sources of high quality diabetes care within the organization.
					To implement a plan for identifying sources of high quality diabetes care in their communities.

Evidence Table 4: Description of study characteristics for articles addressing Question 2, sorted by targeted healthcare provider(s) (continued)

Study	Categorization of Curriculum Content		Training Methods	Contact Time	Training Objectives
	Cultural Concepts	Specific Cultures			
Social workers					
Browne, 2002, U. S.	General concepts of culture	Not Specified	Case scenarios, Clinical experiences, Drill/practice exercise, Lectures	Not Specified	To incorporate knowledge of diverse cultural, norms, issues, and values in the assessments of and interventions with culturally diverse age groups.
					To provide a greater emphasis on interdisciplinary team work and cultural competence.
					To increase knowledge of diverse cultural norms, issues, and values.
					To increase awareness of diverse cultural norms, issues, and values.
Psychologists					
Hansen, 2002, U. S.	General concepts of culture, Doctor-patient interactions, Language, Specific cultural content	Not Specified	Discussion (group), Writing cultural autobiography, Readings, Self study	2 1-day sessions	To develop cultural awareness.
					To self assess one's multicultural competence.
					To establish rapport and convey empathy in culturally sensitive manner.
					To explain results in a culturally sensitive contextual manner.
					To modify assessment tools and conclusions appropriately for use with identified group.
					To know how to assess variables of special relevance to identified groups.
					To understand culture-specific assessment procedures and tools.
					To ascertain effects of therapist-client language differences.

Evidence Table 4: Description of study characteristics for articles addressing Question 2, sorted by targeted healthcare provider(s) (continued)

Study	Categorization of Curriculum Content		Training Methods	Contact Time	Training Objectives
	Cultural Concepts	Specific Cultures			
Tomlinson-Clarke, 2000, U. S.	General concepts of culture, Racism, Specific cultural content	Other specific culture: Aboriginal	Discussion (group), Use of "critical incidents" to develop skills, Readings	15 sessions held weekly	To understand people within a socio-cultural context; addressing race, oppression, and ethnicity. Familiarity with current research in multicultural field.
					To discuss culture, identity, appreciation of one's own culture and biases.
					To use critical incidents to develop multicultural communication skills.
Mental health professionals					
Stumphauzer, 1983, U. S.	General concepts of culture, Access issues	Asian/Pacific Islander	Case scenarios, Discussion (group), Readings	2-hour sessions held weekly for 10 weeks	No stated objectives.
Occupational therapy					
Velde, 2001, U. S.	Specific cultural content	African American	Clinical experiences, Culture immersion, Interviewing members, Literature, Presentations, Self reflection, Small group	20-28 hours total	To know about cultural differences between Tillery community members and students/faculty.
					To note personal awareness of cultural differences between Tillery community members and students.
					To study effects of cultural differences on behavior of Tillery community members and students/faculty.

Evidence Table 4: Description of study characteristics for articles addressing Question 2, sorted by targeted healthcare provider(s) (continued)

Study	Categorization of Curriculum Content		Training Methods	Contact Time	Training Objectives
	Cultural Concepts	Specific Cultures			
Counselors					
Wade, 1991, U. S.	Specific cultural content	African American	Discussion (group), Role play	4 hours total	To increase knowledge necessary to understand and to respond to attitudes that low-income black women bring to counseling.
					To increase cultural sensitivity.
					To increase self-awareness necessary to understand and to respond to attitudes that low-income black women bring to counseling.
					To increase skills necessary to understand and to respond to attitudes that low-income black women bring to counseling.

Evidence Table 5: Description of study quality for articles addressing Question 2, sorted by targeted healthcare provider(s)

Study	Study Design	Summary of Quality Assessment [a]					Selected Aspects of Quality					
		Rep	Bias	Inter	Out	Analy	Comparison Group?	Complete Description?	Blinding?	Objective Strategy?	Numbers/ Reasons for Non-inclusion?	Complete Statistical Analysis?
PHYSICIAN												
Beagan, 2003	Post-test only with external control	◒	◒	○	○	○	Y	N	N	N	N	N
Copeman, 1982	Pre-/post-test	◒	○	◒	◒	◒	N	N	N/A	Y	N	N
Crandall, 2003	Pre-/post-test	●	○	◒	◒	◒	N	N	N/A	Y	Y	Y
Culhane-Pera, 1997	Pre-/post-test	◒	○	●	◒	○	N	Y	N/A	N	N	N
Dogra, 2001	Pre-/post-test	◒	○	●	◒	◒	N	Y	N/A	Y	Y	N
Douglas, 1994	Post-test only	◒	○	◒	○	○	N	N	N/A	N	N	N
Dowell, 2001	Post-test only	◒	○	●	○	○	N	Y	N/A	N	N	N
Drouin, 2003	Post-test only	◒	○	●	○	○	N	Y	N	N	N	N
Farnill, 1997	Pre-/post-test	●	○	●	◒	◒	N	Y	N/A	Y	N	Y
Godkin, 2001	Concurrent controlled trial (CCT)	●	○	●	◒	○	Y	Y	N	Y	Y	N
Godkin, 2003	Concurrent controlled trial (CCT)	●	◒	◒	◒	◒	Y	N	N	N	N	Y
Haq, 2002	Pre-/post-test	◒	○	◒	◒	○	N	Y	N/A	N	N	N
Mao, 1988	Pre-/post-test	○	○	●	◒	○	N	Y	N	N	N	N
Marvel, 1993	Post-test only	○	○	◒	○	○	N	N	N/A	N	N	N

Evidence Table 5: Description of study quality for articles addressing Question 2, sorted by targeted healthcare provider(s) (continued)

Study	Study Design	Summary of Quality Assessment [a]					Selected Aspects of Quality					
		Rep	Bias	Inter	Out	Analy	Comparison Group?	Complete Description?	Blinding?	Objective Strategy?	Numbers/ Reasons for Non-inclusion?	Complete Statistical Analysis?
Mazor, 2002	Pre-/post-test	◒	○	●	◒	○	N	Y	N/A	Y	N	Y
Nora, 1994	Pre-/post-test with external control	○	○	◒	◒	○	N	Y	N	Y	Y	N
Rubenstein, 1992	Pre-/post-test	◒	○	◒	◒	○	N	N	N/A	Y	N	N
Sinnott, 2001	Post-test only	◒	○	◒	○	○	N	N	N	N	N	N
Tang, 2002	Pre-/post-test	●	○	●	◒	◒	N	Y	N/A	N	N	Y
NURSE												
Alpers, 1996	Concurrent controlled trial (CCT)	○	○	◒	◒	◒	Y	N	N	Y	N	N
Barton, 1992	Post-test only	◒	●	●	◒	◒	N	N	N/A	N	Y	N/A
Berman, 1998	Post-test only	○	○	◒	◒	○	N	Y	N/A	N	N	N
Blackford, 2002	Qualitative	○	○	◒	○	○	N	N	N/A	N	N	N
Bond, 1994	Post-test only	◒	○	◒	○	○	N	N	N/A	N	N	N
Campinha-Bacote, 1996	Post-test only	◒	○	●	○	○	N	N	N/A	N	N	N
Felder, 1990	Post-test only	●	○	◒	◒	◒	N	N	N	Y	N	Y
Flavin, 1997	Pre-/post-test	◒	◒	◒	◒	◒	N	N	N/A	Y	Y	N
Frank-Stromborg, 1987	Pre-/post-test	○	○	●	◒	○	N	Y	N/A	Y	Y	Y

Evidence Table 5: Description of study quality for articles addressing Question 2, sorted by targeted healthcare provider(s) (continued)

Study	Study Design	Summary of Quality Assessment [a]					Selected Aspects of Quality					
		Rep	Bias	Inter	Out	Analy	Comparison Group?	Complete Description?	Blinding?	Objective Strategy?	Numbers/ Reasons for Non-inclusion?	Complete Statistical Analysis?
Frisch, 1990	Concurrent controlled trial (CCT)	●	◒	○	◒	○	Y	N	Y	Y	N	N
Hadwiger, 1999	Post-test only	○	○	○	◒	○	N	Y	N/A	N	N	N
Haloburdo, 1998	Qualitative	◒	○	◒	○	○	N	N	N/A	N	Y	N/A
Inglis, 2000	pre-/post-test with external control	○	○	◒	○	○	N	Y	Y	Y	N	N
Jeffreys, 1999	Pre-/post-test	◒	●	◒	◒	○	N	N	N/A	Y	N	N
Jeffreys, 2002	Post-test only	◒	○	◒	◒	○	N	N	N/A	N	N	N/A
Lasch, 2000	Randomized controlled trial (RCT)	○	○	●	○	○	Y	Y	N	Y	N	N
Lindquist, 1984	Post-test only	○	○	◒	○	○	N	N	N	N	N	N
Lockhart, 1997	Post-test only	○	○	◒	○	○	N	N	N/A	N	N	N
Napholz, 1999	Concurrent controlled trial (CCT)	●	◒	◒	●	◒	Y	N	N	Y	N	Y
Oneha, 1998	Post-test only	◒	○	○	○	○	N	N	N/A	N	N	N
Rolls, 1997	Post-test only	○	○	◒	○	○	N	N	N/A	N	Y	N
Rooda, 1993	Post-test only	○	○	○	○	○	N	N	N/A	N	N	N/A
Ryan, 2002	Post-test only	◒	○	◒	○	○	N	Y	N/A	N	N	N
Ryan, 2000	Qualitative	◒	○	○	○	○	N	N	N/A	N	N	N/A

Evidence Table 5: Description of study quality for articles addressing Question 2, sorted by targeted healthcare provider(s) (continued)

Study	Study Design	Summary of Quality Assessment [a]					Selected Aspects of Quality					
		Rep	Bias	Inter	Out	Analy	Comparison Group?	Complete Description?	Blinding?	Objective Strategy?	Numbers/ Reasons for Non-inclusion?	Complete Statistical Analysis?
Scisney-Matlock, 2000	Concurrent controlled trial (CCT)	●	●	◒	◒	●	Y	Y	N	Y	N	Y
Smith, 2001	Concurrent controlled trial (CCT)	○	○	●	○	○	Y	N	N	Y	Y	Y
St Clair, 1999	Concurrent controlled trial (CCT)	◒	◒	◒	●	◒	Y	N	N	Y	N	N
Underwood, 1999	Pre-/post-test	○	○	◒	◒	○	N	Y	N/A	N	N	N
Underwood, 2002	Post-test only	○	○	◒	◒	○	N	N	N/A	N	Y	N
Warner, 2002	Post-test only	○	○	◒	○	○	N	N	N/A	N	N	N
Wendler, 2002	Post-test only	●	○	●	◒	◒	N	N	N/A	N	N	N
Williamson, 1996	Pre-/post-test	○	○	◒	◒	◒	N	N	N/A	Y	N	Y
OTHER PROVIDERS/ MIXED GROUPS												
Nurse, Physician, Receptionists, Volunteers, Business office staff												
Gallagher Thompson, 2000	Pre-/post-test	◒	○	◒	◒	○	N	N	N/A	Y	N	N
Nurse, Physician, Social workers, Nurse's aides, Receptionists, Clerks												
Gany, 1996	Pre-/post-test	○	○	◒	◒	○	N	N	N/A	Y	N	Y

Evidence Table 5: Description of study quality for articles addressing Question 2, sorted by targeted healthcare provider(s) (continued)

Study	Study Design	Summary of Quality Assessment [a]					Selected Aspects of Quality					
		Rep	Bias	Inter	Out	Analy	Comparison Group?	Complete Description?	Blinding?	Objective Strategy?	Numbers/ Reasons for Non-inclusion?	Complete Statistical Analysis?
Nurse, Pharmacist												
Chevannes, 2002	Post-test only	○	○	◒	○	○	N	N	N/A	N	Y	N/A
Nurse, Pharmacist, Occupational therapy, Physical therapy, Health administration												
Erkel, 1995	Pre-/post-test	○	○	◒	◒	○	N	N	N/A	N	N	N
Nurse, Pharmacist, Physician, Any staff with direct patient contact												
Way, 2002	Pre-/post-test	○	○	○	◒	○	N	N	N/A	Y	N	Y
Community health worker, Undergraduate students												
Bengiamin, 1999	Qualitative	◒	○	◒	◒	○	N	N	N/A	N	Y	N/A
Community health worker, Church nurse guild members and other interested community organizations												
Briscoe, 1999	Post-test only	○	○	◒	○	○	N	N	N/A	N	N	N
Social workers												
Browne, 2002	Post-test only	○	○	◒	○	○	N	N	N/A	N	N	N
Psychologists												
Hansen, 2002	Post-test only with external control	○	○	●	◒	○	N	Y	N	Y	N	Y
Tomlinson-Clarke, 2000	Post-test only	○	○	◒	○	○	N	N	N/A	N	N	N

Evidence Table 5: Description of study quality for articles addressing Question 2, sorted by targeted healthcare provider(s) (continued)

Study	Study Design	Summary of Quality Assessment [a]					Selected Aspects of Quality					
		Rep	Bias	Inter	Out	Analy	Comparison Group?	Complete Description?	Blinding?	Objective Strategy?	Numbers/ Reasons for Non-inclusion?	Complete Statistical Analysis?
Mental health professionals												
Stumphauzer, 1983	Pre-/post-test	○	○	◒	◒	○	N	Y	N/A	Y	N	N
Occupational therapy												
Velde, 2001	Qualitative	○	○	◒	○	○	N	N	N/A	N	N	N
Counselors												
Wade, 1991	Randomized controlled trial (RCT)	●	●	◒	●	◒	Y	N	Y	Y	Y	Y

[a] assessments of methodological strengths and weaknesses in 5 domains, as categorized by the following symbols:
● = quality score of 80% or above
◒ = quality score of 50 to 79%
○ = quality score of less than 50%
Domains:
Rep = representativeness of targeted healthcare providers and/or patients
Bias = potential for bias and confounding
Inter = description of interventions
Out = assessment of outcomes
Analy = analytic approach

Evidence Table 6: Results from articles addressing Question 2, sorted by targeted healthcare providers(s)

Study	Evaluation Methods	Outcomes
PHYSICIAN		
Beagan, 2003	Individuals interviews, questionnaires	There were no differences in the percent of students who thought various characteristics of patients (for example appearance, English ability, social class, race, gender, culture) affected their treatments.
		There were no differences in the percent of students who thought physicians' social and cultural characteristics affected their medical practice.
		There were no differences in the percent of students who thought their own social and cultural factors affected their medical school experience.
Copeman, 1989	Self-assessment forms, Written exam	A 2-item test of knowledge showed significant improvement on one item measuring knowledge of cardiovascular disease but no improvement on the item measuring mental illness among Aboriginals.
		After the intervention, only 20% felt "quite competent" to interview a non English speaking patient through an interpreter and 76% thought they could "probably manage".
		After the curriculum, medical students were less likely to agree, 1) that migrants take away jobs from other Australians ($p<0.01$) and 2) that restrictions should be placed on the Aboriginal to protect him from his own lack of responsibility ($p<0.05$) and medical students were significantly more likely to agree 1) that the cause of Aboriginal poor health is disposition from their land ($p<0.01$) and 2) that in general Aborigines are pretty much all alike ($p<0.05$).
Crandall, 2003	Written exam, The multicultural assessment questionnaire	Statistically significant improvement of the 4 items of the skills sub-scale occurred after the course ($p=0.000$).
		Statistically significant improvement on the 6 items of the knowledge sub-scale occurred after the course ($p=0.000$).
		Statistically significant improvement of the 6 items of the attitudes sub-scale occurred after the course ($p=0.000$).
Culhane-Pera, 1997	Group interviews, Observer questionnaire, Participant ratings, Self-assessment forms	Average scores on a 4-item attitudinal self-assessment improved from 3.93 to 4.1, though this change was not statistically significant.
		Average scores on a 6-item self-assessment of skills (related to incorporating cultural issues into clinical care) improved from 3.33 to 3.96 ($p=0.000$).
		Residents self-assessments of their level of cultural competence significantly increased between initial and final evaluations.
		Although faculty's initial assessment of resident's level of cultural competence did not correlate well with residents' own assessment $r=0.092$), final competence level assessment did $r=0.507$, $p<0.05$).

Evidence Table 6: Results from articles addressing Question 2, sorted by targeted healthcare providers(s) (continued)

Study	Evaluation Methods	Outcomes
		Average scores on a 6-item knowledge self-assessment of general cultural issues improved from 2.87 to 3.47 (p=0.000).
		Participants ranked the entire curriculum of 4.33/5 for importance and 4.26/5 for quality.
Dogra, 2001	Self-assessment forms, Written exam	There was no statistical difference in responses to case scenarios before and following training.
		After the intervention, students had significantly different responses on 8 out of 25 attitudinal items about cultural issues, (p<0.05).
Douglas, 1994	Patient rating, Self-assessment forms	Participants in the curriculum developed a keener appreciation of their own culture and that of their patients.
		In a follow-up survey of patients, the majority felt that evaluation in the ethnogeriatric clinic was helpful and that they had benefitted from the assessment approach.
Dowell, 2001	Participant ratings, Written exam	Students were able to successfully identify the health needs of a population.
		Forming an attachment with Maori people resulted in students finding they actually cared about them.
		Students rated the course highly.
Drouin, 2003	Participant ratings	Students rated the communication encounters positively in terms of quality and relevance of the scenarios, realism of role-playing, usefulness of feedback by patient and supervising clinician, and perception concerning acquisition of new communication skills.
Farnill, 1997	Patient rating, Self-assessment forms, Video/Audiotape	Students reported significantly more competence on all self-assessment dimensions (p<0.001) related to interviewing patients of non-English speaking patients.
		Community volunteers reported positive experiences being interviewed by the students.
		Blinded psychologist rating of video showed students to be significantly more competent in interviewing a non-English-speaking patient in the post-intervention video over pre-intervention video (p<0.01).
Godkin, 2001	Self-assessment forms, Written exam	Students in the intervention group showed significant improvements in self-assessed knowledge of cultural beliefs, practices, and health needs on 8 out of 9 items.
		Students in the intervention group showed significant improvements on 7 out of 20 cultural competence items, and had significantly better cultural competence attitudes than students who did not participate in the intervention.
Godkin, 2003	Self-assessment forms	Compared to students who did not elect to travel internationally, students who traveled were significantly more interested in an international component in career, interested in working with underserved, recognizing need to know another language and recognizing need to know a patient's financial constraints.

Evidence Table 6: Results from articles addressing Question 2, sorted by targeted healthcare providers(s) (continued)

Study	Evaluation Methods	Outcomes
		After traveling to another country, preclinical medical students were more likely (than before they had traveled) to report (on a scale from 1 to 5) that they had an interest in an international component to their career (4.37 compared to 4.06, p<0.001), that they had an interest in an international component to their career (3.97 compared to 3.67, p<0.01), that there is a need to understand cultural differences (4.43 compared to 4.16, p<0.01), that there is a need to know another language (4.51 compared to 4.15, p<0.001), and that there was a need to be an advocate for the whole community (4.14 compared to 3.91, P=0.03).
		After traveling to another country, medical students in their clinical years were more likely (than before they had traveled) to report (on a scale from 1 to 5) that there was a need to understand cultural differences (4.51 compared to 4.23, p<0.001), that they were enthusiastic about being a physician (4.17 compared to 3.86, p+0.03), ant that they had a sense of idealism in the role of physician (3.65 compared to 3.16, p<0.001), but were less likely to report a need to work collaboratively with other professionals (3.93 compared to 4.19, p=0.02) and that they had awareness of their future role as physicians (4.14 compared to 4.35, p=0.04).
Haq, 2000	Essays, Participant ratings, Self-assessment forms, Open-ended questions	96% would recommend international health experiences to other students.
		Participants experienced significant positive changes in attitude towards communication and community health issues ($p \leq 0.03$) between the pre and post-test.
		83% of participants said the experiences changed how they would practice medicine.
		Participants gained significant positive improvements on each of 10 self-assessed clinical skills between the pre and post-test (p=0.001).
Mao, 1988	Participant ratings	In 1986, 94% approved the use of student discussion leaders, 85% enjoyed the videotapes, and 49% found the role playing exercises helpful.
		In 1986 and 1987, 70% of students found that the workshop achieved its objectives and 10% wanted more specific cultural information.
		In 1986 and 1987 a few students commented that the workshop should explore racial and gender issues in more depth.
		1985 showed some "significant" improvement in making treatment choices in three case studies (paired t-tests).
		There was significant improvement on 3 of 9 attitudes measured.
Marvel, 1993	Participant ratings	The curriculum received an average score of 7.1 out of 10 (range: 5.4 - 8.0) on usefulness of rotation objectives to current practice.
		All respondents recommended to continue the rotation in the curriculum.

Evidence Table 6: Results from articles addressing Question 2, sorted by targeted healthcare providers(s) (continued)

Study	Evaluation Methods	Outcomes
Mazor, 2002	Performance audits, Patient rating, Self-assessment forms	Families in the post-intervention period were more likely to strongly agree that "the physician was concerned about my child" (OR 2.1, [1.0-4.2]) than families in the pre-intervention period.
		Families in the post-intervention period were more likely to strongly agree that "the physician listened to what I said" (OR 2.9, [1.4-5.9]) than families in the pre-intervention period.
		Families in the post-intervention were more likely to strongly agree that "the physician made me feel comfortable" (OR 2.6, [1.1-4.4]) than families in the pre-intervention period.
		Physicians used a professional interpreter less often in the post-intervention period (55% versus 29%, odds ratio 0.34, [0.16-0.71]).
		Physicians scored higher on measures of data gathering without the use of an interpreter (17.2 pre-test versus 22.4 post-test, p=0.01).
		All but one of the physicians in the post-intervention period expressed increased confidence in addressing various emergency department chief complaints in Spanish.
		Families in the post-intervention period were more likely to strongly agree that "the physician was respectful" (OR 3.0, [1.4-6.5]) than families in the pre-intervention period.
Nora, 1994	Group interviews, Participant ratings, Written exam	Spanish language proficiency went from 60% pre-test to 75% post-test.
		Using the misanthropy scale (which indicates openness to those not like oneself), there were no significant differences between intervention and control post course but there was a trend towards increased acceptance of others in the intervention group.
		Students reported liking the opportunity to meet Mexicans and traditional healers.
		Students were positive about their experience in Mexico; one reported that it exceeded their expectations. In comments six months later, four of the eight students who went to Mexico described the experience as life-changing.
		Cultural knowledge of Hispanic health in the intervention group went from 40% precourse to 58% post course versus the control group 46% pre and 42% post (p=0.007).
Rubenstein, 1992	Participant ratings, Written exam	Participants developed increased knowledge of ways physicians ignorance of patient's health beliefs can adversely affect clinical encounter (on Likert scale out of 5 points: pre-test 3.3, post-test 4.6 (p<0.0001)).
		The curriculum scored a mean rating of 3.5 (0=lowest; 4=highest) in usefulness.
		Participants developed increased knowledge about available resources to learn about non-conventional health beliefs (pre-test 3.8, post test 4.9 (p<0.0001)).
Sinnott, 2001	Individuals interviews, Self-assessment forms	Interviews with 14 indigenous hospital liaison officers indicated that the program was perceived as beneficial by 100% of those interviewed.
Tang, 2002	Self-assessment forms	After the intervention, the students reported increased understanding of the importance of incorporating sociocultural factors into patient care (p<0.01).

Evidence Table 6: Results from articles addressing Question 2, sorted by targeted healthcare providers(s) (continued)

Study	Evaluation Methods	Outcomes
		After the intervention, the students reported significantly increased understanding of the impact of sociocultural issues on the patient-physician relationship and on patients' health ($p<0.001$).
		After the intervention, the students reported significantly greater understanding of the relationship among sociocultural issues, health, and medicine ($p<0.001$).
NURSE		
Alpers, 1996	Self-assessment forms, Bernol and Froman Cultural Self-Efficacy Scale	Intervention group has a greater confidence/competence in providing care to African-American and Hispanic clients.
		Control group felt more confidence/competence in entering ethnically distinct community, and understanding Asian folk health practices than did the group who had received class content on culturalism.
Barton, 1992	Weekly journal entries	Students gained an understanding of both differences and similarities between their own culture and that of the migrant farm workers.
		Reflections on gaining awareness of the particular lifestyles of another culture were related to being able to observe and absorb ordinary events.
		Students experienced growth by developing respect for the migrant community.
		Students were incensed at inadequacies of the health care delivery system, and the insensitive and sometimes prejudicial treatment they saw their clients experience.
Berman, 1998	Self-assessment forms	Between 44-91% of participants (depending on type of workshop attended) believed that, as a result of their participation in the program, they had 1) increased patient compliance, 2) shared knowledge with other providers, and 3) optimized use of existing resources.
Blackford, 2002	Qualitative evaluation of group process	The process deepened nurses understanding of and insight into cultural biases regarding: 1 feminist expectations of gender roles, 2 gender equality, 3 patriarchy, 4 distinction between equity and equality, and 5 cultural sensitivity in nursing practice.
Bond, 1994	Self-assessment forms	Students reported increased Spanish language skills.
		Students learned a variety of field methods for data collection for qualitative research.
		Students expressed surprise that health care, access, physical settings, and care modalities could be so different in a country bordering the U.S.
		Students reported a better understanding of the circumstances from which Mexican clients enter the U.S. health care system.
		Students learned a great deal about themselves, their beliefs, and their own values, coping styles, and resources.
		Students reported increased knowledge about Mexican American cultural practices.

Evidence Table 6: Results from articles addressing Question 2, sorted by targeted healthcare providers(s) (continued)

Study	Evaluation Methods	Outcomes
		Many students were surprised at the common bond they shared with women of their Mexican families.
Campinha-Bacote, 1996	Participant ratings	Approximately 90% of the participants rated the program as good to excellent.
Felder, 1990	Written exam	No significant difference between freshmen and seniors nursing students in either program in attitudes towards black American clients.
		Baccalaureate seniors scored significantly higher than freshmen on the cultural knowledge test of black American clients ($p<0.001$), however there were no differences in knowledge between freshmen and seniors in the associate degree program.
Flavin, 1997	Essays, Participant ratings, Written exam	The curriculum received good scores for design, relevancy of information, and meeting participant expectations.
		There were no significant changes in "learning scores" regarding knowledge of practices and values of four targeted cultures prior to and after the curriculum.
Frank-Stromborg, 1987	Self-assessment forms, Cancer Attitude Inventory (CAI); Pittsburgh Attitude Survey (PAS); Activities survey	Activities survey reported increased community activities in cancer prevention and early detection.
		Scores on the Pittsburgh Attitude Survey (PAS) self report measuring cancer attitudes improved from the pre-test (mean=81) to the post-test (mean=82, $p<0.08$).
		94% rated simulated practice with models as excellent to above average, 98% rated the speakers as excellent to above average, and 78% rated the program as excellent.
		Scores on the Cancer Attitude Inventory (CAI) improved from pre-test (mean=132) to the post-test (mean=139, $p<0.001$).
Frisch, 1990	Written exam, Measure of Epistemological Reflection (MER)	5 out of 9 students that increased their scores on the Measure of Epistemological Reflection (MER) went on exchange to Mexico.
		Seventy-one percent of the measured cognitive improvement seen in the senior class can be attributed to the Mexico program ($p=0.018$).
		The Mexico exchange students were 3.5 times as likely to improve show cognitive improvement as measured by the Measure of Epistemological Reflection (MER) than were students that did not participate.
Hadwiger,1999	Essays describing relationship with patient	The nursing students became more aware of how their own culture affects the nursing care they provide.
		Emphasis was placed on the establishment of trust in the cross-cultural relationship in post-intervention essays.
		Respect for the patient and the patient's culture was constantly shown in post-intervention essays.

Evidence Table 6: Results from articles addressing Question 2, sorted by targeted healthcare providers(s) (continued)

Study	Evaluation Methods	Outcomes
		Students were more likely to include the patient in exploring goals and interventions in post-intervention essays.
Haloburdo, 1998	Individuals interviews	Students reported increased cultural sensitivity (in both those traveling to developed and developing countries), a recognition of universal human characteristics, and increased self-confidence.
		Students identified an increased knowledge of sociopolitical resources influencing health care population based health programs, and international attitudes towards the U.S.
Inglis, 2000	Written exam	Students who participated in the intervention showed significant shifts on 8 out of 23 attitudinal items towards more understanding of cross-cultural issues, whereas students in the control group showed no change on any items.
Jeffreys, 1999	Self-assessment forms, Transcultural Self-Efficacy Tool	Practical (interviewing) subscale score on the Transcultural Self-Efficacy Tool increased between pre and post-test from 16 to 55% ($p<0.001$).
		Affective subscale scores on the Transcultural Self-Efficacy Tool increased between pre and post-test from 16 to 43% ($p<0.001$).
		Cognitive subscale scores on the Transcultural Self-Efficacy Tool increased between pre and post-test from 2 to 28% ($p<0.001$).
Jeffreys, 2002	Participant ratings	Several students suggested inclusion of more complementary and alternative medicine.
		Students reported learning the most from topics such as conceptual models, ethnopharmacology, multiple heritage individuals, and lesbian clients.
Lasch, 2000	Written exam	Nurses participating in both intervention programs (workshop only and enriched model) significantly changed pain management attitudes ($p=0.01$), and maintained this change at 1 year follow-up, whereas the control group had no change.
		Both intervention groups (workshop only and enriched model) significantly improved knowledge of cancer pain management over control group at post test and follow-up ($p<0.0001$).
Lindquist, 1984	Participant ratings	A great deal of personal and professional growth experienced by nursing students who participated.
Lockhart, 1997	Self-assessment forms	Participants reported positive long term influences on their ability to provide culturally sensitive nursing care.
Napholz, 1999	Self-assessment forms, Written exam, Ethnic Competency Skills Assessment (ECSA)	Both groups significantly increased scores Ethnic Competency Skills Assessment (ECSA), however the experimental group increased much higher than the control group.
Oneha, 1998	Participant ratings, Self-assessment forms	Students rated the curriculum as helpful in identifying and investigating issues and thinking critically and analytically.
		Students reported greater awareness of societal problems.
		Students reported a greater ability to solve real problems in this field.
		Students reported re-examination of their former attitudes.
Rolls, 1997	Individuals interviews, Qualitative analysis	Attitudes towards another culture, language, and religion changed to a level of acceptance and understanding.

Evidence Table 6: Results from articles addressing Question 2, sorted by targeted healthcare providers(s) (continued)

Study	Evaluation Methods	Outcomes
		Students reported increased self confidence.
Rooda, 1993	Essays, Feedback	Department directors who participated thought the issue of culture, ethnic identity, and healthcare was timely and that they could use what they learned to educate their staff.
Ryan, 2000	Group interviews	Students reported several strategies to use to "learn to care for clients in their world not mine": preparation activities, dependencies or group support, use of coping skills, learning to communicate differently, live and think differently.
		Students experienced personal and professional growth.
		Students reported increased awareness of need to communicate in culturally sensitive ways.
		Students report greater appreciation of the value of others.
Ryan, 2002	Self-assessment forms	Participants reported that they gained insight into own (69%) and others' (86%) cultural beliefs.
		Participants reported learning new ways of communicating (69%).
		Participants reported increased awareness of culture in healthcare (91%).
		Participants reported increased knowledge about health practices (89%).
Scisney-Matlock, 2000	Self-assessment forms, 5 selected items measured with Michigan Longitudinal Study Scales (MLSS)	Knowledge of diversity gained through course work was not statistically significant different between experimental group and control group.
		Intervention group showed statistically significant increase in activities devoted to understanding other racial/ethnic groups.
		Intervention group showed statistically significant increase in self-reported social interactions with peers of different race/ethnicities.
		Intervention group showed statistically significant increase in satisfaction with relevance of course work to their own ethnicity.
Smith, 2001	Self-assessment forms, Written exam, Cultural Self-Efficacy Scale (CSES)	Questionnaire measuring knowledge of cultural diversity taken in 3 phases showed significant increases over time ($p<0.001$) in the intervention group and no improvement in the control group.
		Cultural self-efficacy scale (CSES) taken in the 3 phases, showed significant improvements in self-efficacy ($p<0.001$) in the intervention group and no improvement in the control group.
St Clair, 1999	Essays, Self-assessment forms, Journal; Field notes; Cultural Self-Efficacy Scale (CSES)	Continual growth in cultural self-efficacy scores for students in international clinical exercises (mean score 3.7) over those who remained in the US (mean score 3.3) in the follow-up testing period ($p=0.007$).
		There was a statistically significant increase in cultural self-efficacy scores on the post-test in all students.
		Students developed sensitivity to being a minority through international experience.

Evidence Table 6: Results from articles addressing Question 2, sorted by targeted healthcare providers(s) (continued)

Study	Evaluation Methods	Outcomes
Underwood, 1999	Participant ratings, Self-assessment forms	Since completing the program, many participants have designed and implemented a number of innovative cancer prevention programs.
		Participants indicated more confidence in their ability to positively influence cancer prevention behaviors in practice and community.
		Participants indicated that the curriculum changed their attitudes towards nurses role in cancer prevention and early detection.
		Participants indicated increased knowledge of cancer prevention and early detection among African Americans.
Underwood, 2002	Self-assessment forms	Between 33% to 50% of participants reported that their knowledge had substantially increased on a wide range of items (N=50) concerning five common cancers among African Americans.
Warner, 2002	Group interviews	Students were able to identify common ground of human experiences.
		Students expressed frustration over intractable health problems.
		Students were able to contrast Navajo healing with Western ways.
Wendler, 2002	Essays, Participant ratings	Almost all students said they would recommend the course to others.
		Students rated the course process, activities, and outcomes highly.
Williamson, 1996	Group interviews, Self-assessment forms, Written exam, Cultural Self-Efficacy Scale	Attitudes about cultural patterns. Showed sustained improvements in African American [begin 2.77 (0.66), middle 3.31 (0.72), end 3.61 (0.65)], Hispanics [begin 2.58 (0.70), middle 3.31 (0.70), end 3.69 (0.71)], and SE Asians [begin 2.28 (0.69), middle 3.64 (0.69), end 3.35 (0.77)] ($p<0.001$).
		Students improved in transcultural skills (begin 3.29 (SD +/-0.69), middle 3.64 (SD +/-0.69), end 3.96 (SD +/-0.66) ($p<0.001$)).
		Participants improved their knowledge of cultural concepts (beginning 2.92 (+/- 0.74), middle 3.49 (+/- 0.70), end 3.68 (+/- 0.66) ($p<0.001$)).
OTHER PROVIDERS/ MIXED GROUPS		
Nurse, Physician, Receptionists, Volunteers, Business Office Staff		
Gallagher Thompson, 2000	Self-assessment forms, Written exam	Statistically significant increased referrals of Hispanic Alzheimer's patients and/or families to the appropriate specialized services about Alzheimer's disease ($p<0.005$).
		Statistically significant increase in participants knowledge of Hispanic beliefs about Alzheimer's disease ($p<0.05$).
		Statistically significant increase in participants general knowledge about Alzheimer's disease ($p<0.005$).

Evidence Table 6: Results from articles addressing Question 2, sorted by targeted healthcare providers(s) (continued)

Study	Evaluation Methods	Outcomes
Nurse, Physician, Social Workers, Nurse's Aides, Receptionists, Clerks		
Gany, 1996	Written exam	There was a significant attitude shift on 12 item exam in which the mean score was 33.76 on the pre-test compared to 35.68 on the post-test ($p<0.003$).
		There was a significant knowledge shift on 21 item scale exam about immigrant health in which students scored 15.8% correct in the pre-intervention period compared to 18.6% correct in the post-intervention period ($p<0.0001$).
Nurse, Pharmacist		
Chevannes, 2002	Self-assessment forms, Focus groups	After the intervention, 8/17 said that they were not able to bring about change in practice and 4/17 participants were able to identify areas of practice that had changed.
		Qualitative: "I have become more conscious of stereotyping."
		Participants reported a better understanding of the concepts of ethnicity and race, and community resources available.
		82% believed that training added to their knowledge.
		Participants reported the acquisition of confidence to engage with colleagues about different cultural values and practices.
Nurse, Pharmacist, Physician, Occupational Therapy, Physical Therapy, Health Administration		
Erkel, 1995	Participant ratings, Self-assessment forms	Interdisciplinary team interaction, exposure to new practice opportunities, and the community-oriented primary care project were the elements of the course that were most enjoyed by students.
		Participants gained an increased awareness to barriers to care for rural clients.
		Participants gained increased knowledge of rural, transcultural, and interdisciplinary issues; principles of case-management, patient focused care, and community oriented primary care.
		Course evaluations revealed that classroom and field trips met student expectations.
		72% of students reported that the practicum influenced them to consider practicing in a rural setting.
		Participants gained an appreciation for rural lifestyle.

Evidence Table 6: Results from articles addressing Question 2, sorted by targeted healthcare providers(s) (continued)

Study	Evaluation Methods	Outcomes
Nurse, Pharmacist, Physician, Any Staff with Direct Patient Contact		
Way, 2002	Participant ratings, Patient rating, Self-assessment forms	After the intervention there was an increased perception among patients of seeing staff members of their ethnicity (p=0.04) and of finding magazines/reading materials on ward that contained information of interest (p=0.04). There was also a significant increase in patients' reporting that staff would see them as individuals (p=0.06).
		There was a statistically significant increase in participants' perception that there were pictures on walls that may remind patients of family/friends (p=0.01), and that there were magazine/reading materials that contain information in which the patient may be interested (p=0.0001).
		58% of participants increased interest in learning patient and family background, and 59% of participants increased sensitivity to cultural competence.
		59% of participants increased awareness of special needs of recipients who do not speak English.
Community Health Workers, Undergraduate Students		
Bengiamin, 1999	Self-assessment forms, Open-ended questions	Students evidenced a greater awareness of the ever-changing and complex life stages across life's continuum through a transformational process of personal growth and emerging definition of culture.
		After the intervention students understood the significance of recognizing socioeconomic status as a culture of its own.
		Students gained the ability to view health care in a holistic manner.
Community Health Worker, Church Nurse Guild Members and Other Interested Community Organizations		
Briscoe, 1999	Self-assessment forms, Intent to take action form	At six months follow-up, 30% of nurse participants had fulfilled their intention compared to <10% of nurses in other groups.
		After the curriculum, participants reported that they intended to arrange for a community group to take a diabetes risk test (71%), distribute diabetes material at community health fairs or church services (67%), present African-American Program modules (59%), promote health foods at pot luck suppers (56%), and arrange cooking or exercise classes (38%).

Evidence Table 6: Results from articles addressing Question 2, sorted by targeted healthcare providers(s) (continued)

Study	Evaluation Methods	Outcomes
Social Workers		
Browne, 2002	Individuals interviews, Self-assessment forms	After the intervention, 100% felt competent about their role in an interdisciplinary team.
		After the intervention, 100% believed that their style of practice was culturally competent.
		After the intervention, 7 of 12 felt knowledgeable regarding elder abuse and the full range of social work interventions.
		After the intervention, 100% agreed that they understood normal aging.
		After the intervention, 11 of 12 agreed that they were knowledgeable about common ethical dilemmas, policy analysis, program evaluations, and resources development.
Psychologists		
Hansen, 2002	Written exam	Those who completed the program scored 88.3% on knowledge test, those who did not take the program (control) scored 75.3% ($p<0.001$).
Tomlinson-Clarke, 2000	Individuals interviews, Participant ratings	Overall students perceived textbooks and reading as helpful in gathering understanding of multicultural issues.
		Acquisition of multi-cultural knowledge was considered by participants to be useful and transferable in developing effective counseling interventions at 4 months follow-up.
		Critical incidents that involved students' interactions with one another were most frequently cited as enhancing learning.
Mental Health Professionals		
Stumphauzer, 1983	Observer questionnaire, Participant ratings, Written exam	Trainees ability to do behavioral analysis and treatment plan increased significantly ($p<0.01$) from the pre-intervention period to the post-intervention period.
		The course was seen by all trainees as having added "a greater deal" or "a considerable amount" to their knowledge base.
		There were significant increases on a 23-item test measuring knowledge of behavioral modification principles, from 38% correct on pre-test to 68% correct on post-test ($p<0.01$).
Occupational Therapy		
Velde, 2001	Interviews	Qualitative/quotes from students/faculty: student quote - "I feel that Tillery people would prefer to see our differences and respect them for those differences rather than act as if we are the same."
		Qualitative/quotes from students/faculty: faculty quote - "I respect and value the differences I see between

Evidence Table 6: Results from articles addressing Question 2, sorted by targeted healthcare providers(s) (continued)

Study	Evaluation Methods	Outcomes
		Tillery residents and myself."
Counselors		
Wade, 1991	Patient rating, Barrett-Lennard Relationship Intervention; Counselor Effectiveness Scale; Counselor Rating Form	Brief culture sensitivity training produced significant differences in client perceptions of counselors and the counseling process and was more important than racial pairing.
		Clients assigned to counselors in culture sensitivity training returned for more follow-ups (mean 2.88 versus 1.90).

Appendix D: Peer Reviewers

First Name	Last Name	Affiliation
Partner		
Helen	Wu	National Quality Forum
Internal Peer Reviewer - Johns Hopkins University		
Martha	Hill	Johns Hopkins University School of Nursing
Technical Experts		
Laura	Petersen	Houston VA Medical Center, Baylor College of Medicine
Kevin	Fiscella	Departments of Family and Community & Preventive Medicine, University of Rochester School of Medicine
Robert	Beltran	Latino Medical Policy Institute
Anne	Beal	Commonwealth Fund
Marsha	Lillie-Blanton	Kaiser Family Foundation
Peer Reviewers		
Robert	Like	Center for Healthy Families and Cultural Diversity, Department of Family Medicine, UMDNJ - Robert Wood Johnson Medical School
Spero	Manson	American Indian and Alaska Native Programs, University of Colorado Health Sciences Center
Jeanette	South-Paul	University of Pittsburgh School of Medicine, Department of Family Medicine
Dawn	Clancy	Department of Medicine, Medical University of South Carolina, Center for Healthcare Research
Debra	Danoff	American Association of Medical Colleges
Denice	Cora-Bramble	Children's National Medical Center
Pamela	Dickson	The Robert Wood Johnson Foundation
Internal Experts		
Debra	Roter	Department of Health Policy and Management, Johns Hopkins Bloomberg School of Public Health
Haya	Rubin	Quality of Care Research, Johns Hopkins University
Jon	Samet	Department of Epidemiology, Johns Hopkins Bloomberg School of Public Health