Research Prioritization Topic Briefs
Topics 7-13

PCORI Scientific Program Area:
Addressing Health Disparities

Prepared for PCORI by researchers at the
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Contents

Topic 7: “Care Coordination for Special Needs Patients” .......................................................... 3
Topic 8: “Care Coordination in Primary Care” ......................................................................... 7
Topic 9: “Telemedicine for Rural Cardiovascular Care” .......................................................... 12
Topic 10: “Telemedicine for Rural Mental Health Care” .......................................................... 16
Topic 11: “Breast Cancer Screening for High-Risk Women” .................................................... 20
Topic 12: “Rural Trauma Care” ............................................................................................ 24
Topic 13: “Complementary Medicine for Juvenile Cancer Patients” ....................................... 29
Topic 7: “Care Coordination for Special Needs Patients”

Compare the effectiveness of care coordination and clinical decision supports in producing better health outcomes for children with disabilities and special healthcare needs

Introduction
This topic brief provides an overview of the comparative effectiveness of care coordination and clinical decision supports to enhance health outcomes for children with special healthcare needs (CSHCN). Care coordination refers to the implementation of care plans “by a variety of service providers and programs in an organized fashion,” which involves “needs identification, assessment, prioritizing, and monitoring.” Clinical decision supports are computerized tools that provide healthcare providers, patients, staff, and other individuals with well-filtered clinical and patient-specific information at appropriate times in order to help improve clinical decision making. The population of CSHCN is broadly defined by the Health Resources and Services Administration’s (HRSA) Maternal and Child Health Bureau (MCHB) to include all children who have, or are at increased risk for, chronic physical, developmental, behavioral, or emotional conditions and who require health and related services beyond the needs of most children. The scope of this brief is focused on the overall CSHCN population, rather than any particular subgroups.

Gaps exist in access to needed care and support services. The vast majority of CSHCN have consistently received some form of continuous public or private health insurance coverage within the last year, with continuous coverage for over 90% in 2010. Still, health plan coverage for about a third of families caring for CSHCN fails to provide enough financial assistance to make out-of-pocket costs reasonable, and about 14% of families with continuous coverage experience an unmet need for specific care services. About 20% of these families have difficulty getting referrals, which could result in a gap in continuity of care.

Coordinated care may improve effectiveness and efficiency of care for CSHCN. One approach that can be used to improve access to needed care services while increasing the efficiency of care for CSHCN is coordinated care that is comprehensive and family-centered. Leading national advocacy groups for the health of children and their families, such as the American Academy of Pediatrics (AAP) and the MCHB, have identified effective care coordination as being essential to improve patient-centered outcomes for

* Children ages 0–17 are considered to have special healthcare needs when they meet at least one of five screening criteria according to the 2009/2010 National Survey of Children with Special Health Care Needs (NSCSHCN): (1) they currently need or use prescription medicine, other than vitamins, for a condition which has lasted or is expected to last for a minimum of 12 months; (2) their need or use of medical care, mental health, or educational services exceeds normal care or service usage for most children of the same age; (3) their ability to participate in activities most children of the same age can do is limited or prevented by their condition(s); (4) they need or receive special therapy; or (5) they have an emotional, developmental, or behavior problem requiring treatment or counseling.
CSHCN and their families. In particular, the patient-centered medical home (PCMH) model is considered to be the optimal approach to deliver coordinated care. Delivery of healthcare services within medical homes is guided by the needs of the individual child and family, the primary care physician’s expertise in treating CSHCN, and family/physician collaboration in coordinating care. Within the medical home, a practice care coordinator will ideally participate in developing a plan of care with the family and physician and also help the family access needed services. Despite the promise of medical home-based coordinated care, 57% of CSHCN did not receive coordinated care within a PCMH between 2009 and 2010.

Clinical decision supports may increase patient-centeredness and appropriateness of care for CSHCN. Although not widely incorporated in the delivery of healthcare services to CSHCN, clinical decision supports have the potential not only to help clinicians provide optimal evidence-based care to CSHCN, but also to involve families in clinical decision making to a greater extent. Support tools are usually components of comprehensive electronic health record (EHR) systems, but they may also be used independently. Clinical decision supports can range from computerized reminders for providers and patients with reference information appropriate for the individual child’s needs. Family-oriented clinical decision supports may be especially useful for helping families of CSHCN choose the most culturally and personally acceptable services for their children.

Burden on Society
Prevalence: approximately 15% of children in the United States have special healthcare needs. Many of those children (45%) have four or more functional limitations affecting their daily lives. A significant portion of CSHCN experienced behavior problems (41%), and 43% experienced anxiety or depression in 2009 and 2010.

Health service use is much higher among CSHCN. Compared with other children, CSHCN, by definition, require much more intensive healthcare services to meet their healthcare and other service needs. According to data from the 2000 Medical Expenditure Panel Survey (MEPS), CSHCN had about four times the number of hospitalizations and spent seven times as many days receiving hospital care. In addition, they used seven times as many annual visits to non-physician healthcare providers as other children, including other primary care providers, mental healthcare providers, and allied healthcare providers such as physical therapists. CSHCN also took five times as many prescribed medications as other children. In 2008, the average expenditure per CSHCN with any healthcare expenses ($4,100) exceeded that for children without special healthcare needs ($983) by nearly fourfold.

CSHCN families face financial and employment burdens. Meeting the healthcare and other service needs of CSHCN can impose heavy financial and employment-related burdens on their families. Data from the 2000 MEPS indicate that families spent, on average, $352 annually on out-of-pocket expenses for all healthcare and special services, about twice as much as the $174 average annual out-of-pocket spending by families without CSHCN at the time. One recent systematic review synthesized 32 cross-sectional and longitudinal studies measuring how out-of-pocket expenses and employment status vary among families caring for CSHCN. Families’ burden depended on the severity and type of conditions.
affecting children, with families of children with more severe conditions requiring the most out-of-pocket expenses and the greater likelihood of reducing working hours.  

**Options for Addressing the Issue**

Little research exists on effectiveness of care coordination among CSHCN. One recent AHRQ systematic review included seven studies that reported improved patient-reported experiences when better care coordination existed in different PCMH interventions.  

Another review of 35 studies provided evidence that hospital-based comprehensive care emphasizing coordination is associated with positive changes in care effectiveness, family-centeredness of care, and patient safety. However, this review included studies that were not designed to evaluate effectiveness or that used designs that are prone to bias.

Limited evidence exists about the feasibility of using family-oriented decision support interventions for CSHCN. Numerous studies have shown that provider-focused clinical decision supports can reduce medication errors for pediatric inpatients and improve vaccination rates among children with asthma, for example. However, there is only limited evidence about the feasibility of using family-oriented decision support interventions for CSHCN, and no evidence to date about the ability of such interventions to improve patient-centered outcomes. Several groups, such as the AAP, are currently working to fill this gap by promoting initiatives to integrate patient-recorded data in regular clinical practice.

**Potential for New Information to Rapidly Improve Care and Patient-Centered Outcomes**

The practice of coordinating the complex, multidisciplinary care appropriate for CSHCN is key in improving their patient-centered outcomes, but multiple barriers to implementation continue to persist. These may include: (1) lapses in communication among healthcare providers and organizations involved in care; (2) a lack of clearly defined roles among healthcare teams, community agencies, and families; and (3) language and cultural barriers.

Data linking care coordination interventions to patient-centered outcomes for CSHCN is very limited, although what is available suggests that enhancing care coordination may hold promise as a strategy to improve health and related outcomes for CSHCN and their families. Healthcare reform under the Affordable Care Act has created new incentives for healthcare organizations and providers to improve quality and efficiency by implementing systems of care based on the PCMH model, which often incorporates enhanced care coordination. Also, clinical decision support systems have shown promise if they can be tailored to the complex needs of CSHCN and their families, and, as a result, it is expected that clinicians will begin to use decision supports more frequently. More studies on the effectiveness of those coordination efforts are needed.

**References**


Introduction
Care coordination is essential to effective delivery of health care, particularly for patients with chronic conditions and/or multiple conditions. Without efficient coordination of care, patients face increased risk of harm, disease burden, and overuse of services.\(^1\) To address the lack of coordination in health care for increasingly more complicated needs, involving multiple specialties, the National Quality Forum (NQF) defined care coordination as a “function that helps ensure that the patient’s needs and preferences for health services and information sharing across people, functions, and sites are met over time.”

The NQF identified a framework with the following five key domains: (1) healthcare “home”, (2) proactive plan of care and follow-up, (3) communication, (4) information systems, and (5) transitions or handoffs.\(^1\) Given the success with which NQF posited a care coordination conceptual framework comprised of these domains, there is a strong suggestion for much more critical exploration to be completed in order to strongly recommend care coordination as an effective intervention model to improve patient-reported health outcomes. The following report is organized according to the NQF domains to identify what we know and what are important areas for development in care coordination.

Burden on Society
As the prevalence of chronic conditions such as diabetes increases, patients with one chronic condition may see as many as 16 physicians in one year.\(^2\) In 2000, an estimated 125 million individuals in the United States were living with at least one chronic condition, and this figure is estimated to increase to 157 million by 2020.\(^2\) Ninety-six percent of US Medicare spending is reported to cover individuals with multiple chronic conditions.\(^3\) Almost three quarters (73.1%) of US adults aged 65 and older have two or more chronic health conditions,\(^4\) and 20% of people (27 million) with a chronic illness also have activity limitations.\(^5\) With such a large and growing number of individuals having at least one chronic condition, combined with the increasing burden on the healthcare system, there is strong demand for efficiency across specialties—efficiencies building from improved communication between providers, as well as with patients.

Smith and colleagues conducted a systematic review in 2012 to address the increasingly growing concern of multimorbidity.\(^6\) In their review, the authors identified organizational interventions as the most effective in addressing multimorbid health concerns. Organizational interventions target changes in health care delivery by matching the needs of patients with multimorbidity across a range of areas,
such as coordination of care and medication management or incorporating other health professionals to address the needs relating to the patient’s physical and social functioning.\(^5\)

**Options for Addressing the Issue**

There is a significant body of published work that has examined several potential forms of care coordination that positively impact patient outcomes. We briefly summarize widely applied integrated care models that have been applied to various chronic conditions according to the domains of the NQF framework discussed above.

Care integration may improve depression management. There are examples of care coordination models for mental health. Butler and colleagues conducted a systematic review of 26 clinical trials that tested collaborative or integrated primary care for mental illness. The authors concluded that more integration (e.g., combining primary with mental health services) was not significantly associated with improved clinical depression outcomes, but was associated with improved depression management in primary care patients.\(^7\) Chou and colleagues found that teamwork was effective for a positive impact on guideline implementation related to screening for major depressive disorder.\(^8\) In another study, the authors found no impact of a multidisciplinary team consultation on mental health (specifically, anxiety and depression), general health, and quality of life of mothers from socioeconomically deprived neighborhoods.\(^9\) Despite evidence to suggest a positive impact of care coordination, the study suggests that coordinated care for minority groups may require a unique approach that is culturally sensitive.

Coordinated care may improve diabetes outcomes. Diabetes is a useful condition to consider in care coordination because management is often complex and requires coordination and consistent communication among many providers. How we incorporate information systems and technology with care coordination for diabetes and other complex conditions is important to consider when building a coordinated care team.

A review by Crowley and colleagues found six studies with significant positive outcomes from coordinated care in terms of improved patient education and various diabetes mellitus outcomes (e.g., HbA1c\(^b\) levels).\(^10\) Another review found a significant impact on HbA1c and LDL\(^c\) in addition to the number of clinic visits and testing frequency.\(^11\) Egginton and colleagues also found evidence of positive impact on quality of life, patient satisfaction, self-care, and healthcare utilization.\(^11\) Verhoeven and colleagues reviewed teleconsultation for diabetes care. This review concluded that teleconsultations for diabetes care were feasible, cost-effective, and reliable.\(^12\) The evidence supporting coordinated care for diabetes suggests improved patient-reported outcomes in addition to improved quality of life. There is also evidence to suggest a net cost savings of coordinated care for diabetes care.\(^12\)

Coordinated care may offer the additional support needed to treat patients with multimorbidity effectively. Addressing multimorbidity in patients presents complicated challenges for treatment, follow-up care, and, therefore, adherence. Coordinated care may increase likelihood for longer lasting adherence and positive health outcomes.

\(^b\) A lab value that shows how well the patient is controlling his or her blood sugar over the course of a few months. \(^c\) Low-density lipoprotein cholesterol, commonly referred to as "bad" cholesterol.
Smith and colleagues conducted a review to examine the effectiveness of interventions targeting multimorbidity in primary care and community settings. Ten clinical trials were reviewed, and they primarily focused on the aging population. Six of the 10 interventions applied an intervention focused on changing the organization of care delivery, usually through case management or enhanced multidisciplinary team work. Despite mixed results, there was a trend toward improved outcomes in terms of medication adherence. Williams and colleagues conducted a review of the effectiveness of strategies to improve coordination between primary care and chronic disease self-management programs for socioeconomically challenged patients. The authors identified 16 studies that used linkage strategies for a variety of functions—supporting communication, ongoing clinical care, program development, and recruitment or implementation. In the end, the authors concluded that there was insufficient evidence to identify the specific strategies and linkages that would most effectively link with primary healthcare providers to enhance services, transitions, and, therefore, adherence and patient outcomes.

**Potential for New Information to Improve Care and Patient-Centered Outcomes Rapidly**

Based on the literature reviewed, care coordination research offers some evidence to suggest both positive patient-centered outcomes and improved processes of care. Specifically, the preceding section presents various applications of care coordination that support improvements in clinical outcomes (e.g., self-care), patient satisfaction, adherence, and quality of life. But there are still several aspects of care coordination that require further empirical inquiry to more precisely measure the benefits and areas for development, particularly when coordinated care is applied to various socioeconomic and ethnic groups.

The healthcare “home” model, identified as one key NQF domain, is an area for improvement that could be further explored as a viable care coordination option. The healthcare “home” is a concept that strives to provide accessible, continuous, comprehensive, and coordinated services that are delivered within a patient’s family and community context. It is a model that strives to provide enhanced medical services with a more efficient cost and improved patient and family experiences, as well as primary healthcare provider experiences. The effectiveness of “medical homes” in improving outcomes is currently one of the most active research topics, so innovations using medical homes would likely disseminate quickly.

**Gaps in the literature**. Given gaps identified in this report, future efforts can build from the concepts defined by NQF to: (1) more specifically define and measure how care coordination should be conceptualized and implemented; (2) address issues with measurement of care coordination (e.g., patient perceptions of continuity, team/cross care boundary continuity); and (3) measure the effectiveness of care coordination for various populations.

Future care coordination efforts could focus on identifying health service delivery strategies that are characterized by: (1) efficient use of healthcare services across specialties that have supporting evidence of the healthcare “home” model; (2) proactive care and follow-up by all providers involved in a coordinated care plan; (3) appropriate and shared information systems that are accessible by providers and that accurately report patient conditions; and (4) consistent communication among providers resulting in smooth transitions between services and patient handoffs.

The service and patient-level outcomes from achievement of these domains can include: quality
improvement, coordinated treatment plans, decreased burden of disease, improved medication and treatment regimens, enhanced preventive care, and improved health outcomes.

References


18. Dudley L, Garner P. Strategies for integrating primary health services in low- and middle-income countries at the point of delivery. *Cochrane Database of Systematic Reviews (online)*. 2011(7):CD003318.

Topic 9: “Telemedicine for Rural Cardiovascular Care”

Compare the effectiveness of telemedicine and/or expanding practice to non-physician practitioners (i.e., nurse practitioners, physician assistants) on improving cardiovascular disease outcomes in rural populations.

Introduction
The cardiovascular disease (CVD) mortality risk is higher in rural populations than in urban populations, even after adjusting for age. A probable reason for this disparity is reduced access to timely care. In contextual analysis, Starfield and colleagues found that counties with a lower primary care supply had higher mortality from CVD. Additionally, because cardiologists tend to cluster disproportionally in larger counties, rural residents are less likely to use a cardiologist to manage their cardiovascular disease. Two potential strategies attempt to address this disparity and the challenge of having fewer physicians in rural areas: (1) expanding practice to non-physician professionals (e.g., nurse practitioners, physician assistants, and pharmacists; hereafter “expansion of the team”) and/or (2) using telemedicine approaches to connect rural residents and providers with care teams in larger healthcare systems. Using telemedicine allows the practitioner to provide more routine monitoring of patients from a remote location. Not only would this facilitate more routine care, but it would alleviate some of the burden patients may face having to travel long distances for every appointment. Both telemedicine and expansion of the team show promise as methods to reduce the CVD disparity in rural areas.

Burden on Society
Cardiovascular disease is highly prevalent and more common in rural areas. CVD is a broad set of conditions including heart failure, hypertension, and stroke. It is the most common cause of death among Americans, the cause of nearly one-third of all deaths in 2010. The age-adjusted death rate from CVD (per 100,000) was higher in nonmetropolitan counties (249.4) compared to metropolitan counties (230.2). Similar disparities were seen in rural counties. In fact, the death rate in rural counties was 16% higher than in large “fringe” metropolitan (e.g., suburban) counties. Certain CVD risk factors, such as obesity and smoking, are more prevalent among rural residents than urban. One study found hypertension and diabetes (a risk factor for CVD) were more poorly controlled among rural African Americans than urban.

Options for Addressing the Issue
The use of telemedicine to manage cardiovascular conditions appears to be effective for both acute and non-acute conditions. The use of telemedicine (which includes teleconsulting, telemonitoring, and other methods using technology to transmit medical information) to support the management of acute cardiovascular events, especially stroke, appears to be effective. Because telemedicine in this context is specifically designed to improve access to specialist care, which is lacking in the community,

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4 In this brief, “metro” refers to metropolitan counties. Micropolitan areas have an urbanized population of 10,000 to 49,999. “Rural” and “noncore” refer to the remaining counties (http://www.whitehouse.gov/omb/inforeg_statpolicy#ms).
telemedicine may have greater potential in rural populations. Moulin et al.\(^7\) reviewed evidence demonstrating that limited timely access to technology can lead to suboptimal care for strokes in rural areas (e.g., limited use of Tissue Plasminogen Activator \([\text{tPA}]\)).\(^5\) A systematic review of telestroke management by Johansson and Wild\(^8\) found that, in most studies, hospitals with telestroke care had an increased use of \text{tPA}.

Another way to improve stroke care is by providing specialist consultations to rural providers. One review found that some rural hospitals not providing \text{tPA} actually have the capacity to do so, but do not because local physicians are reluctant to provide \text{tPA} without local neurologic expertise; this expertise could be provided via telemedicine.\(^9\)

The effective use of telemedicine in stroke care may also suggest strategies for non-acute CVD conditions. Telemedicine for non-acute events has also generally been found to be effective for numerous conditions, including cardiovascular conditions and risk factor management. For example, a Cochrane review concluded that structured telephone support and telemonitoring\(^6\) programs for those with heart failure were effective in reducing mortality and hospitalizations.\(^10\) A review of home-based telehealth concluded that telehealth showed improved health outcomes.\(^11\) In another review, Kraai et al.\(^12\) concluded that patients are generally satisfied with telemedicine.

**Literature on redesigning the care team is more limited, but generally positive.** Redesigning the healthcare team by extending to non-physician providers also appears to be an effective way to deliver CVD care in both rural and urban areas. A systematic review by Walsh\(^13\) concluded that the most effective intervention for improving hypertension management was a change in the provider team (assignment of some physician responsibility to a non-physician professional). Majumdar\(^14\) found that diabetes care teams providing outreach to people with diabetes improved control of hypertension but not control of diabetes.\(^7\) Bray et al.\(^15\) reported improved diabetes care by the addition of an advanced practice nurse and some prompts in the electronic health record (including a registry and visit reminder). Bove et al.\(^16\) found nurse management reduced the CVD risk among underserved asymptomatic rural and urban patients with moderate to high risk. Nkansah\(^17\) found that nontraditional use of pharmacists in outpatient settings led to improved outcomes, although few of the studies focused on rural populations specifically, and many were non-CVD. The use of pharmacists in rural settings represents a gap in the literature; the use of pharmacist counseling, pharmacists-assisted training, and so forth are relatively under-researched strategies.

**Potential for New Information to Improve Care and Patient-Centered Outcomes Rapidly**

Both of these strategies are active topics in the research community, especially given the high prevalence of CVD and the rural-urban disparity. Advances in telemedicine technology and system-wide efforts to redesign the organization of the healthcare team suggest further advances in this field for the foreseeable future and widespread interest in these topics. The combined (tele) strategy of (1) providing access to specialist; (2) overcoming barriers such as transportation, healthcare access, and utilization;

\(^5\) A substance used to dissolves clots that cause strokes.
\(^6\) Telemonitoring involves remotely monitoring patients who are not at the same location as the healthcare provider. A patient may have devices at home, and the results of these devices will be transmitted via telephone to the healthcare provider.
\(^7\) A lab value that shows how well the patient is controlling his or her blood sugar over the course of a few months.
and (3) improving patient-based care via training of multiple types of providers should be explored further to demonstrate its effectiveness. Notably, recent research has used both telemedicine and expanded teams to deliver multifaceted interventions, and these multifaceted interventions could improve CVD outcomes for rural populations.

Would new information from research on this topic remain current for several years, or would it be rendered obsolete quickly by subsequent studies? The technology of health communication is rapidly changing, as is our ability to integrate these communication types with electronic health records (a prior limitation). Similarly, payment systems to incentivize these types of care are changing. Given capital and time costs of installing and learning to use these technologies, research will be quite useful. Studies should be designed to be short in duration so as to disseminate results to the users while relevant, in case future advances in technology or changes in the healthcare system make the research obsolete.

References


Compare the effectiveness of telemedicine and/or expanding practice to non-physician practitioners (i.e., nurse practitioners, physician assistants) on improving mental health disease outcomes in rural populations.

Introduction
This brief focuses on two potential strategies to improve management and treatment of mental health outcomes in rural populations. Both address potential barriers to access for mental health care in rural communities: telepsychiatry allows remote management and treatment by practitioners in other communities, and expansion of mental health services to non-physicians clinicians can leverage existing practitioner supply.

Burden on Society
Approximately 25% of the US adult population is reported to have a mental illness, and 50% of US adults will develop one mental illness over the course of a lifetime. Further, recent estimates about 20% of the US population (62 million people) live in rural areas. Among those individuals in rural areas, 16% to 20% are reported to struggle with mental illness, substance abuse, and medical-psychiatric comorbid conditions. Incidence rates of mental health disorders for urban and rural individuals are not significantly different, but due to differing environmental factors, experiences of mentally ill rural individuals and their families are distinctly different from their urban counterparts. Specifically, research has found that rural communities have higher suicide rates as a result of mental illness than their urban counterparts. Mental health service provision is different in rural areas due to three primary factors: availability, accessibility, and acceptability. Only 9% to 11% of practicing psychiatrists in the United States are reported to work in rural areas of the country. Given the high incidence of national mental illness, coupled with the limited availability, accessibility, and acceptability of mental health services in rural areas, along with a worldwide shortage of psychiatrists to respond to this significant international need for service, telemedicine is an apparent option to consider.

Staller published a report in 2006 addressing the significant need for mental healthcare services for youth in rural areas. This report noted that despite the Surgeon General’s 2001 action plan agenda that identified a critical need for mental health care for American youths, there remained a perpetual shortage of child psychiatrists, particularly in rural areas of the country. Staller described the various successes of an innovative program in New York State, which is unique because it provides specialty certification to nurse practitioners who complete advanced training and experience. In addition to meeting a critical workforce need, the program example provided by Staller’s report illustrates how successfully and easily barriers to communication, cost, and care coordination among multiple providers can be overcome.

Options for Addressing the Issue

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Telemedicine is an effective option for providing primary care providers (PCPs) with the clinical support needed to provide needed mental health services to rural or isolated patients. The following studies indicate that telepsychiatry\(^8\) can be implemented in an effective manner with little negative impact on treatment adherence or patient perceptions of physician competence. Freuh and colleagues\(^7\) conducted a secondary analysis of data collected from a randomized controlled trial in which telepsychiatry and “same room” psychiatry were compared. The findings of their analysis found no significant difference between the two modes of psychiatric care; that is, telepsychiatry did not compromise the perceptions of physician competence, nor did it negatively impact treatment adherence. In another study, Hilty and colleagues\(^8\) pilot tested the effectiveness of providing an electronic consultation service to PCPs via telephone and e-mail. The most common consultation included advice in the areas of psychiatry, gastroenterology, and medical genetics. The authors found that PCPs had favorable experiences with the electronic consultation services and that service delivery to rural populations and clinical outcomes were enhanced by this electronic service. Indeed, the practitioner community seems to embracing mental health as the service most conducive to telemedicine services; a MedPAC analysis found that nearly two-thirds (62%) of Medicare telehealth claims in 2009 were for mental health services. MedPAC concluded that an AHRQ review showed telemedicine “was most effective for specialties that rely on verbal discourse and not necessarily physical contact, including mental health and neurology”.\(^9,10\)

Telemedicine can be a source for facilitating a collaborative model of care with non-physician mental health providers. When considering telemedicine, it is important to identify the various service providers and specialties that will provide the services on both sides of the service spectrum (e.g., frontline workers, peer advisors, other non-physician providers). In some instances, integrating non-physician providers may be a viable and strong option, but this remains an understudied area in research. Tschirch and colleagues\(^11\) evaluated an innovative project that developed and provided a telemedicine network for victims of domestic violence. The intervention relied on nurses who were involved in the design, implementation, and evaluation of the project. The authors concluded that the network responded to a significant need for women who previously did not have access to appropriate mental health services despite their significant need. The authors also concluded that nurses offered valuable clinical and organizational value in the promising delivery of their mental health network and mental health services overall.

Effectiveness of non-physician clinicians to manage mental health is relatively unknown. Innovative models have been developed that use non-physician practitioners to treat and manage mental health. For example, psychiatric nurse practitioners\(^12\) and paramedics\(^9\) expand the set of potential providers who can refer or manage mental disorders. Grossman et al.\(^13\) explore the potential role of psychiatric nurses in school-based clinics. There are limited studies evaluating the effectiveness of these kinds of models, however. One trial comparing practice-based and telemedicine-based collaborative care models in rural Federally Qualified Health Centers (FQHCs) found that telemedicine-based models were more effective, suggesting that the combination of telemedicine and collaborative care models may be most effective.\(^14\) Some models implemented in other countries may also suggest innovative models; one Australian trial found practice nurses were effective in reducing depression symptoms.\(^15\)

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\(^8\) For a broader overview of telemedicine, its potential for improving outcomes among rural populations, and barriers to wider implementation and use, see reference 6.
Potential for New Information to Improve Care and Patient-Centered Outcomes Rapidly.

Future directions. One area in which telemedicine has been scarcely examined has been the context of the “train-the-trainer” model that refers to training paraprofessionals to provide them with skills for mental health service provision. At a time when the healthcare system is feeling overburdened with a shortage of providers to address the increasing needs of individuals, there is growing evidence of the promising impact of models that follow a lay health advisor/peer-support framework, such as the train-the-trainer model. Telemedicine has been shown to enhance other specialties through a collaborative physician-to-physician model and also by training other clinicians with much needed mental health expertise in an effective and efficient manner with little negative impact. Knowing this, using telemedicine as a mechanism for training peers and other paraprofessionals (in a train-the-trainer model) to address mental health needs, particularly for underserved populations, is an important area to further examine. With further research to identify, implement, and measure specific telemedicine strategies, there is great promise for telemedicine to enhance existing clinical services and also additional service options, via other professionals and paraprofessionals, to respond to the increasing demand to address mental health needs.

Though the empirical body of literature focused on telemedicine and non-physician providers is limited, the published works support the integration of non-physician providers to address significant mental health needs in rural areas. Turning to non-physician providers provides a solution to a long-standing shortage of psychiatrists in rural areas, using inexpensive and available modes of telemedicine delivery (i.e., telephones) to provide an effective service delivery solution based on a collaborative model that can also improve physician and patient satisfaction, in addition to increasing the availability of providers to respond to the great need for mental health care.

References


Topic 11: “Breast Cancer Screening for High-Risk Women”

Compare the effectiveness of film-screen or digital mammography alone and mammography plus magnetic resonance imaging (MRI) in community practice-based screening for breast cancer in high-risk women of different ages, risk factors, and race or ethnicity.

Introduction
Mammography is recommended as the best screening method for breast cancer in women ages 50 to 74. Randomized controlled trials that have shown the benefit of screening mammography have all used film mammography rather than digital mammography. For various reasons, film mammography is gradually being replaced with higher resolution digital mammography. Although studies show that digital mammography is more sensitive than film mammography at detecting breast lesions in younger women with very dense breast tissue, there is no evidence that this increased detection leads to a reduction in mortality from breast cancer. In fact, there is concern that digital mammography may detect fewer breast cancers among older women, who have a higher risk of breast cancer because of their age.

There are pros and cons of using digital mammography or magnetic resonance imaging (MRI) to screen women at high risk for breast cancer. Women at high risk include those with BRCA1 (breast cancer 1, early onset) or BRCA2 (breast cancer 2, early onset) mutations, or first-degree relatives of women with BRCA mutations. Some studies have found that for younger women at high risk of breast cancer (greater than a 20% lifetime risk of developing breast cancer), a combination of digital mammography and MRI can detect more breast cancers than either test alone. However, because MRI is so sensitive, it also detects far more lesions that are not cancer (false positives) than film mammography or digital mammography. A false positive would call for additional testing, but would not result in a cancer diagnosis.

Using more intensive methods of screening (such as every year versus every two years, or using MRI screening or digital rather than film mammography) results in more false positives and over-diagnosis of breast cancer. Over-diagnosis can result in being treated unnecessarily with the treatment causing harms of its own. Understanding the benefits and harms of film or digital mammography and MRI screening is important for women at high risk to make informed decisions regarding personal screening.

Burden on Society
Breast cancer is the most common cancer in women and the second leading cause of cancer death among women in the United States. In 2009, 211,731 women were diagnosed with breast cancer, and 40,676 died from the disease. Hereditary cancers, such as those from BRCA mutations, make up only 10% to 15% of all breast cancers, but women with hereditary cancers are at higher risk of cancer death.
Little data on disparities in women with hereditary breast cancers. Breast cancer incidence is higher for white women than for other ethnic groups and is thought to be due to higher screening rates and greater use of hormone replacement therapy. However, breast cancer mortality is highest for black women compared to any other racial/ethnic group. Other racial and ethnic groups have lower breast cancer incidence and mortality than white women and black women. For all stages of breast cancer, the five-year relative survival rate is lower for black women than other ethnic groups. These disparities may be due to differences in access to quality health care, existing comorbidities, and/or racial differences in tumor biology. In a group of Medicare beneficiaries studied from 1992 to 2002, there was little improvement in overall use of care or reducing racial disparities of cancer therapies among black patients.

Improved screening in recent years has led to a small reduction in breast cancer mortality overall, but advances in treatment have been at least as important in reducing mortality. In 2010, the prevalence of screening mammograms for white women and black women was almost equal (51.5% and 50.6%), but somewhat greater than for Hispanic women and Asian American women (46.5% and 47.7%).

**Options for Addressing the Issue**

Guidelines and recommendations for women at high risk of breast cancer (greater than 20% lifetime risk) have been developed based on observational studies, case series, and expert opinion. A 2008 systematic review of 11 prospective, nonrandomized studies included women with BRCA1 or BRCA2 mutations or a family history consistent with hereditary breast cancer who were screened with both annual MRI and mammography. The results strongly support the addition of MRI to mammography screening for detecting cancer among women at high risk. However, questions about screening interval and ages of enhanced screening require additional research.

MRI screening detects more breast cancers than either digital or film mammography at the expense of increased numbers of false positives. A review of seven prospective observational screening studies, including women at high risk of breast cancer, that used MRI in addition to mammography showed that screening MRI sensitivity is higher than mammography alone and detected almost all cancers in combination with mammography. MRI effectively detected cancers that were small and frequently node-negative. Across all seven studies, the sensitivity of MRI screening was 81% and, in combination with mammography, was increased to 92%. However, the number of false positive tests was also increased with MRI screening. No data could be found on survival as an endpoint, making it unclear whether there is a benefit to MRI screening.

For the smaller number of women with high risk of breast cancer (greater than 20% lifetime risk), some have suggested staggered or concurrent mammography and MRI screening. In a retrospective study of 73 patients with BRCA mutations who were screened alternately with mammography and MRI every six months, 12 of 13 cancers were detected by MRI, but not by mammography six months earlier. For these high-risk women, there are disadvantages to using MRI for screening. Compared to mammography, MRI is more expensive, involves an intravenous injection, requires more time, and has more people who cannot tolerate it. Screening with MRI has more false positives than mammography alone, leading to follow-up testing, patient anxiety, and the possibility of unnecessary biopsies and
New research could determine if cancers detected with MRI would have been detected later with mammography alone.

**Potential for New Information to Improve Care and Patient-Centered Outcomes Rapidly**

Determining if women at high risk for breast cancer are being identified early and appropriately screened would inform next steps. Public information and awareness about the characteristics of women who could be at high risk for breast cancer could further identify these women and increase rates of early screening.

Cost can be a major factor in a patient’s decision not only about screening but also treatment. Costs of screening and treatment are a major barrier for low-income women at high risk who do not have health insurance. Another concern for high-risk women is a lack of availability of MRI screening and MRI-guided biopsy in many communities. The ability to perform MRI-guided biopsy is essential to MRI screening because many small cancers will only be detected with MRI. 15

Longer term randomized trials or large cohort studies would help to determine benefits and harms of different screening methods so that high-risk women can make good decisions about when and how to get screened.

**References**


Topic 12: “Rural Trauma Care”

Compare the effectiveness of care delivery (e.g., local hospital care, trauma center care) on improving outcomes in patients living in rural communities who experience trauma.

Introduction
Rural populations and health care providers are less prepared to treat trauma. Roughly 62.5 million people (about 20% of the US population) live in rural areas. On average, rural populations have more older adults and children, higher unemployment and underemployment rates, and lower population density with higher percentages of poor, uninsured, and underinsured residents. Disparities in access to trauma care have been found in these vulnerable populations. Health services in rural areas can differ from urban areas on many dimensions including, longer travel distances (on average); fewer physicians per capita, including specialists required for comprehensive trauma care; health care facilities with limited scopes of service. While these factors do not uniformly mean that there is lower access to care compared to urban areas, they can make it more challenging to deliver trauma care in rural areas.

Access to advanced trauma care is lower in rural areas. Advanced trauma care is particularly lacking in rural areas. The American College of Surgeons Committee on Trauma (ACS-COT) has designated trauma centers into levels I-IV, with Level I or II trauma centers having the most comprehensive resources required to provide high-level trauma care, and Level I centers able to provide the highest level of care in addition to trauma education research and outreach. Trauma care at a Level I center has been shown to reduce risk of mortality in the severely injured by 25%. The most advanced trauma centers are not distributed evenly across the nation; approximately 45 million Americans do not live within one hour of the highest level of trauma care. There is a marked rural-urban disparity in access; at least 31% of rural residents are more than an hour from a Level I-III trauma center compared to only 12% of urban residents.

Burden on society
Risk factors for trauma are higher in rural areas. The characteristics of rural trauma suggest a higher injury severity due to injury mechanism and associated social and behavioral dynamics. For example, rural motor vehicular crashes are associated with increased driver speed and inappropriate use of protective devices such as helmets and seatbelts. In rural areas, there is also a higher prevalence of alcohol use while driving; a higher prevalence of loaded unlocked firearms at home; an increase in life-threatening/serious farm related-injuries due to exposure to agricultural machinery; and when injuries occur, there is the associated issue of prolonged discovery and extrication (period from discovery to treatment) times. As compared to trauma patients sustaining the same types of injuries treated in an urban or larger metropolitan hospital, rural hospitals have fewer resources (e.g., trauma surgeons, emergency physicians, sophisticated diagnostic radiology, and blood bank reserves).
Rural populations are more likely to die and have major disease burden from trauma. Trauma is the most common cause of death in people age 1-44, the third most common cause overall, and is one of the top 5 most costly conditions. While only 20% of our population reside in rural regions, more than 60% of the trauma deaths in America occur in these remote geographic segments of the country.

Rural patients are more likely to experience preventable deaths due to trauma for several reasons. Esposito et al found that the time for discovery of the injury and transport from the location of the trauma to the hospital is twice as long, on average, in rural locations as in urban areas. Because the first 60 minutes post-injury (the “golden hour”) substantially predicts health outcomes, delays in receiving treatment can lead to worse outcomes. Initial contact with a physician in the emergency room averaged six times longer in rural locations than in urban settings. As a result, the crude death rate in rural settings was three times that of the urban areas. One study found that a significant portion of deaths occurred not on the way to the hospital, but in a rural hospital’s emergency room. In other words, these victims managed to survive the distance to the hospital, but upon arrival, the hospital was unable to save them. The overall “possibly preventable” (as determined by the authors) death rate was double the urban rates in rural incidents. When stratified by phase of care, rate of possibly preventable death was three times greater for the emergency department phase in rural areas than in urban ones.

The burden of trauma continues after hospitalization. In 2000, injury accounted for $326 billion dollars in lost productivity alone in the United States. In addition, for the 1.7 million traumatic brain injuries that occur each year, a third result in death, and about 125,000 result in permanent damage and disability. Those who survive to discharge frequently need additional health care services such as home health, physical; occupational; and speech therapy, skilled nursing, and acute rehabilitation. Clinically appropriate courses of treatment for traumatic brain injury and many other traumatic injuries have demonstrated that these services are particularly important and should be assessed as part of clinical comparative effectiveness of treatment. However, research has determined rural patients are less likely to receive such comprehensive outpatient therapy services.

Options for addressing the issue
Rural trauma is a high-impact target for improving trauma outcomes. There are many components to this problem from a prehospital, perihospital, and post-acute care treatment that lend themselves to patient centered outcomes research. These include:

- injury prevention education,
- pre-hospital resuscitation and triage management,
- improved resource allocation at Critical Access Hospitals,
- more accessible trauma resuscitation and treatment education,
- consultation via telemedicine (for example: bridging workforce gaps by improving relationships with higher-level trauma centers via telemedicine),
- development of improved regional trauma systems and studying the improvement of care,
- addressing out-of-hospital patient death and disability, and
- evaluating rural disparities in
  - access to comprehensive trauma center care, and
  - access to some rehabilitation sources shown to improve patients’ functional status
In an attempt to decrease the impact of the limited resources available at rural hospitals, many states have organized their regional trauma systems to ease transfers of injured patients from non-trauma center hospitals to higher levels of care. Statewide regional trauma systems have demonstrated improvement in injury-related mortality as compared to states with less developed trauma systems.24 Currently, 9 states and districts lack a statewide trauma system, and of the remaining 42 states, only 24 have state-funded trauma systems.25

**Telemedicine may be a helpful resource.** Telemedicine is a strategy that has improved many aspects of medical care, including trauma in rural areas. It was initially found to be beneficial in the military as an aid in resuscitation.26 In a study conducted in rural Mississippi, telemedicine resulted in improved evaluation and management of trauma patients and more efficient and timely transfer of severely injured patients with decreased costs.27 Further, this technology may be expanded upon as tele-presence in trauma surgery—a remote trauma or specialist surgeon could be connected to the rural operating room with video of the injury to provide real time guidance in surgical decision making. Approaches like this could help address the relatively lower supply of surgical specialists in rural communities, which is a workforce issue with no immediate or quick solutions.

**Potential for new information to improve care and patient-centered outcomes rapidly**

There are many opportunities for study and rapid implementation of these improvements. Efforts to improve the maldistribution of surgeons and other trauma caregivers and limited access to resources could address the rural-urban divide in trauma outcomes. Study and implementation of the transfer arrangements from centers with fewer resources and the effect on survival are critical to determine if our current paradigm is effective in rural areas and ways to improve. The frequently preventable causes of rural trauma deaths suggest there is value in targeting research, policy, and providers to improve education, the delivery of preliminary trauma care, and in-hospital trauma care in rural environments, and ultimately, patient-centered outcomes.

**Trauma outcome data are rich and underused.** The ACS-COT has been integrally involved in standardizing and creating efficient trauma systems. *The Guideline for Field Triage* provides pre-hospital care providers with algorithms to recognize injured patients who are most likely to benefit from specialized trauma center resources.8 The Rural Trauma Team Development Course is designed to teach rural receiving facilities the fundamental elements of injury resuscitation, utilization of the available resources, and regional system relationships.28 The ACS-COT also serves as a verification committee to optimize trauma care in the United States and audits trauma center verification level as outlined in the Resources for Optimal Care of the Injured Patient.29 Trauma diagnosis, outcome, and hospital characteristic data are collected across trauma centers within the National Trauma Databank, which can be accessed for comparative effectiveness research.
References

2. Hsia R, Shen YC. Possible geographical barriers to trauma center access for vulnerable patients in 
6. American College of Surgeons Committee on Trauma. Resources for optimal care of the injured 
   2003;289(12):1515-1522.
9. Muelleman RL, Mueller K. Fatal motor vehicle crashes: variations of crash characteristics within rural 
11. Gonzalez RP, Cummings G, Mulekar M, Rodning CB. Increased mortality in rural vehicular trauma: 
17. Agency for Healthcare Research and Quality. Heart conditions, cancer, trauma-related disorders, 
    mental disorders, and asthma were the five most costly conditions in 1996 and 2006.  
21. Corso P, Finkelstein E, Miller T, Fiebelkorn I, Zaloshnja E. Incidence and lifetime costs of injuries in 
    department visits, hospitalizations, and deaths.  


Topic 13: “Complementary Medicine for Juvenile Cancer Patients”

Compare the effectiveness of complementary and alternative interventions on reducing symptoms related to treatment of childhood cancers in racial and ethnic minorities.

Introduction

This topic brief focuses on the comparative effectiveness of complementary and alternative medicine (CAM) to reduce symptoms related to conventional cancer treatment among children in racial and ethnic minority groups, ages 0 to 18 years, with any type of cancer. Conventional medical treatments for childhood cancers include chemotherapy and radiation. Common short-term treatment–related symptoms include, but are not limited to, nausea, diarrhea, hair loss, fatigue, skin and weight changes, kidney problems, and anxiety.

Information about the comparative effectiveness of CAM may help children with cancer and their caregivers make informed choices about options to reduce symptoms related to cancer treatment. It may also lead to improved outcomes that are important to children, their parents, and caregivers. In addition, increased knowledge about positive and negative interactions between CAM and conventional cancer therapies, as well as conventional treatments for symptoms, may foster communication between doctors and families about using CAM to reduce treatment-related symptoms.

Burden on Society

Childhood cancer incidence has increased but is lower among minority children. Although cancer in children is uncommon, data indicate an upward trend in the number of new cases (incidence) of childhood cancer. The incidence of childhood cancer increased from 11.5 cases per 100,000 children in 1975 to 14.8 per 100,000 in 2004. This trend continued with an annual increase of 0.6% in the number of new cases each year between 2005 and 2009. The American Cancer Society (ACS) projects that 11,630 new cases of childhood cancer among children ages 0 to 14 years will be diagnosed in 2013.

The most recent data we identified for childhood cancer incidence among racial and ethnic groups was SEER data collected from 1990 to 1995. These data show that black children had lower cancer incidence rates than white children during that time period. Hispanic and Asian/Pacific Islander children’s cancer

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10 The National Center for Complementary and Alternative Medicine (NCCAM) defines CAM as a group of diverse medical and healthcare systems, practices, and products that are not generally considered part of conventional medicine. Conventional medicine (also called Western or allopathic medicine) is medicine as practiced by holders of M.D. (medical doctor) and D.O. (doctor of osteopathic medicine) degrees and by allied health professionals, such as physical therapists, psychologists, and registered nurses. The boundaries between CAM and conventional medicine are not absolute, and specific CAM practices may, over time, become widely accepted. Subgroups of CAM therapies are (1) biologically based therapies (e.g., herbals, supplements, special diets); (2) mind-body therapies (e.g., mindfulness, hypnosis, guided imagery); (3) manipulative and body-based therapies (e.g., massage); (4) energy therapies (e.g., acupuncture and Reiki); and (5) alternative medicine systems (e.g., traditional Chinese medicine, Ayurveda, homeopathy).
incidence rates were between those for white children and black children. Incidence among American Indian children was the lowest.\(^6\) In January of 2009, the estimated number of children aged 0 to 19 years living with cancer was 363,000.\(^7\)

CAM is used by children with cancer. Herbal remedies, diets and nutrition, and faith-healing were the most commonly studied CAM in a recent systematic review on the prevalence of CAM use. Fewer studies in the review reported on the use of homeopathy, megavitamins, mind-body therapies, and massage. Seven studies included in the review evaluated the association between race/ethnicity and CAM use; however, the review authors did not synthesize the results from these studies.\(^8\) Estimates of CAM use among children with cancer vary widely, but most studies found that greater than 30% of children used CAM.\(^8,9\) A commonly reported reason for CAM use is to relieve adverse effects (such as nausea or pain) from cancer treatment.\(^8\)

Minority children may be less likely to use CAM. Data from the National Health Interview Survey, which was not limited to children with cancer, show that one in nine children use CAM. These data also show that CAM use is approximately two times more common among white children (12.8%) than black children (5.9%), and that non-Hispanic children (12.8%) are about 1.5 times as likely to use CAM as Hispanic children (7.9%).\(^10\) These data are not limited to children with cancer, and it is not clear if the same patterns of use apply to that group of children.

Options for Addressing the Issue

There is little evidence on the comparative effectiveness of CAM interventions among children with cancer. Likewise, there is little information about racial and ethnic differences around CAM use in pediatric cancer populations. Two recent systematic reviews identified by our searches took a comprehensive approach to investigating CAM use in childhood cancer. These reviews were not limited to a specific therapy or specific type of cancer and also did not clearly differentiate between use of CAM to treat cancer or to reduce symptoms related to cancer treatment. These reviews primarily reported descriptive results detailing how often and what type of CAM is used.\(^8,11\) Very few of the studies included in these reviews compared types of CAM with each other or with conventional symptom treatments, providing little evidence of the relative benefits or harms of CAM. We also identified one recent review that focused on specific symptoms and any type of CAM. This review considered CAM for the management of procedure-related pain, anxiety, and distress. Based on 32 studies, the authors concluded that hypnosis, distraction, and imagery are the three most common CAM therapies used to address pain, anxiety, and distress, and they may be effective when used alone or in conjunction with pharmacological therapies.\(^12\) However, the review did not address questions related to race and ethnicity.

We identified three systematic reviews that synthesized data on acupressure/acupuncture type therapies for reducing either post-operative or chemotherapy-induced nausea and vomiting. Two of these reviews\(^13,14\) focused on studies of acupressure to reduce post-operative nausea and vomiting, and each reported data from studies of pediatric populations, but the studies used in the analyses did not include or were not limited to children with cancer. The third review, which was focused on acupressure for reducing chemotherapy-induced nausea and vomiting, included at least one study of pediatric populations, but did not analyze data among children separately from adults.\(^15\) These reviews did not include results related to race and ethnicity.
Guidelines from the Society for Integrative Oncology set forth general recommendations for discussing the use and availability of CAM therapies with cancer patients, as well as recommendations about the use of specific CAM therapies. The guidelines present evidence for each recommendation; however, very little information about childhood cancers and pediatric cancer patients is included in the guidelines. We did not find any clinical practice guidelines specific to CAM use for children.

Based on available evidence, we cannot draw conclusions about the effectiveness of CAM on reducing symptoms related to treatment of childhood cancers. Nor can we draw conclusions about the presence of disparities between racial and ethnic groups in (1) the incidence of symptoms related to childhood cancer treatment or (2) the use of or effectiveness of CAM therapies for relieving symptoms related to cancer treatment among groups.

Directly applicable research on the use of CAM in pediatric cancer populations is lacking. In 2006, one study noted that approximately 900 reports of clinical trials using a CAM intervention for children were found. However, most studies of CAM among cancer patients do not include children. Data from adult studies are not always applicable to pediatric populations; children may have different experiences than adults with side effects and drug interactions. Research that is directly applicable; describes or addresses differences, if any, among racial and ethnic minorities; and can be used to guide the use of CAM in pediatric cancer patients is lacking. Future work would likely require collecting new information over time.

The National Cancer Institute (NCI) states that improvements in overall childhood cancer survival mean that researchers, patients, parents, and healthcare providers are focusing more on reducing the burden of cancer and its treatment. In 1998, NCI established the Office of Cancer Complementary and Alternative Medicine, and several studies listed on its website are focused on pediatric populations, suggesting momentum in this area. It is not clear if any of the ongoing studies will address questions of racial and ethnic disparities or explore issues of access related to socioeconomic status.

Ongoing and future research that resolves questions about potential disparities and the comparative effectiveness of CAM may lead to more informed choices about options for reducing symptoms related to cancer treatment. High-quality evidence about positive and negative interactions between CAM and conventional cancer therapies may foster communication between doctors and families about the use of CAM.

Potential for New Information to Improve Care and Patient-Centered Outcomes Rapidly

Evidence regarding disparities, efficacy, and patient preferences is a necessary foundation for future research. Because pediatric cancer patients are already using CAM, healthcare providers, patients, and parents need access to reliable information about the comparative benefits and harms of CAM therapies. Available evidence is likely to be adapted and applied quickly if it is broadly disseminated, given the small number of providers treating these children. However, there are some barriers to the implementation of integrating CAM with conventional cancer treatment. Parents and healthcare providers may need training in order to deliver and apply some therapies. Also, clinical practice guidelines and standardization for some CAM therapies are lacking. Access to CAM may be limited to those who can afford to pay for them and who live where CAM resources and services are available.
Research to lessen disparities in the use or benefit of CAM in this population should be considered only after there is documentation that shows disparities exist. This research should also be preceded by evidence that CAM interventions perform better than or as well as conventional medical treatments or evidence showing that patients prefer them even if they do not work quite as well. Comparative effectiveness of and interactions between CAM therapies and conventional treatments may need to be updated as advancements are made in conventional cancer and supportive treatments.

References


