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Issue Brief

Colocating Health Services: A Way to Improve Coordination of Children's Health Care?

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ABSTRACT: Pediatric practices are faced with a growing demand that they address the healthy development of their patients. As pediatric practices strengthen their role as medical homes for their patients, they need either to provide expanded services or enhance their capacity to coordinate that care. One option for enhancing the existing capacity of pediatric practices is colocation with other providers and services in the same setting. This issue brief examines what is currently known about the use of colocation and its benefits. The literature and interviews used as information resources for the brief suggest that colocation of services is not a single strategy but rather a complex set of relationships, organizational structures, and other features meant to help practices deliver effective care. However, more thorough examination of current colocation approaches is needed before advice can be provided to practices considering this option.

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OVERVIEW

Pediatric practices are facing increased demands to address more fully the myriad requirements of children and their families. These requirements include: assessing and addressing the developmental and behavioral needs of children; treating chronic conditions, obesity, and substance abuse; and helping families navigate the complex and fragmented health care delivery system to obtain services. In order to meet such varied and complex needs, a number of leaders in health care have advanced the "medical home" model of primary care to optimize the coordination of patient services, among other functions. The medical home model has been a focal point for guidance from the American Academy of Pediatrics (AAP),[1] from newly developed accreditation standards by the National Committee for Quality Assurance, and from the Commonwealth Fund's vision of a high-performing well-child system of care.[2]

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To become a medical home, many pediatric practices have instituted structural and procedural changes that would help them provide and coordinate the range of services children and their families need. Among those changes are links with other practitioners and services, and one way of creating such links is through colocation. Despite anecdotal evidence that colocation is a growing phenomenon, it is one of the least explored of several approaches to care coordination. Currently, there is limited information describing the extent to which services are colocated; which services are likely to be colocated; what the various models of colocation are; and what the issues, benefits, and costs of colocation are to both providers and patients. This issue brief explores what is currently known about colocation through a systematic search of the literature and interviews with key stakeholders (see box on page 9 for complete methodology).

DEVELOPING A FRAMEWORK FOR EXAMINING COLOCATION STRATEGIES

Colocation refers to strategies that place multiple services in the *same physical space.* The basic premise underlying colocation is that physical proximity will enhance the outcome of services to the target population. This premise is reflected in the long history of "one-stop-shopping" service models that were strongly supported in 1960s public-sector programs meant to ensure better access to services for persons living in poverty. The one-stop-shopping tradition has continued in the health arena, supported by a number of federal programs and other publicly supported initiatives, which include Federally Qualified Health Centers (FQHCs), rural health projects, and projects targeting special populations such as persons with HIV/AIDS, mental illness, or substance-abuse problems. In the private sector, there has been growing emphasis on colocating services in primary care settings to address the multiple needs of those patients, including their needs for access to a complex and fragmented health care system and for a medical home.

Colocation can be set up in several ways:

- As a service–provider partnership involving "a physical link between the pediatric practice and one or more other community services" (this is colocation at the low end of a continuum of service integration strategies).[3]
- As a staffing/personnel strategy, which can ensure coordination of care.[4]
- As part of a continuum of care coordination strategies that range from colocation to collaboration to integration.[5]

Colocation therefore cannot be considered a unitary concept. Two related considerations must be taken into account: 1) which approaches within the practice will improve services to the child and his or her family and 2) what the level of their integration should be. How these considerations have been addressed in practice varies widely and, therefore, so do the objectives they have achieved. The following four dimensions are posited as an aid in examining the range of approaches used and the level of their integration in colocated practices:[6]

- ***Organizational characteristics.*** Colocation can involve business arrangements among providers, including the use of contracts, interagency agreements, and administrative and financial services such as intake, support and other staff, billing, and appointment scheduling.
- ***Responsibility for patients.*** When services are colocated, providers may have different perspectives on the extent to which care is collaborative, responsibility should be shared, and the patient is considered "our" patient.[7] In cases where collaboration is looser, providers may have the sense that they are helping the others with "their" patient.
- ***Coordination mechanisms.*** Coordination mechanisms can range from informal to formal and reflect varying levels of patient care and communication among providers. The

mechanisms may vary in referral procedures, use of common case managers or care coordinators, consultations, joint case reviews, and concurrent treatments. Examples of highly coordinated approaches can be found in recent reviews of collaborative practices by the AAP and reports of interprofessional practices in other countries.[8]

- ***Data systems and policies.*** Colocated practices vary in their policies regarding shared data and in the systems used to support those policies. In the least-integrated examples of colocation, there is no sharing of data on a formal basis, while in the most-integrated examples there is (such sharing may or may not entail a common case record). Other formal approaches include maintaining separate systems but allowing providers access to one another's records, use of detailed referral forms, and the keeping of separate but common records. As will be discussed below, privacy and confidentiality issues related to these approaches sometimes raise barriers to good management.

In sum, the continuum of colocation strategies ranges from the simple physical sharing of space to arrangements that have many of the features of multispecialty practices. Strategies at the more integrated end of the colocation continuum are likely to be highly collaborative and supported by mechanisms and procedures that enhance collaboration while maintaining discrete organizations. The details of the continuum of colocation strategies, as they continue to be developed and explored, can provide a framework for further study.[9] Where possible, the rest of this issue brief will use aspects of this framework to describe and discuss what is known about the strategies and their results.

FINDINGS

The ability of researchers to synthesize findings about colocation, particularly findings related to health outcomes, is hampered by a lack of a common definition for colocation as well as definitions for selected examples. Much of the difficulty with definitions stems from the above-mentioned fact that the characteristics of colocated practices vary considerably, especially in terms of the level of integration of the providers involved. Here we explore the types of services that have colocated with pediatric practices, the objectives of efforts to colocate and approaches used to achieve them, the benefits of colocation, and the barriers and implementation issues associated with different colocation strategies.

Examples of Colocated Services

The types of services that are likely to be colocated with pediatric practices differ, but the most frequently mentioned ones are those related to mental health and childhood development. The frequency of their inclusion is probably due in part to the increasing emphasis in the pediatric field on healthy development and behavioral issues, as well as the availability of support for such services. Other providers and services found to colocate with pediatric practices include public programs such as the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) and other nutrition services, plus welfare-related programs including ones involving food stamps, eligibility workers, child welfare, family planning, and social-service agencies. However, these services are more likely to be found in FQHCs and larger practices than in colocated pediatric practices.[10]

Other colocation entities mentioned in the literature were perinatal services that colocated with WIC and pediatric specialty practices (such as those focused on children with special needs and chronic conditions) that colocated with other medical specialties serving those special populations. Often, public-sector services are colocated by placing staff members such as public-health nurses and eligibility workers in the practice site.[11]

The Variety of Approaches to Colocation

Colocation strategies vary according to the objectives they are designed to achieve and the approaches used to achieve those objectives. Such objectives reflect a

number of the characteristics of a quality-care system as posited by the Institute of Medicine. They include reduction of barriers to care (should be timely); improvement of the coordination of services provided (should be personalized, efficient, and effective); improvement of the provision of services (should be efficient); and enhancement of the quality of care provided (should be effective).[12]

The following exhibit provides examples of the array of approaches that can be used to achieve different objectives within the context of a colocated practice. These approaches may also be used in settings that do *not* colocate, but it is assumed that colocation contributes to the ease of their implementation. Evidence to support this view will be discussed later in the brief.

The approaches identified above also speak to the broader confusion of concepts found in the literature, where terms like care coordination, integrated care coordination, collaboration, collaborative practice, multidisciplinary teams, and integrated services may not be adequately defined, often overlap, or are used interchangeably.

Benefits of Colocation

The benefits associated with colocation fall into three categories: patient, provider, and quality of care. The physical proximity of services and providers in colocated practices appears to provide the basis for some of the benefits discussed, including improved access for patients and greater opportunities for providers to interact and perhaps improve their skills and service to patients. However, the reported benefits often result from more than the sharing of space, since they reflect specific strategies that colocated practices use to improve coordination of care.

A variety of benefits of colocation are identified in the literature. It should be noted that in many cases the reported benefits are based on providers' perceptions, with very limited direct input from patients. Many of the discussions of benefits offer only limited empirical information about costs and impacts of services. Inconsistencies in the benefits described are likely attributable to the differences in colocation strategies and their effect on the levels of integration and coordination in practices. The variety of possible benefits is summarized in Exhibit 2.

Exhibit 1. Approaches to Achieving Colocation Objectives

Objective	Approaches
Improved coordination of care	Care coordinators Referrals Linkages Follow-ups Expanded communication (e.g., telephone-based consultation and use of video) Shared or linked data/patient records
Improved efficiency of services	Common/shared services such as intake, data bases, eligibility, billing, finance, and other administrative functions Shared or linked data/patient records
Improved quality of care	Collaborative practices Cross-discipline problem-solving Case conferences Team approaches Interdisciplinary training Common quality assurance protocols

A number of studies that reviewed multiple examples of colocation in adult and pediatric primary care settings were able to identify common themes and to synthesize findings across a number of settings.[14] In a few cases, no benefits were found,[15] but for the most part the studies highlighted benefits of colocation, including:

- Colocation generally leads to greater access to care and more patient/family satisfaction because services are provided in a setting familiar to patients. Colocation was more likely to provide such patient benefits than decentralized models that used case management and other linking strategies.
- The interprofessional relationships and collaboration resulting from colocation, and the subsequent increase in knowledge and comfort levels that providers gain in addressing patient issues outside their training, increased provider satisfaction. On the other hand, interprofessional issues arose, including disagreements among providers about the specifics of patients' problems and treatments or interventions they thought appropriate.
- Colocation contributes to more appropriate use of health services and improved clinical outcomes.[16] According to some reports, former high utilizers make less use of services when primary care and mental health services are colocated. This can be attributed to the ability of the combined services to address and treat underlying problems that often contributed to the higher utilization.[17] One study looked at managed care sites where WIC services were colocated and found better health results, including higher immunization rates and infants more likely to have age-appropriate weights.[18]

Implementation Issues and Barriers

Colocating services within an existing practice by definition requires some structural change in organization and a shift in the roles of the pediatrician and other staff. In making such changes, providers often encounter barriers and issues that need to be addressed. One issue is the optimum size of a given practice, and another the question of whether or not there is sufficient patient volume to support the additional services. Once the decision to colocate is made, a number of other implementation issues and barriers arise that

Exhibit 2. Benefits of Colocation[13]

Patient benefits	Improved access to services for patients (especially important for "stigmatized" services)
	Increased satisfaction of patients
	Greater acceptance by patients of referral to mental health services
Provider benefits	Increased communication with other colocated providers
	Increased knowledge and comfort on the part of pediatricians in addressing issues outside the scope of their normal practice
	Increased knowledge and comfort on the part of other providers regarding pediatric issues
	Increased satisfaction of all providers
Quality-of-care-related benefits	Increased collaboration among providers and better coordination of care
	Improved referrals (appropriate, timely, and with higher completion rates)
	Support of developing systems of care
	Increased efficiency
	Improved health outcomes

affect the design and implementation of any chosen colocation strategy.

Organizational considerations. Implementation of the colocation option requires consideration of how practices and services will be linked, what organizational arrangements (including financial relationships) should be developed, and which incentives and other mechanisms would best support the related entities. Several models have been suggested for colocating services with differing organizational needs. Where practices or services are simply located under the same roof, very few formal arrangements may be required, especially if each entity has its own relationship (e.g., a lease) with the physical facility. Where the colocation efforts are more involved, formal as well as informal arrangements may be necessary. The arrangements can be more or less specific and quite detailed, especially when the relationships among providers reflect a comparatively integrated situation. In the literature, issues were raised about practices having difficulties in dealing with public entities that may have more complex decision-making processes than private ones and be subject to greater regulation.

Space. Space appears to be a very important issue for practices looking to colocate with other providers and/or services. Colocators need to consider both the actual amount of physical space required and the ways in which the space may be structured appropriately. For example, configurations featuring common shared spaces such as lunch rooms or lounges, provide opportunities for informal contacts that can enhance professional relationships.

Staffing. Staffing arrangements differ depending on how the practices and services are integrated. In some cases, practices may employ individuals or contract for their services; in other cases, there is no formal staff relationship across the services. When public programs colocate staff, arrangements are usually made by "out-stationing" an individual employee, which means the individual continues to be employed by the public organization but his or her work site is the practice setting. The nature of the staffing arrangements could have a major influence on professional relationships among the practitioners, as well as implications for other aspects of their practices (see the data issue discussed below). Regardless of the relationships among staff, there are still other implementation issues that reflect differences in their professions, orientations, and training. They may need to define their roles, develop a common language, and agree on approaches to sharing patient information and data.

Financial issues. Financial questions needing to be addressed include how the initial colocation efforts will be funded and how ongoing services will be sustained over time. There are many examples of pediatric practices with colocated services getting initial support from foundations and other grantors but not being funded beyond the grant. There are also examples of practices that are part of a larger health care system that provides them with initial support and/or longer-term support. In addition, sustaining a colocated practice could depend upon the practitioners' ability to bill sufficiently for services or to find supplemental funding.

In colocated situations, several problems can develop related to billing and reimbursement. The problems involve the different reimbursement policies of public and private payors, the adequacy of billing rates, and the ability of practices to charge appropriately for services. The major constraint appears to be Medicaid and private-insurance limitations on billing for more than a single service on a given day, which can diminish the benefits of having multiple services at one site and permitting same-day appointments. Other Medicaid policy issues to consider are how to bill for screening and assessment services and for coordination functions; what approaches should be used in implementing services under the Early and Periodic Screening, Diagnosis and Treatment program; whether or not mental health services can be provided without a diagnosis (as permitted in North Carolina), and how to code services for billing purposes. Medicaid issues vary by state, but in some cases they reflect the need to clarify policies and/or address misperceptions rather than change the policies.[19] Efforts have been made to give child health care practices

guidance on how to bill for professional services in colocated settings.[20]

Coordination/collaboration considerations. Much has been written about the use of mechanisms and processes meant to encourage coordination and collaboration in colocated practices, as well as about the implementation issues associated with them. (Exhibit 1 identifies a broad range of approaches for improving such coordination and collaboration.) The large body of literature on the subject mentions, among other things, the growing attention given by pediatricians and other professionals to the specifics of collaborative care. In particular, the AAP is exploring collaborative care as a possible important tool for implementing its Bright Futures initiative, especially in its work with mental-health practitioners and others interested in addressing prevention strategies.

Once coordination mechanisms are selected, their implementation brings up questions of what roles the providers will play and which approaches will be used for data and other information support. For example, sharing medical records means that informed consent should reflect the facts that more than one provider will have access to patient information and the data system will have multiple users. In addition, effective use of the shared record requires a common understanding of terms as well as the "rules" regarding timeliness of data entry. There may also be a need for providers to talk with each other to supplement written entries in the record. Where there is shared responsibility for a patient, use of mechanisms like case conferencing may be necessary for providers to develop treatment plans and ensure that care is coordinated and interventions complement each other. Other issues may surface, including the need for infrastructure supports and for reimbursement and financing services that expand the usual billable practices.

Several studies have examined the interprofessional issues that emerge from colocators' differences in practice styles, cultures, philosophies, and approaches. If such differences are not addressed directly, they could create major barriers to effective care and communication. For example, in several studies where medical professionals and social workers are colocated, issues arose concerning differences in status between these two groups of providers as well as their different perspectives on what working together means. In those studies, social workers reported that physicians did not understand their role, and the physicians, while they appreciated the efforts of the social workers, wanted them to fit into their own existing practices rather than making changes themselves to accommodate the social workers' services. When compared, social workers were less supportive of colocation efforts than physicians. In one reported case, community nurses had to mediate misunderstandings between the two provider groups.[21]

As these studies show, colocated providers need to have clearly defined roles and be encouraged to communicate with other providers. There must be agreement about who is responsible for patients: in some models, the pediatrician has primary responsibility, while in others, the responsibility is a joint one, with each provider having responsibility within the context of the patient services it provides. Examination of the models has been limited, however. In addition, little has been reported about the impact of colocation on the patients and their relationship to providers.

Sharing data: confidentiality/privacy issues. Colocated practices use a variety of approaches to sharing information about patients they have in common, ranging from informal discussions to keeping common medical records. In situations where the colocated providers become employees of a pediatric practice or clinic, issues of confidentiality and privacy are minimized. But in other situations, policies and procedures need to be put in place so providers can adhere to Health Insurance Portability and Accountability Act (HIPAA) regulations as well as to all other privacy and confidentiality requirements, including informed consent.

CONCLUSIONS AND IMPLICATIONS

Colocation of services in a single setting can enhance a pediatric practice's ability to meet the multiple needs of its patients by improving access to services, coordinating those services, and improving the individual practitioners' understanding and skills in relation to the other professionals with whom they colocate. However, it is likely that the degree to which a colocated practice succeeds in meeting its patients' needs is determined largely by the way the colocation strategy is designed and implemented. Since different levels of integration are found in colocated practices, and those practices use different mechanisms for coordination of care, it is not always clear what accounts for the successes.

A more thorough understanding of different colocation strategies, covering a variety of providers and approaches to the coordination of patient care, would help practices that colocate in the future adopt the most effective strategies. As the belief that care coordination is essential to the medical-home role of pediatric practices continues to expand, knowledge of what is effective and what is not becomes increasingly important.[22] Also important are comparisons between colocation and other strategies that are meant to achieve the same objectives. These other strategies include coordination mechanisms that do not involve physical colocation but achieve improvements in communication, referrals, and coordinated care through such approaches as case conferences, care coordinators, and common records. While it may be easier to improve patient care within a common setting, current technology provides stronger support than in the past across different physical settings.

With colocation, there may be other benefits for both the patient and the providers from the physical proximity of providers. As cited earlier, the literature identifies some of the following as hypothesized and/or documented benefits. For patients, access may be improved if same-day appointments at the same physical location are permitted. Where the colocated providers are mental health services, there is a lessening of stigma and an increased "comfort" when a member of the pediatric staff walks down the hall with the patient. For providers, face-to-face contact may enhance communication with one another, increase the understanding and knowledge of each other's expertise, and facilitate patient referrals.

The emphasis of this brief has been on services colocated within pediatric practices. It does not address colocation in which pediatric services are colocated in other settings or technology is used to support "virtual" coordination of services not physically colocated. Other colocation approaches include family resource centers as one-stop-shopping entities (a growing phenomenon)[23] and school-based health centers for children in elementary, middle, and high schools.[24] There is anecdotal information from experiences in FQHCs that may provide insights into how to set up colocated services within larger clinical settings. Examining these experiences in greater detail might be warranted.

Technological advances raise the question of whether services need to be in the same physical location or not. The advances include the use of electronic resource lists, electronic support for referral and followup, electronic health records, and videoconferencing services for cases. Often these approaches can help practices and providers in separate locations to coordinate care and obtain expert consultation for patients.

Addressing the need to improve the quality of health care in this country, the Institute of Medicine's (IOM) seminal work, *Crossing the Quality Chasm*, identified a number of challenges for "redesign imperatives." The challenge of coordinating care across sites, identified by the IOM, may be met directly by colocating services within pediatric practices. But other approaches to improving care, including the reengineering of the care process, the effective use of information technologies, the management of providers' knowledge and skills, and the development of effective teams are clearly issues that must be addressed within any colocation environment.

Colocation appears to be an approach that pediatric practices should consider as they examine how best to meet the challenges of creating a medical

home for their patients. Developmental and behavioral service providers are among the main health professionals currently being colocated with pediatric practices. Pediatric practices have more limited experience with other services, including those provided by public programs, which often require larger patient populations to support them. In making their decisions about colocation, each pediatric practice will need to assess the costs and benefits of the change as well as the preferences of patients and their families. Existing community resources and the overall delivery system of services for children are important factors to consider in determining whether colocation or some other coordination strategies are appropriate.

Future decisions regarding colocation may also be influenced by expanded efforts on the part of states and other payors to support medical homes through enhanced reimbursement, as well as by ongoing efforts to create high-performing systems of care. How these expanded efforts and support for the "added" services and costs of creating medical homes will take into account the collocation option needs to be examined.

A more systematic exploration of a range of colocation approaches and care-coordination experiences could provide further pragmatic advice for pediatric practices that are making colocation decisions and developing coordination mechanisms. The exploration would consider some of the following questions:

- When is colocation an effective strategy?
- Which services should be included in it?
- What are the factors to consider in applying different practice models to colocation?
- What are the implications of colocation for different populations (such as young children and adolescents) and areas (urban versus rural) and practices (small and large)?
- What are the costs and benefits of colocation?
- What are the barriers, such as financing and provider attitudes, that need to be addressed in the future?

About This Study

This issue brief was based on an extensive literature review and interviews with selected key stakeholders. For the literature review, the author used both PubMed and Google Scholar to identify care coordination studies with a focus on colocation. Those articles were then reviewed for specific colocation strategies used in pediatric primary care settings, as well as strategies with potential application to those settings. The articles reviewed fell into two major categories: 1) descriptions of colocation, including conceptual discussions and related concepts such as collaboration, care coordination, integrated services; and 2) studies of colocation. A large portion of the literature focused on colocation of behavioral health services and, in the child literature, on developmental services, although other services were also identified. The literature reviewed reflects experiences and research from other countries, especially Australia, the United Kingdom, and Sweden.

The interviews focused on two areas: 1) expanding on the concept of colocation, what colocation strategies or approaches mean in the context of supporting pediatric practice, issues of implementation, and the benefits and barriers posed; and 2) discussion of specific experiences with colocation efforts to better inform the findings from the literature.

NOTES

[1] AAP periodically releases recommendations and anticipatory guidance to pediatricians. Over the past years, these have greatly expanded the role of pediatricians as the medical home for children and in areas such as developmental services. The AAP Bright Futures for Children Web site, www.brightfutures.aap.org, provides linkages to the various recommendations and guidances that have been issued, and the general AAP Web site,www.aap.org, is an excellent source of information. The Pediatric Implementation Project was designed to foster multidisciplinary and collaborative approaches and the National Center for Medical Home Initiatives, www.medicalhomeinfo.org, supports a variety of efforts, including the dissemination of information to assist practices develop new approaches. Various other initiatives have and are supporting further exploration of collaborative practice, including the IMPACT project supported by the Health Resources and Services Administration that supports various approaches to linking mental health services with primary care and work by the Committee on Community Health Services.

[2] D. Bergman, P. Plsek, and M. Saunders, *A High-Performing System for Well-Child Care: A Vision for the Future* (New York: The Commonwealth Fund, Oct. 2006).

[3] J. J. Cocozza, H. J. Steadman, D. L. Dennis et al., "Successful Systems Integration Strategies: The ACCESS Program for Persons Who Are Homeless and Mentally Ill," *Administration and Policy in Mental Health*, July 2000 27(6):395–407.

[4] B. Hudson, *Inter-professionality and Partnership: An Obstacle to Integrated Care? An Exploratory Study of Professional Preferences,* (Nuffield Institute for Health, Dec. 2001). G. E. Edwall, C. Shevlin-Woodcock, and S. Thorson, "Integrating Public Health, Mental Health, and Special Education Perspectives to Address the Mental Health Needs of CYSHCN," *Healthy Generations* (University of Minnesota newsletter), Oct. 2004 5(2):1–2.

[5] T. Stancin, "Mental Health Services for Children in Pediatric Primary Care Settings," in *Handbook of Mental Health Services for Children, Adolescents, and Families* (Springer US, 2005), pp. 85–101.

[6] The Center for Medical Home Improvement, www.medicalhomeimprovement.org, developed the medical-home index as a tool to measure practices along a validated set of domains and provide the base for quality improvement. These domains include Organizational Capacity, Care Coordination, Data Management, Quality Improvement/Change, Community Outreach, and Chronic Condition Management. While not all domains are relevant to examining colocation, many are (although different measures might need to change). The medical home index provides a way of thinking about a framework for colocation that might help address the same quality-improvement support that the current index does.

[7] J. J. Fickel, L. E. Parker, E. M. Yano et al., "Primary Care–Mental Health Collaboration: An Example of Assessing Usual Practice and Potential Barriers," *Journal of Interprofessional Care*, March 2007 21(2):207–16. J. Ford, K. Steinberg, A. Pidano et al., *Behavioral Health Services in Pediatric Primary Care: Meeting the Needs in Connecticut* (Farmington, Conn.: Child Health and Development Institute of Connecticut, 2006).

[8] C. L. Jackson, C. Nicholson, M. Tweeddale, et al., "Creating an Integrated Vision by Collocating Health Organizations: Herding Cats or Meeting of Minds?" *Australian Health Review?* May 2007 31(2):256–66; S. Golnar, D. Rabin, M. Schmitt et al., "Interprofessional Health Care Practice: Recommendations of the National Academies of Practice; Health Care in the 21st Century," *Issues in Interdisciplinary Care: National Academies of Practice Forum*, 2001 3(1):5–19; J. Pirkis, G. Blashki, N. Headey et al., *Evaluating the Access to Allied Health Services Component of the Better Outcomes in Mental Health Care Initiative: First Interim Evaluation Report* (University of Melbourne Evaluation Unit, Dec. 2003); and private communication with Frances Rushton, M.D.

[9] There is no agreed-upon continuum of integration, although much is written about it, including in Stephen M. Shortell's work on clinical and functional integration, with the former defined as "the extent to which patient care services are coordinated across people, functions, activities, and sites over time." Shortell's works identify various dimensions of integration, which helped define the four identified in this issue brief (see S. M. Mitchell, and S. M. Shortell, "The Governance and Management of Effective Community Health Partnerships: A Typology for Research, Policy and Practice," *Milbank Quarterly,* 2000 78(2):241–89; and S. M. Shortell and A. D. Kaluzny, eds., *Health Care Management* (Albany, NY: Delmar Thomson Learning, 2000).

[10] Substance abuse services, usually for adults but in some cases for adolescents, are another kind of service often colocated with primary care.

[11] A. Fine and R. Mayer, *Beyond Referral: Pediatric Care Linkages to Improve Developmental Health* (New York: The Commonwealth Fund, Dec. 2006).

[12] Institute of Medicine, *Crossing the Quality Chasm: A New Health System for the Twenty-first Century* (Washington, D.C.: National Academies Press, March 2001).

[13] This list was assembled by reviewing a large number of studies and articles on colocation. In addition, testimonials from various colocation efforts are cited in Fine and Mayer (op.cit.) and provide specific examples of the benefits as viewed by the providers interviewed.

[14] These studies include A. Blount, "Introduction to Integrated Primary Care," in A. Blount, ed., *Integrated Primary Care*: *The Future of Medical and Mental Health Collaboration* (New York: W. W. Norton, 1998), pp. 1–43; G. Sullivan, D. Kanouse, A. S. Young et al., "Co-location of Health Care for Adults with Serious Mental Illness and HIV Infection," *Community Mental Health Journal*, Aug. 2006 42(4):345–61; Jackson, op. cit.; S. Kisely, D. Duerden, S. Shaddick et al., "Collaboration Between Primary Care and Psychiatric Services: Does It Help Family Physicians?," *Canadian Family Physician,* July 2006 52:876–77; G. P. Davies, M. Harris, M. Roland et al., *Coordination of Care Within Primary Health Care and with Other Sectors: A Systematic Review* (Australian Primary Health Care Research Institute, Sept. 2006).

[15] G. Sullivan, "Mental Health Services for Children in Pediatric Primary Care Settings," in *Handbook of Mental Health Services for Children, Adolescents, and Families* (Springer US, 2005), pp. 85–101; J. Williams, S. E. Shore, and J. M. Foy, "Co-location of Mental Health Professionals in Primary Care Settings: Three North Carolina Models," *Clinical Pediatrics.* July 2006 45(6):537–43.

[16] G. P. Davies, op.cit.

[17] A. Williams, B. Waddell, M. Shannon et al., "Using Family Resource Centers to Support California's Young Children and Their Families," in N. Halfon, E. Shulman, and M. Hochstein, eds., *Building Community Systems for Young Children* (UCLA Center for Healthier Children, Families and Communities, 2001).

[18] A. P. Kendal, A. Peterson, C. Manning et al., "Improving the Health of Infants on Medicaid by Colocating Special Supplemental Nutrition Clinics with Managed Care Provider Sites," *American Journal of Public Health,* March 2002 92(3):399–403.

[19] P. J. Chung, T. C. Lee, J. L. Morrison et al., "Preventive Care for Children in the United States: Quality and Barriers," *Annual Review of Public Health,* Apr. 2006 27:491–515.

[20] For example, the AAP sponsored a webcast by Mark Harris of Vermont to help practices learn to bill appropriately.

[21] A. Cameron and R. Lart, "Factors Promoting and Obstacles Hindering Joint Working: A Systematic Review of the Research Evidence," *Journal of Integrated Care*, 2003 1(2):9–17.

[22] J. W. McAllister, E. Presler, and W. C. Cooley, "Practice-Based Care Coordination: A Medical Home Essential," *Pediatrics*, Sept. 2007 120(3):e723–e733.

[23] A. Williams, op.cit.

[24] A number of references are available on the Web site of the National Assembly on School-Based Health Care, www.nasbhc.org.

About the Author

Susanna Ginsburg is president of SG Associates Consulting, providing strategic management consulting, evaluation, and policy analysis services to a wide range of public and private sector clients. She has conducted a number of projects for the Maternal and Child Health Bureau, various California county First Five efforts, and foundations engaged in addressing issues of women and children. Previously she was managing vice president for health services research and evaluation at Abt Associates and vice president, public policy, at The Lewin Group. Her work has emphasized issues related to women and children's health including program interventions, financing, and organization/delivery of services. Ms. Ginsburg holds an undergraduate degree in social sciences from Michigan State University and a Master of Social Work from the University of Michigan, and she has completed doctoral work at Brandeis University's Heller School for Social Policy and Management.

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