

A Block Rotation in Community Pediatrics

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ABSTRACT. Objectives. To develop, implement, and evaluate a 1-month block rotation in community pediatrics.

Interventions. Faculty from University of California San Diego and Naval Medical Center San Diego developed a combined and integrated curriculum for second-year residents in community pediatrics. Resident activities included structured site visits to schools, day care centers, and community organizations that participate in child health promotion, advocacy, public health, and prevention activities. Resident school consultation and child advocacy projects were established and mentored during the block rotation.

Evaluation. Formative evaluation of the program by residents was used to shape the program design. Residents' self-perceived competence in eight areas of community pediatrics was measured with questionnaires administered before and after completion of the rotation. Resident involvement in school consultation and child advocacy projects was assessed in a cross-sectional survey.

Results. Twenty-three residents completed the rotation during the 1-year study period. Statistically significant improvements in self-perceived competence were noted in all eight areas of community pediatrics. Among residents who were at least 3 months beyond the rotation completion date, 55% (11/20) reported continued involvement with their school consultation or child advocacy project, and 25% (5/20) reported this involvement to be on a quarterly to monthly basis.

Conclusions. Two institutions successfully implemented and integrated a block rotation in community pediatrics. Positive short-term improvements were noted in resident self-perceived competence in community pediatrics. *Pediatrics* 1999;104:143-147; *block rotation, community pediatrics.*

ABBREVIATIONS. WIC, Women Infants and Children Program; RRC, Residency Review Committee; Ambulatory Pediatric Association; UCSD, University of California San Diego; NMCSD, Naval Medical Center San Diego; FTE, full-time equivalent.

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Over the past 2 decades, pediatric educators have advocated for increased community-based residency training.¹⁻³ Most pediatricians work in outpatient community settings, and patient interactions rarely result in hospitalization. Traditional pediatric residency training, in sharp contrast, occurs in hospital settings, with an inpatient emphasis.⁴ The community-based setting provides exposure to patients with diagnoses that differ significantly from those encountered in hospital-based clinics,^{5,6} complexities of managed care, and general pediatrician role models. Pediatric residency graduates have consistently identified the need to have more education in school health, child advocacy, behavioral pediatrics, and accessing community resources.⁶⁻⁸

Many institutions have shifted toward community-based clinical settings^{5,9} for continuity clinics and other primary care educational activities. However, important aspects of child health and development may not be emphasized, even in these community-based clinical settings. For example, residents may not be aware of the pediatrician's potential role in influencing the health of all the children in the community, including those children who do not seek care. Additionally, child abuse prevention efforts, health education in schools and day care settings, and promotion of the Women Infants and Children Program (WIC) and other social service agencies may not be emphasized.

Recognizing the need for increased training in community pediatrics, the Residency Review Committee (RRC) for Pediatrics in 1996 mandated structured educational experiences in community pediatrics.¹⁰ The Ambulatory Pediatric Association (APA) curriculum guidelines also include resident education in community pediatrics.¹¹ Both documents strongly emphasize community-based clinical and nonclinical experiences, such as involvement with schools and day care centers, interaction with community organizations, participation in child health promotion and advocacy, and exposure to public health and prevention activities. The APA and the RRC both suggest a 1-month community pediatrics block rotation as one method of achieving these new standards.

The University of California San Diego (UCSD) and the Naval Medical Center San Diego (NMCSD) jointly developed a 1-month block rotation in community pediatrics for second-year pediatric residents. Both residency programs had previously provided some clinical experiences in community

settings, but the predominant educational environments were located in inpatient and outpatient facilities of tertiary care hospitals. The development of the community pediatrics curriculum provided experiential learning through site visits in the community. Child advocacy projects and school consultation assignments were required components of the curriculum. The rotation was piloted successfully as an elective in 1994–1995. It became a requirement in 1995 at NMCS and in 1996 at UCSD. This article describes the design, implementation, and evaluation of a block rotation in community pediatrics.

CURRICULUM DESIGN

The curriculum content was drawn from existing local educational, social, and public health programs involving children. Schools, day care centers, and other agencies were visited to identify potential experiential learning opportunities for residents. Guidelines from the APA¹¹ were used to structure a written curriculum, with goals and objectives linked to specific sites and experiences. Eight core training areas (Table 1) were chosen based on the overall importance of the topic and the quality of the experience available in the San Diego community. For example, San Diego's expertise in child abuse prevention led its inclusion as a core training area.

A high priority was placed on exposing residents to vulnerable pediatric populations, such as those with special needs, those who do not use primary health care, and those who are at risk for or who are victims of abuse and neglect. Community experiences included exposure to public health programs such as the WIC Program and programs addressing tuberculosis, low immunization rates, and sexually related conditions. Relationships were formed with a range of programs such as schools, child care facilities, preschools, and the Head Start Program that address the special needs of children with learning disabilities and conditions that require accommodations during the school day. To increase residents' appreciation for the complex medical and social issues of Mexican immigrants, a monthly clinic was established in an impoverished area of Tijuana where residents provided patient care for a half-day during their month. Residents learned about abuse and neglect by participating on multidisciplinary teams, through didactic instruction on medical record documentation and clinical findings, and through home visitation to families at high risk for child abuse.

Faculty did not accompany residents to each visit. This was time-consuming and tended to diminish the role of the resident as the health expert. Day care administrators, local WIC workers, child abuse specialists, school nurses, and other agency representatives were pleased to serve as educators for pediatric residents. Hosting pediatric trainees was seen as consonant with the overall mission of their respective organizations. No individuals or employers requested compensation.

Nevertheless, assurance of quality and consistency needed to be established within each agency. To enhance and standardize

TABLE 1. Curriculum Overview: Core and Elective Training Areas and Relevant Visits or Experiences*

Core training areas
Pediatrician as consultant
Specific consultation roles supervised by physician consultant at various schools, day care centers
Participation in Individualized Education Plan formulation
School Attendance Review Board (interdisciplinary team that reviews and enforces school attendance)
Pediatrician as advocate
Specific advocacy projects set up with physician advisor in areas of literacy, child abuse prevention, injury prevention
Provision of care for medically underserved youth
Home visitation (child abuse prevention targeted at high-risk families)
Tijuana Mexico Clinic (monthly clinic in impoverished area)
WIC Program
Child abuse prevention
Child Protection Team Interdisciplinary Meeting
Child Abuse Case Review Conference
Navy Family Advocacy Center
Navy Child Protection Consultant and Social Worker (didactic sessions on abuse, interviewing)
Polinsky Children's Center (temporary shelter for abused and neglected children)
Needs of incarcerated youth
Juvenile Hall (clinical service provided to incarcerated teens)
Health education
Day care centers and elementary schools requesting parent or staff education
Programs targeted toward pregnant school-aged teens
High school nurse visit and counseling for teens
"Ask a Pediatrician" (short talk with open question/answer session to social workers for families at high risk for child abuse)
Accommodating children with special needs in the home/school/community
Regional center (Service coordination for children with disabilities)
Lindbergh-Schweitzer School (children requiring skilled nursing)
Medical Treatment Unit (provision of multidisciplinary services to children with complex needs)
Special Education Department, San Diego Schools
Health issues in child care programs
Structured day care center visit
Head Start visit
Elective training areas
Public health—function and structure
Tuberculosis prevention program
Alcohol, tobacco, and other drug use and treatment
Teen Recovery Center (drug treatment program)
Sexually related conditions among youth: infections and pregnancy
Mobile Teen Outreach Unit
Violence and injury prevention
San Diego Safe Kids Coalition (residents participate in community coalition meetings)
Homosexuality: children of same sex parents and unique needs of gay and lesbian youth
Interested residents directed toward various gay and lesbian community groups
Accessing resources: computers/Internet
UCSD Biomedical Library training

their involvement in these community settings, residents received written site visit-specific questions, designed to prompt them to address content information that pertained to curriculum objectives. For example, when visiting a day care center, the resident would ask questions pertaining to exercise, diet, hygiene, discipline, exclusion of ill children from the facility, policies for accommodating children with special needs, and state licensing requirements. Additionally, these questions helped community agency hosts understand the purpose of residents' visits, diminishing the need for faculty presence.

The community pediatrics rotation was tailored to reflect each resident's interests. Each resident completed a questionnaire assessing community pediatric interests 6 weeks before the rotation. Results of this questionnaire were used to supplement the eight core training areas with elective experiences at additional sites (Table 1).

IMPLEMENTATION

During the community pediatrics rotation, residents maintained their half-day per week continuity clinics and some overnight call responsibilities. Residents were scheduled for an average of 20 site visits a month. At an orientation session on the first day of the month, the rotation coordinator and physician faculty discussed the scheduled experiences and explored potential consultant relationships and advocacy projects with the resident. Channels for ongoing communication during the month were clarified, and arrangements were made for making frequent contact with both the program coordinator and the pediatric faculty.

To maximize learning, it was necessary to ensure site visit attendance and critical thinking. Residents were required to complete site visit evaluation forms assessing the overall experience and the instruction received from the faculty or community host. Resident feedback was used to adjust the structure and instruction received at each community site. Residents also met weekly with the program coordinator or pediatric faculty to discuss the site visits, advocacy projects, and consultation assignments, and to evaluate progress in achieving relevant objectives and completion of assigned readings.

The minimum pediatric faculty time required to adequately supervise, monitor, and modify resident experiences in a combined program of 23 second-year residents was estimated at 0.3 full-time equivalent (FTE). Faculty accompanied residents to certain site visits, oversaw curriculum changes, su-

pervised resident consultation and advocacy activities, and held weekly feedback sessions. This level of pediatric faculty involvement also required 0.5 FTE clerical support and 0.5 FTE program coordination.

EVALUATION

Evaluation occurred on both a resident and a program level. Resident evaluation was based on accomplishment of the rotation requirements described in the orientation session on the first rotation day. A five-point scale was developed with a score of 3 representing average and expected performance (participation at all visits) and 5 representing exceptional accomplishments, such as resident-initiated additional visits or particularly innovative or enthusiastic advocacy work.

Program evaluation occurred on three levels. Residents participated in a formative evaluation of the program while on the rotation by submitting site visit feedback forms. Program effectiveness was assessed through pre- and postrotation resident self-assessment of competencies in eight areas. Residents' interest in being active in the community as a part of practice was also assessed. Finally, the extent of resident involvement with advocacy projects and consultation sites was assessed.

Four and five-point forced-response ordinal scales were used for the competency areas. The top two response categories were considered to represent "good to excellent." Thirty-four residents (NMCS D $n = 10$; UCS D $n = 24$) completed the 4-week rotation from January 1997 to June 1998. All residents completed the questionnaires.

Before the rotation, very few residents felt competent in accessing community resources, devising effective advocacy strategies, serving as a school consultant, and integrating scientific data with community factors in patient management (Table 2). However, self-assessed postrotation abilities in these areas, and the other areas tested, improved dramatically and significantly. Residents who reported they were "most interested" in being active in the community rose from 72% before the rotation to 93% after the rotation.

Examples of resident community projects include a study of influenza vaccine efficacy and

TABLE 2. Residents' Self-assessed Community Pediatric Competencies Before and After Rotation

Survey Question Content	Number of Residents Whose Self-Ratings Were:			% Good to Excellent:		<i>P</i> *
	Improved	Unchanged	Decreased	Before	After	
Ability to access and utilize community resources	33	1	0	3	82	<.001
Ability to integrate scientific data with family, cultural, social, and community factors when caring for patients in community settings	23	11	0	29	88	<.001
Ability to identify and appropriately refer victims of child abuse	26	5	2	36	91	<.001
Ability to communicate with nonphysician collaborators that provide services to children	21	11	2	68	91	<.001
Knowledge pertaining to pediatricians' role in the community	23	10	1	56	91	<.001
Ability to provide age-appropriate health education	19	12	3	59	82	<.001
Ability to serve as a consultant to a child-serving nonhealth system (school, day care center)	26	6	2	26	82	<.001
Ability to devise effective strategies for advocacy	21	10	3	21	59	<.001

* Wilcoxon signed-rank test using STATA.

effectiveness in day care center attendees, a review and comparison of intentional injuries for military and nonmilitary families, a used-book drive that rewards low-income children with reading material after immunizations, a pregnant/parenting teens counseling program, and a school-based education program for patients with asthma and their parents.

To assess the extent of ongoing resident involvement in advocacy and consultation, a cross-sectional survey was conducted 1 month after the first year of data collection. All residents who were at least 3 months beyond their rotation completion date were asked to characterize their involvement as none, minimal (contact every 6 months), moderate (contact every 3 months), or extensive (monthly contact). At least minimal contact was reported by 55% (11/20), and moderate to extensive contact was reported by 25% (5/20). This small sample prevents strong statistical conclusions, but the proportion of residents involved did not appear to decrease as time from rotation completion increased. Of the four residents for whom 12 months had elapsed since rotation completion, two were minimally and one was moderately involved with their consultation site or advocacy site.

Including the four residents who completed the rotation 6 months before the data collection period, four projects were presented in abstract form as finalists at a national meeting,¹²⁻¹⁵ and one publication has resulted.¹⁶ Some projects that were initiated but not completed during the rotation were continued by other residents who followed in subsequent months. Several Navy residents received Navy Achievement Medals as a result of involvement with their community pediatric projects.

DISCUSSION

The unique features of this community pediatrics block rotation for second-year residents include a dedicated 1-month period, an emphasis on non-clinical aspects of community pediatrics, the training of pediatricians as consultants or advocates, and the integration of the program between two institutions. Several previous community pediatric educational interventions¹⁷⁻¹⁹ emphasizing non-clinical consultative and advocacy skills have demonstrated that residents and the community benefit from the experience.

There are several advantages to incorporating a block rotation as a major component of the overall community pediatric curriculum. Residents respond well to structured experiences with clearly defined goals and objectives and an evaluation system. Residents have more time to meet faculty and regard them as role models, and may be encouraged to further pursue interests in this area. Rotation coordinators develop collaborative relationships in the community, facilitating optimal educational experiences for residents. Perhaps most importantly, a 1-month block of time dedicated to this subject matter is tacit endorsement by the pediatric department of the importance of this area of pediatric education.

The integration of two local residency programs was worthwhile for several reasons. First, each institution contributed long-standing teaching relationships with different community agencies. For example, the Navy had well-established sites at day care centers and WIC, and UCSD had teaching and consultation relationships established at facilities for incarcerated youth, for abused children in protective custody, and in local school districts. Second, faculty time and community hosting efforts were used more efficiently by bringing residents from both institutions to these sites at the same time. Third, residents in different programs seemed to enjoy an exchange of ideas among themselves, as did the faculty from both institutions. Finally, collaboration allowed for increased faculty scheduling flexibility.

Early program evaluation is encouraging; however, there are several limitations to the data. Resident improvement is based on self-assessed competency and on short-term follow-up, which may not reflect accurately what residents actually do. The short-term positive changes do not necessarily correlate with long-term changes in resident practices, beliefs, and attitudes.

Obstacles to achieving a successful block rotation in community pediatrics include the considerable time involved in scheduling, mentoring, and evaluating. Residency program directors need to grapple with the costs and loss of clinical service that residents provide in exchange for education in a community rotation.

The shift to community pediatric education has been slow and long overdue. Medical educators have identified the need to narrow the residency-practice training mismatch⁴ that has existed in pediatrics for decades. Residency educators at the universities of Massachusetts, Utah, and North Carolina, among others, helped to establish community-based practices as effective and desirable learning sites for pediatric primary care training for their own programs and nationwide. Now, with more stringent RRC requirements for community pediatrics, it is time to explore methods of further enhancing community pediatric education. Residency training can reach out to incorporate non-clinical agencies in the community and make the next generation of pediatricians more attuned to, and influential in, shaping social determinants of the health and development of children.

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