MANUAL FOR PEDIATRIC CONTINUITY DIRECTORS

2nd Edition

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APA  
Academic Pediatric Association
DEDICATION

To those from whom we have benefited the most:

- Our fellow continuity directors/preceptors
- Our colleagues engaged in primary care education
- Our residents
- Our patients and their families
PREFACE

The Continuity Special Interest Group (SIG) of the Academic Pediatric Association (APA) was established in 1990. It is an organizational entity comprised of continuity clinic directors, preceptors, and others, whose primary interest is to collaboratively engage in the ongoing discussion and creation of the best primary clinical care experience possible for all pediatric residents. While this is the ultimate objective, the focus is to remain compliant with current Residency Review Committee (RRC) guidelines.

The SIG is lead by a chairperson (currently, Dr. John Olsson) and a Task Force of 10 to 12 SIG members, who communicate with one another (via electronic means or telephone) throughout the year, regarding continuity clinic issues, and who meet annually at a predetermined location to develop an agenda and list of discussion topics for the annual APA-SIG meeting. Periodically, Task Force members also develop and conduct a workshop to address issues of particular importance to the continuity clinic experience.

This 2nd Edition of the Manual for Pediatric Continuity Directors represents a compilation of extensive data gleaned from the educational efforts and teaching experiences of SIG members, as well as from peer-reviewed articles containing particular relevant information to continuity directors and preceptors. It was created to help continuity directors establish, nurture, and maintain successful teaching programs. Though of benefit to directors in general, it is specifically intended to serve as a ready resource of information for those assuming new continuity directorship roles.

Although this edition includes a number of similar chapter headings found in the 1st Edition, significant modifications, additions, and changes have been made to nearly all of them. Each chapter addresses essential components necessary to achieve important results. Two new chapters have been added. One of these is devoted to measuring continuity within the continuity clinic setting and the other addresses quality improvement issues.
One of the chapters delves into the overall evaluation process of the various components of the continuity clinic, i.e., clinic dynamics, the faculty, the residents, and the teaching program. Faculty development, data gathering, educational goals, practice management issues, opportunities for conducting clinical research, and funding issues/potential resources, and steps to take in receiving accreditation by the RRC/ACGME are addressed in other chapters.

Reference is given to current Residency Review Committee (RRC) guidelines specific to the continuity clinic experience. Efforts have been made to address ingredients essential for providing a successful continuity experience and to address practice management and administration issues unique to clinic sites. A suggested site-specific calendar highlighting upcoming events, deadlines, and general reminders is included to help assure smooth transition throughout the academic year.

Each chapter draws heavily upon work done by current and previous SIG Task Force members. Topics and materials for the Annual Meeting and APA workshops prepared by a number of other SIG members during the past 20 years also were essential in the development of this second edition. All are hereby acknowledged for their invaluable contributions.

As editor, I want to express my deepest appreciation and gratitude to my office assistant, Ms. Janie Garcia, for her diligence in formatting all the chapters and for her supreme effort in bringing this final product to fruition.

Jan E. Drutz, MD - Editor
THE CONTINUITY CLINIC CONCEPT

The Historical Background - The Present - The Future

The inclusion of a continuity experience for all pediatric house officers during their three years of training was made mandatory for the first time in the 1978/1979 Residency Review Committee (RRC) requirements. Since the late 1970’s, the structure of continuity programs and the rate at which they have developed have varied among training programs.

In the early years, junior faculty members generally were given responsibility for establishing and running continuity programs, frequently without leadership or adequate support. In 1990, a task force of continuity clinic directors was formed which subsequently lobbied for the establishment of a special interest group (SIG) within the Ambulatory Pediatric Association (now known as the Academic Pediatric Association (APA)). Since that time, the insightful contributions of the many SIG task force members have helped to provide a forum for needed discussion, networking, and problem-solving. The SIG has been instrumental in fostering faculty development and leadership relevant to important issues in the continuity clinic training process.

Now in the early phases of the third decade for the SIG, continuity directors continue to work diligently in order to address a number of significant challenges. Among these are ongoing fiscal concerns directly attributable to diminishing financial resources and ongoing clinical practice changes in the ever increasing managed care environment.

New RRC recommendations and requirements for specific resident time in continuity clinic settings as well as a minimal number of patient encounters per session, more community practice experiences, and better defined curricula with specific educational goals and objectives, while providing better definition and structure, still present challenges. A potentially greater impact on the function of the continuity clinic could possibly be the implementation of new regulations as to resident duty hours. Addressing the issues of scheduling pediatric residents and their patients will become the joint task of pediatric program directors and continuity clinic directors.
With regard to the more important educational and administrative challenges facing continuity clinic directors and preceptors, it is hoped that the contents of this 2nd edition will be of some benefit.
MISSION

The mission of the continuity experience is to help residents acquire competencies essential for comprehensive, coordinated longitudinal care of children with a wide variety of medical, behavioral, and social problems.

To accomplish this mission, residents must be offered a structured educational experience where they provide general pediatric care to a panel of patients throughout residency training. Such care must include routine well child examinations, management of acute and chronic medical problems, anticipatory guidance, preventive health care, management of physical, psychosocial, developmental, and environmental problems.

To acquire competency in coordinated, longitudinal patient care, residents should see patients in an efficiently run medical clinic or private practice office setting. Quality office practice management therefore is integral to meeting the mission of the continuity experience. Certain professional attitudes, skills, and behaviors are especially important for coordinated, longitudinal care of children. The continuity experience must focus on acquisition of these broad professional competencies to fulfill the intended mission.
CHAPTER 1

KEY INGREDIENTS FOR SUCCESS IN CONTINUITY:
AN ALPHABET SOUP
Paula Algranati, MD & Julia Kelly, MD

INTRODUCTION

This chapter summarizes our collective experience regarding the essential elements for a successful continuity program. It contains an alphabet soup of “take home” messages. Each topic deserves an expanded discussion, much of which is provided in this manual. For additional guidance, the reader is directed to references listed at the end of individual chapters.

A

ABSOLUTE PRIORITY

Absolute priority requires that every house officer and faculty member understand that continuity time is sacred! Apply this rule regardless of whether “travel” to continuity means walking down a flight of stairs to the hospital-based practice or driving twenty minutes to a community health center or private practice. Remain vigilant for individuals or groups who exhibit a habitual pattern of negativity that hinders continuity’s success.

Absolute priority also requires adherence to ACGME requirements! The RRC will definitely review the continuity program during your department’s ACGME re-accreditation process. Become intimately acquainted with ACGME pediatric program requirements specific to continuity and any extra ACGME requirements assigned to continuity by your program director. (See Chapter 10 – “Accreditation by ACGME/RRC”). Having a clear understanding “up-front” i.e., - weeks to several months in advance (rather than just a short time before the scheduled visit date) is essential. Doing so, will provide enough time to implement change and evaluate outcomes. Be aware of RRC site visitor’s expectations and know what information will be needed to help demonstrate compliance. Expectations for compliance will be based upon responses submitted by you in advance of the visit for each line item completed in the Program Information Form (PIF).

Establish a good working relationship with the chief residents. This is particularly important for the creation of continuity schedules that “work” and that meet ACGME requirements (especially in light of the current duty hour regulations). Scheduling goals might include minimizing switches to the residents’ schedules, which potentially could diminish continuity patient care or significantly disrupt continuity team functioning. This may prove to be more difficult to achieve than would appear. At present, each resident MUST have ½ day session/week for a minimum of 36 clinic weeks per year.
B

BLESSING OF THE CHIEF

The department chief must lend his or her unwavering support to the continuity program by verbally and/or in writing, emphasizing its importance to all house staff and faculty. This includes providing financial support necessary for all aspects of the continuity operation, especially any and all educational efforts.

C

CONTINUITY OF CARE

Whenever possible, facilitate continuity of care. Linking the patient to his or her primary house officer (and faculty member) will simultaneously maximize quality of patient care and education. Ideally, continuity of care should extend beyond office visits to include prenatal visits, phone communication, after-hours care, and in-hospital care, as well as newborn nursery care. The key word is facilitate. Program directors, in-house and community-based preceptors, and office personnel must follow through on their commitment by facilitating continuity of patient care whenever feasible. There are simple but effective ways to facilitate continuity. For example, you, as faculty attending, or the resident, might consider accompanying a family to the “check-out” area. This will help facilitate the scheduling of a follow-up appointment with the same resident.

Another strategy to pursue might be to review the schedule for the upcoming clinic day and purposefully assign to a resident a number of infants for healthcare supervision. This will help to build the resident’s patient panel and foster continuity of care between the resident and the infants/parents. In general, parents of infants are more likely to return for subsequent well child check-ups and acute illness visits as opposed to the parents of an older child.

D

DEDICATED FACULTY, SPACE AND PATIENTS

In most programs, a full time continuity director with a strong background in general pediatrics should provide the dedicated leadership. The director needs clearly defined support and power. A dedicated budget is helpful for piloting innovations and implementing on-going programs such as faculty development (See Chapter 8 – “Faculty Development”), trials of new sites, and evaluation instruments (See Chapter 6 – “Continuity Clinic Evaluation & Feedback”). 

Administrative support must be available to enhance timely and regular communication to all participants. This can be crucial to the survival and success of continuity training, particularly when sites are at a distance from the academic medical center. To free-up the director’s time for other more essential tasks necessitating his/her expertise, a dedicated administrator who concentrates on basic educational and programmatic goals should be appointed.
Additional dedicated faculty should include generalist pediatricians, who either are full-time academic faculty or who practice in the private sector or in out-lying community health centers. Dedicated physician assistants and pediatric nurse practitioners can be utilized to provide support and teaching. Sub-specialists, who will readily accept consultations from continuity trainees, should be identified.

For the residents, what helps to enhance their impression of the continuity clinic site is the fact that dedicated space and adequate support staff are available and that patients/parents consider the clinic to be their child’s medical home. Their appreciation of the high quality medical care and services being provided, will result in a significant educational experience. (*See Chapter 4 – ‘Educational Issues for the Continuity Clinic’*)

**E**

**EVALUATE**

Virtually all aspects of the continuity experience should be subject to monitoring and evaluation. House officers should be evaluated on their performance, knowledge, attitudes and skills. Evaluation of teacher performance is as important as evaluation of the learner. Patient care services including process and patient-related outcomes must be determined. Process factors for study may include efficiency and continuity, while patient-related factors may include patient satisfaction, compliance, and immunization status.

Learner satisfaction and evaluation of the adequacy of preparation for “real world” medical practice are measures of program success. Evaluation should be both formative and summative.

Feedback for house officers should be based upon previously delineated goals and objectives and should include observations of house officer behavior. As part of the assessment, house officers should be asked to evaluate themselves.

Set aside time for evaluation and feedback, keeping the six ACGME Core Competencies at the forefront: patient care, medical knowledge, practice based learning and improvement, interpersonal and communication skills, professionalism, systems based practice. Written goals and objectives and evaluation based on those goals should clearly reflect the ACGME Core Competencies. (*See Chapter 4 – ‘Educational Issues for the Continuity Clinic’*).

**F**

**FACULTY DEVELOPMENT**

Faculty development should be a continuous process. Faculty development for both full-time and community-based teachers enhances teaching effectiveness, while simultaneously helping to combat stress and burnout. New preceptors need orientation that provides information about program mission, curriculum components, and expectations for trainees. These sessions can include the use of specific evaluation instruments and guidelines for assessing level-specific expectations of competence. Workshops and retreats can provide opportunities for support, discussion, and role-play. They can serve as venues for educating preceptors in regard to enhanced teaching and feedback skills.
Faculty development workshops and retreats can serve as tangible rewards for program participation. They can provide an outlet for helping to diminish the sense of isolation from colleagues and serve as a welcome escape from the medical center. These sessions also provide a forum for identifying potential new faculty recruits. Faculty development is an important method for demonstrating institutional support and recognition, while enhancing the effectiveness and consistency of teaching. (See Chapter 8 – ‘Faculty Development’)

G

GOALS AND OBJECTIVES

Distribute clearly written curriculum goals and objectives to all house officers and faculty. Translate goals and objectives into behavioral measures, in order to observe, quantify, and record the demonstrated level of competence achieved. Invite all faculty and house officers to provide input and feedback about the curriculum and evaluation. View goals and objectives as a living document. Maintain credibility and real-world applicability with regular scrutiny and revisions. Relate the goals and objectives to the six ACGME Core Competencies.

H

HETEROGENEITY

Provide house officers with a heterogeneous patient base. Develop a system with the goal that each house officer will have clinical responsibility for providing care for children of all ages, socio-economic status, and cultural backgrounds. Residents should gain the experience of health supervision visits for children of all ages. The patient panel should include those with a diverse range of acute and chronic medical care and behavioral problems. It should reflect a robust contingent of healthy infants, children, and adolescents with routine health concerns and minor illnesses as well as a number of children with a variety of chronic conditions having a potential impact on family function and patient well-being. Offering continuity experiences in a wide range of practice settings may enhance the training program’s success at providing heterogeneity.

I

INGENUITY

Be creative! Teach what is taught nowhere else in the program. Supply preceptors and house-officers with new and exciting approaches to topics. For example, suggest a “tasting” session for over-the-counter pain relievers or infant formulas. “Teach off the list” by using the day’s appointment schedule to discuss a theme (cost of visits, techniques to enhance patient compliance, physical examination skill of the day, well-child topic of the day, age-specific topics to focus anticipatory guidance). “Go on a scavenger hunt” and challenge house officers to uncover a particular physical finding. Teach office-based procedures by suggesting that house officers perform a procedure on each other (i.e., hearing testing, vision testing). Being innovative may stimulate other faculty members to expand their personal repertoire or develop their own innovative approach to teaching.
J

JUDICIOUS

Judicious use of incentives, rewards, and enhancements stimulates enthusiasm and rejuvenates active participation. Food always enhances conference attendance. Recognition of special events, such as individual house officer birthdays, can enhance team spirit. Awards (i.e., for highest “show” rate of the term, for most “new babies” brought into the practice) promote goals and objectives. Enhance faculty allegiance with “perks” such as complimentary access to fee-based resources on the Internet, textbook “gifts” or favored parking spaces.

Do not fail to recognize support staff! Recognition for “continuity employee of the month” or “continuity employee who saved the day” is as important as recognition of house officers and faculty. Community-based office personnel should be included in the reward process, with events such as yearly luncheons, plaques for the waiting room wall, and special access to medical-center or university facilities and functions.

K

KEEP A CALENDAR

Keep a yearly calendar, with reminders about scheduling, orientation, evaluation and other notable events. (See Chapter 2 – ‘Year Calendar for Continuity Practice’) Distribute calendars to program participants as far in advance as possible. This is particularly important for facilitating office schedule changes when house officers or faculty know they will be unavailable. Use the computer to disseminate this information and to facilitate communication with residents. E-mail can be a great way to help keep everyone on the same page regarding Continuity Clinic Events and Schedules.

L

LEARNING EXPERIENCES

Provide house officers with the tools to accomplish goals and objectives. In addition to heterogeneity and ensuring adequate patient volumes (to meet the required minimum number of 3, 4 or 5 patients/session respectively for residents at the PL-1, PL-2 and PL-3 level of training), offer variations in learning experiences. Emphasize life-long learning by encouraging house officers to find out which learning experiences best fit their personal style. Examples of learning experiences include: supervised patient care, one-on-one teaching, small group discussion, written syllabus, self-directed learning, reflecting on experiences, computer-assisted learning, book lists, video and audio tapes, micro-teaching and journal articles. Additional ways to enhance learning clinical skills include video-recorded observation, role-play, standardized patients, and audio taped telephone calls. Provide faculty with tools to maximize the success of the learning experience.
At every opportunity, investigate and pursue monetary support for program development, operations, evaluation, and research. (See Chapter 9 – ‘Funding Issues’) The impact of managed care continues to present continuity directors with ever-increasing fiscal challenges. At the same time, new options for funding may become available, but only to those who remain alert. Avoid incurring increased costs as much as possible. For example, encourage participation by volunteer faculty, and tap into hospital computerized systems for scheduling and data collection.

Make an effort to comprehend the financial factors involved in running a clinic and acknowledge the extent to which managed care has had on the practice of medicine. Having some understanding of how managed care works will be of significant benefit. Include discussions about managed care as part of the continuity curriculum. Topics to consider are practice management, health care financing, cost-efficient practice strategies, and best practices for billing.

Speaking of billing, take advantage of billing opportunities to maximize income and, at the same time, educate residents. Make certain that your continuity clinic is in compliance with the primary care exemption rule, if applicable, in your state. Streamline every process required by managed care organizations and the continuity practice itself by minimizing wasted resident and faculty time carrying-out inappropriate secretarial tasks, e.g., forcing residents to personally fill out forms, make telephone calls, or send faxes.

Support the house officer-patient relationship by making the house officer’s name universally visible. Provide an attractive professional name-tag, a name plate for his/her examination room and a supply of personalized business cards. Information on business cards should include: the house officer’s name, practice site location, and hours of operation, as well as telephone number for appointments and for after-hours provider access. For private and other community practice sites, the program director or administrative assistant should work with personnel at each location to support office policies while making certain that educational goals are being met. At each site, patient charts and computer data-bases should clearly identify the name of the house officer responsible for primary care. As a suggestion, the training program may supply individual practice sites with attractive pre-printed stickers that can be attached to charts of patients followed by a house officer.

An oversight or advisory committee of faculty and house officers should meet regularly.
program. Additional Committee members may include support personnel such as nursing, registration, and/or other administrative staff. Conduct surveys on a regular basis that query all participants (house officers, faculty preceptors, nurses, and support personnel) about various aspects of the continuity program. Consider distributing survey summaries using an online list serve or providing hardcopies a newsletter or bulletin. When appropriate, also consider sharing information with patients and families in the practice.

P

PRACTICE MANAGEMENT

Practice management rationale and operations should reflect the combined missions of service and education, but also must satisfy government and insurance regulations. In many programs, the continuity director is ultimately responsible not only for education, but also for management of the continuity practice operations. Oversight responsibilities may encompass appointment scheduling, billing, reimbursements and collections, medical records, quality assurance, managed-care concerns (verifying coverage, authorizing referrals), equipment, and facilities, as well as professional, administrative and ancillary support personnel and services. A continuity practice business manager can enhance the viability and efficiency of operations and may also play an important role in teaching house officers about operational aspects of practice, including billing.

For residents in community-based continuity sites, teachers for a practice management curriculum can include the office manager, billing administrator, and other support personnel. These non-physician teachers often enjoy the interactions and appreciate the recognition as valued contributors to the teaching of the next generation of pediatricians.

Q

QUALITY

Collecting appropriate data demonstrates program quality. (See Chapter 11 – ‘Quality Improvement in Continuity Clinic.’) It is essential to evaluate learners, teachers, quality-of-patient care, and aspects of the overall program that contribute data for required documentation or data that demonstrates whether important goals and objectives are achieved. Collecting data related to the scope of each house officer’s continuity patient panel is required by ACGME with a log that must include age, diagnoses and encounter dates. Data may include: panel size, number of acute and health supervision visits scheduled and completed, categories of chronic illness within the panel, payer mix, and average number of visits per session (see “Learning Experiences” above).

Quality assurance (QA) monitoring (e.g., chart reviews for immunization rates and problem list completion) and quality improvement (QI) activities are critical aspects of delivering high quality patient care and meeting standards set by regulatory and managed care organizations. QA and QI activities also are critical aspects of educating pediatric residents, as acknowledged by ACGME competency requirements in Practice-Based Learning and Improvement (PBLI) and Systems-Based Practice (SBP). The Continuity Clinic is an ideal (though not required) setting in which residents can fulfill requirements in one or both domains. Even when not “officially” meeting a specific requirement, pediatric residents should be drawn into continuity site QA and QI activities. QA/QI will be on virtually every list of requirements related to renewal of
licensure, privileges, and certifications, and for negotiating favorable managed-care and other contracts. Help residents develop good habits early! QA and QI activities are essential for life-long-learning - get house-staff involved.

R

ROLE MODEL

Faculty should serve as role models for house officers, not solely by interacting with patients/parents during precepting sessions, but also by role modeling when caring for their own private patients and families. It can be useful to routinely remind preceptors about the importance of role modeling as one of the duties of a continuity preceptor. Preceptors also should remain aware that positive role modeling is an absolute “must” any time and any place (i.e., hallway, elevator, cafeteria, rest room, off-site meeting venue, hotel room, restaurant, gym or in their own home) that their behavior is visible to residents. An enthusiastic faculty preceptor not only enhances continuity learning but also encourages trainees to consider a career in primary care. A positive attitude, humanistic and professional behavior in all interactions with patients, parents, staff, trainees and colleagues, a rigorous approach to problem solving, and efficient, comprehensive patient care, each instill an indelible and irreplaceable impression.

R

RESEARCH

The importance of research mandates the addition of a second “R.” (See Chapter 7 – Research in Pediatric Continuity Clinic Settings) Within the continuity clinic setting, research opportunities include health services outcomes research, drug studies, and medical-education studies. Research within this setting is important for faculty career development and for enhancement of faculty morale. Patients and staff involved in research studies frequently experience the feeling that they have made a contribution toward improving health, health care and the enhancement of medical education. Families participating in research projects often gain an increased sense of loyalty to the practice. The Academic Pediatric Association (APA) Continuity Research Network (CORNET) provides an opportunity to participate for all involved in resident continuity training.

S

SET STANDARDS

Set clearly defined standards (performance expectations) for faculty, house officers, and all clinic sites participating in the continuity experience. Standards for house officers include rules for attendance and schedule changes, efficiency, and documentation. Standards for faculty include teaching and oversight responsibilities, feedback, and evaluation requirements. Standards for sites include range of available services, access to ancillary services, resident-specific appointment scheduling, data management, facility and staffing requirements, telephone triage requirements, quality assurance programs, and systems for review of diagnostic tests. Consequences of non-compliance should be clearly defined.
TEAMWORK

You are not alone! While you may be ultimately responsible for the continuity clinic, others may play an active role. Share the responsibility. Link house officers, faculty and support staff into teams. The team concept improves continuity of care, efficiency, and esprit de corps. Employing this concept can help to provide a measure of protection for your time as well as that of other faculty.

A well-functioning team includes nursing personnel, administrative personnel, social workers, psychologists, and pediatric sub-specialists. For these team members, assigning specific teaching topics in their area of expertise may be especially productive (e.g., business management, immunization procedures, management of suspected child-abuse, work-up of school failure and chronic disease coordination). Similar linkages with community-based clinicians may prove beneficial as well.

UNDIVIDED ATTENTION

Encourage preceptors to devote their undivided attention to house-officers and patients during continuity sessions. The Health Care Financing Administration (HCFA) guidelines regarding the role of the teaching physician may preclude preceptors from conducting any other business during a teaching session. If the guidelines apply to your program, discourage faculty from attempting to carry out multiple obligations while functioning as a preceptor. In community office settings, preceptors also should be encouraged to provide as much individual attention to the house officer as possible. Community-based practitioners, who make the commitment to precept, bring substantial credibility to the concept of continuity clinic, while at the same time serving as powerful role model figures.

VIDEO

The most effective method to evaluate house staff-patient interaction is by direct observation. Aside from being physically present in the room, faculty may consider using one-way mirrors or review of video-recordings of resident-patient encounters. Periodic use of standardized-patient encounters can supplement existing methods for education, feedback and/or evaluation. For each house officer, the importance of developing excellent communication and physical examination skills cannot be over stated. Faculty can better monitor progress in these areas through direct observations and use of a standardized tool for feedback and documentation of clinical observations.

The most effective method to evaluate house staff-patient interaction is by direct observation.
WRITTEN RECORDS

Written records include handwritten and/or electronic medical record (EMR) documentation. Faculty must review and co-sign all resident write-ups in order to fulfill educational requirements and to remain in compliance with most third party payer guidelines and practice plans. Detailed critique of written records by preceptors should be performed at regular intervals, preferably using a standardized tool to evaluate write-ups. Peer review of written records may also be incorporated into the process. Providing feedback emphasizes the importance of complete documentation. Incorporate managed care requirements into the feedback process. Encourage all continuity sites to use or develop standardized flow sheets (printed forms or EMR forms) for health supervision and problem visits. The benefits of using standardized flow sheets for patient encounters have well-documented value in the process of enhancing patient care and medical education.

X

XENOGAMY

Just checking to see if you are still with us!!

Xenogamy means cross-fertilization. This is a reminder about the Academic Pediatric Association (APA) Continuity Special Interest Group (SIG). The SIG meets for a ½ day (3 hours) session at the annual APA meeting, part of the larger annual PAS meeting. The SIG meeting is your opportunity for xenogamy! Come meet continuity directors and preceptors from throughout the country. Attendance at SIG meetings is open to all-comers, meaning any registered APA/PAS attendee.

Continuity SIG Meetings attract a large number of individuals (60 to 80 people; no not a cast of thousands) and always include plenty of SIG first-timers, new preceptors, and brand-new continuity leaders, along with plenty of “old-timers”. They come as individuals with a small, medium, or bucket-sized quantity of first-hand knowledge and experience in the continuity clinic process. Participants eagerly share concerns, discuss solutions, brainstorm regarding new ideas, and identify new strategies. It is an opportunity to make connections with others, especially with those who are doing what you do. Anyone interested is encouraged and welcome to come.

The SIG also has a list-serve just for continuity topics; access has only one requirement: membership on the list-serve is restricted to APA members. If you are not already a member, please consider joining the APA today! If you are not on our mailing list, drop us a note or stop by our session at the annual meeting, and let us know who you are!

Y

YEARELY RE-EVALUATION

Take stock at least once a year. Make sure that you are getting the support that you need and proceeding in the right direction. Until recently, continuity director positions traditionally had a
high rate of turn-over, and unfortunately, a high rate of burn-out. Two factors contributed substantially to this trend in the past, isolation and lack of acknowledgment for the importance of the mission. As a result of the APA, isolation is diminishing. Furthermore, despite the problems resulting from current fiscal constraints, the recent shift toward primary care and primary care medical education should substantially enhance the mission of continuity clinic directors.

Z

ZOO

Just as school children go on field trips (e.g., the zoo), house officers can experience continuity education beyond the confines of their assigned clinic setting. Field trips enrich resident learning and offer brief respitees from every day routines.

Ideas for Continuity Field Trips:

- Tours of neighborhoods where a considerable number of continuity patients reside helps to highlight logistical, social, and economic issues confronting these individuals and their families.
- Excursion to the local drug store to read labels, look at prices, make product comparisons, and talk to pharmacists
- Make house calls to homes of patients in residents’ continuity panels to see how much more can be learned about patients and their families. Reflect on the experiences, and then make house calls to more continuity patients and families.
- Accompany a visiting nurse (VN) on patient calls to see them in action and learn the best ways to utilize their services. While there, learn more about places and neighborhoods where other continuity clinic patients live.
- Go to school with a continuity patient and participate in a psycho-educational evaluation, individualized education plan, session regarding occupational, physical, or speech and language therapy, and/or parent conference.
- Attend occupational therapy sessions with continuity patients
INTRODUCTION

This chapter provides a sample calendar of general continuity practice activities. The month-by-month format serves as a reminder to continuity clinic directors as to administrative procedures (e.g., scheduling, reporting, distributing), important predictable tasks (e.g., orientation for new house officers) and other timely events and communications. Directors are encouraged to adapt this calendar to their own program needs and responsibilities.
JULY: TRANSITION MONTH: (You’ll get through it!)

CHECK
Schedules
Check for conflicts due to work hours, national holidays and major religious holidays
House officers’ (HO) vacations/conflicts (double check)
Faculty vacations/meetings (coverage arranged?)

DISTRIBUTE
Schedules for month
Attendings, conferences, rotation assignments, telephone triage assignments, videotaping or observation sessions

PREPARE
Statistics for prior month
Patient appointments made/kept (distribute results, file)
Quarterly reports
For each HO, average number of patients seen per/week
For each HO number clinics attended for previous academic year
(4th quarter review)
Clinic business status (distribute results, file)
Annual report
Summary of past 4 quarters (distribute results, file)
End year survey results
For August distribution to staff, advisory committee

COLLECT
Faculty Evaluation forms
For house officers continuing in the program

SET GOALS
All house officers
In clinic discussions/recording of yearly goals. Development of Individual Learning Plans (ILP)

NEW HOUSE OFFICERS AND NEW PRECEPTORS

ORIENT
All new house officers
In clinic group session orientation

DISTRIBUTE
Continuity manual
All new house officers and preceptors

REMOVE
From mailing list
HO advisory committee members who have completed training

ROUTINE RECORDS KEPT ON CALENDAR:
BIRTHDAYS: staff, faculty, house officers
HOLIDAYS: federal, medical school, hospital, department, religious
RED LETTER DAYS: special days requiring schedule adjustments
MEETINGS: staff, faculty, advisory board
AUGUST

BACK TO SCHOOL APPOINTMENT FLURRY!

CHECK
Schedules
HO vacations/conflicts (double check)
Faculty vacations/meetings (coverage arranged?)
Look ahead (next 4-6 mos.) HO’s vacation conflicts

DISTRIBUTE
Schedules for month
Attendings, conferences, rotation assignments,
television triage assignments, video recording or
observation sessions

PREPARE
Statistics for month
Patient appointments made/kept (distribute results, file)
For each HO average number of patients seen per week

REMINDD
Faculty schedule tasks
Initial observation/feedback sessions for HO’s

SEND
Chief resident(s) a memo
Requesting HO replacements for vacancies on advisory
committee

ADD
To mailing list
New advisory committee members names/addresses

PRESENT
End of year survey results
To staff

REVIEW
Influenza immunization
CDC recommendations: Who needs it and when?

ROUTINE RECORDS KEPT ON CALENDAR:
BIRTHDAYS: staff, faculty, house officers
HOLIDAYS: federal, medical school, hospital, department, religious
RED LETTER DAYS: special days requiring schedule adjustments
MEETINGS: staff, faculty, advisory board
# SEPTEMBER

**PHEW! ALL IS RELATIVELY CALM**

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<th>CHECK</th>
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<td>DISTRIBUTED</td>
<td>Schedules for month</td>
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<td>Evaluation forms</td>
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<td>To be given to faculty for evaluation of new house</td>
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<td>officers (in face-to-face feedback session) by the end of October</td>
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<td>PREPARE</td>
<td>Statistics for prior month</td>
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<td>Patient appointments made/kept (distribute results, file)</td>
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<td>PRESENT</td>
<td>End of year survey results</td>
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<td>To advisory committee</td>
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<td>PLAN</td>
<td>Influenza immunization</td>
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<td>Strategy</td>
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<td>Schedule for winter</td>
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<td>holidays</td>
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<td>closed days; staff and faculty holidays</td>
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**ROUTINE RECORDS KEPT ON CALENDAR:**

- **BIRTHDAYS:** staff, faculty, house officers
- **HOLIDAYS:** federal, medical school, hospital, department, religious
- **RED LETTER DAYS:** special days requiring schedule adjustments
- **MEETINGS:** staff, faculty, advisory board
OCTOBER

HALLOWEEN/PUMPKINS

CHECK  Schedules  HO vacations/conflicts (double check)
Faculty vacations/meetings (coverage arranged?)
Look ahead (next 4-6 mos.) HO’s vacation conflicts
Look for upcoming HO level advancement (PL1 to PL2)

DISTRIBUTE  Schedules for month  Attendings, conferences, rotation assignments,
telephone triage assignments, video recording sessions
Evaluation forms  To be given to faculty for evaluation of new house officers (in face-to-face feedback session) by the end of October

PREPARE  Statistics for prior month  Patient appointments made/kept (distribute results, file)
Quarterly reports  For each HO average number of patients seen per week
(1st quarter)  For each HO number clinics attended for first quarter
Clinic business status (distribute results, file)

COLLECT  Evaluations  From faculty of new house officers

INFORM  Plans for influenza Immunization  House officers instructed as to who needs it and when

ROUTINE RECORDS KEPT ON CALENDAR:
BIRTHDAYS:  staff, faculty, house officers
HOLIDAYS:  federal, medical school, hospital, department, religious?
RED LETTER DAYS:  special days requiring schedule adjustments
MEETINGS:  staff, faculty, advisory board
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<thead>
<tr>
<th>Action</th>
<th>Task Description</th>
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<td>telephone triage assignments, video recording sessions</td>
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<td>Semi-annual evaluation forms: To faculty with reminder to schedule</td>
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<td>face-to-face feedback sessions (before end-of-the-year holidays) with house officers</td>
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<td>not new to program</td>
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<td>PREPARE</td>
<td>Statistics for prior month: Patient appointments made/kept (distribute results, file)</td>
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<td>For each HO average number of patients seen per week</td>
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<tr>
<td>SCHEDULE</td>
<td>Holiday activities: For December</td>
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<tr>
<td>COLLECT</td>
<td>Evaluations: From faculty of new house officers</td>
</tr>
</tbody>
</table>

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- **HOLIDAYS:** federal, medical school, hospital, department, religious
- **RED LETTER DAYS:** special days requiring schedule adjustments
- **MEETINGS:** staff, faculty, advisory board
### DECEMBER
### TIS THE SEASON

#### HOLIDAY ACTIVITIES!

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<td>Look for upcoming HO level advancement (PL1 to PL2)</td>
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<th>DISTIBUTE</th>
<th>Schedules for month</th>
<th>Attendings, conferences, rotation assignments, telephone triage assignments, video recording sessions</th>
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<tr>
<th>PREPARE</th>
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<tr>
<th>SCHEDULE</th>
<th>Holiday activities</th>
<th>For December</th>
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<tr>
<th>COLLECT</th>
<th>Semi-annual house officer evaluation forms</th>
<th>From faculty</th>
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<tbody>
<tr>
<td></td>
<td>Semi-annual house officer evaluation forms</td>
<td>From staff and parents</td>
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<thead>
<tr>
<th>REVIEW</th>
<th>Individual Learning Plans</th>
<th>Faculty to discuss ILPs with residents and review goals for second half of the year</th>
</tr>
</thead>
</table>

**ROUTINE RECORDS KEPT ON CALENDAR:**

- **BIRTHDAYS:** staff, faculty, house officers
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- **RED LETTER DAYS:** special days requiring schedule adjustments
- **MEETINGS:** staff, faculty, advisory board
JANUARY

THE VOLUME OF SICK VISITS KEEPS YOU HOPPING!
TOO LITTLE TIME TO TEACH!!
(Remember small “bites” are very effective in teaching and giving feedback to houseofficers)

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<tr>
<th>Schedules</th>
<th>HO vacations/conflicts (double check)</th>
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DISTRIBUTE
<table>
<thead>
<tr>
<th>Schedules for month</th>
<th>Attendings, conferences, rotation assignments, telephone triage assignments, video recording sessions</th>
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<tbody>
<tr>
<td>Forms for semi-annual evaluation of faculty and program</td>
<td>By those house officers not new to the program</td>
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PREPARE
<table>
<thead>
<tr>
<th>Statistics for prior month</th>
<th>Patient appointments made/kept (distribute results, file)</th>
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<tbody>
<tr>
<td>Quarterly reports</td>
<td>For each HO, average number of patients seen per week</td>
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<td>For each HO, the number of clinics attended for the first 6 months of the year (distribute results, file)</td>
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<td>HO should discuss with Chief Residents if they are in danger of not meeting the requirement of 36 clinics per year</td>
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BIRTHDAYS: staff, faculty, house officers
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MEETINGS: staff, faculty, advisory board
### FEBRUARY

**TAKE HEART!!**

**SPRING ISN’T FAR AWAY**

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<td>Look ahead (next 4-6 mos.) HO’s vacation conflicts</td>
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<td>Look for upcoming HO level advancement (PL1 to PL2)</td>
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<th>DISTRIBUTED</th>
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<td>Attendings, conferences, rotation assignments,</td>
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<td>telephone triage assignments, video recording</td>
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<td></td>
<td>sessions</td>
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<td>Forms for semi-annual</td>
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<td></td>
<td>evaluation of faculty</td>
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<td>and program</td>
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<td>For each HO, average number of patients seen per week</td>
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<tr>
<th>COLLECT</th>
<th>Semi-annual evaluation forms of faculty and program</th>
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<td>From house officers</td>
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<th>REMIND</th>
<th>Faculty to schedule</th>
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<td>Second observation/feedback sessions for house officers</td>
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</table>

**ROUTINE RECORDS KEPT ON CALENDAR:**

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- **RED LETTER DAYS:** special days requiring schedule adjustments
- **MEETINGS:** staff, faculty, advisory board
## MARCH

### HOUSE OFFICER MATCHING PROGRAM – GOOD LUCK!

**CHECK**
- Schedules
  - HO vacations/conflicts (double check)
  - Faculty vacations/meetings (coverage arranged?)
  - Look ahead (next 4-6 mos.) HO’s vacation conflicts
  - Look for upcoming HO level advancement (PL1 to PL2)

**DISTRIBUTE**
- Schedules for month
  - Attendings, conferences, rotation assignments,
    telephone triage assignments, video recording sessions
  - Semi-annual evaluation of faculty and program

**PREPARE**
- Statistics for prior month
  - Patient appointments made/kept (distribute results, file)
  - For each HO, average number of patients seen per week

**ADJUST**
- Schedules
  - For end of June/beginning of July transition
    (i.e., closed days, orientation for new house officers,
    for some wks. only low patient #'s or block completely)

### ROUTINE RECORDS KEPT ON CALENDAR:
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- **MEETINGS:** staff, faculty, advisory board
### APRIL

**TIME TO START END OF YEAR TRANSITIONS**

| CHECK  | Schedules | HO vacations/conflicts (double check)  
|        |           | Faculty vacations/meetings (coverage arranged?)  
|        |           | Look ahead (next 4-6 mos.) HO’s vacation conflicts  
|        |           | Look for upcoming HO level advancement (PL1 to PL2)  

| DISTRIBUT | Schedules for month | Attendings, conferences, rotation assignments, telephone triage assignments, video recording sessions  

| PREPARE  | Statistics for prior month | Patient appointments made/kept (distribute results, file)  
|          | Quarterly reports (3rd quarter) | For each HO average number of patients seen per week. For each HO, the number of clinics attended for the first 9 months of the year. HO should discuss with Chief Residents if they are in danger of not meeting the requirement of 36 clinics per year. Business statistics (distribute results/file)  

### EARLY TRANSITION PLANNING

| SEND | Memo | To outgoing house officers about termination process, how to reassign special patients  
| REMIND | Faculty | To discuss “special” patient reassignment issues with exiting house officers To initiate termination discussions with house officers  

| ASSIGN-MATCH | Incoming house officers | To hospital-based and community-based preceptors To half-day assignments for year  

| INPUT | House officer schedules | Templates for upcoming academic year  

| REQUEST | From Faculty/ HO’s/ staff | Input regarding changes in the next edition of the Continuity clinic manual; end of year survey; Continuity Clinic Conference topics  

| REVISE | Continuity manual Evaluation forms of faculty and residents  
|        | End of year survey  
|        | List of Continuity Clinic Conference topics  

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- **MEETINGS:** staff, faculty, advisory board
IMPORTANT REMINDERS REGARDING TRANSITION SCHEDULING
FOR UPCOMING ACADEMIC YEARS

(SHOULD BE DONE AS EARLY AS POSSIBLE – APRIL, MAY, JUNE)

As soon as dates are established, schedules should be adjusted in the computer and
reminders added to monthly calendars.

Holidays - federal, medical school, hospital, department, religious

Red Letter Days - important days specific to program, recurring annually

House officer retreats

   PL-1
   PL-2
   PL-3
   PL-4

Staff retreats
Faculty retreats
Examinations
   In-service examination
   USMLE examinations
   Other licensing examinations

Special Courses
   House officer teaching courses
   PALS
   Home university CME courses
   House officer individual schedules
   House officer vacations
   House officer conflict days

ROUTINE RECORDS KEPT ON CALENDAR:

BIRTHDAYS: staff, faculty, house officers
HOLIDAYS: federal, medical school, hospital, department, religious?
RED LETTER DAYS: special days requiring schedule adjustments
MEETINGS: staff, faculty, advisory board
MAY
A LOT TO DO!!

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<td>telephone triage assignments, video recording sessions</td>
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<td></td>
<td>Semi-annual house</td>
<td>To all faculty with reminder to schedule face-to-face</td>
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<td>officer evaluations</td>
<td>feedback sessions for house officers leaving the program</td>
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<td>forms</td>
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<td>End of year survey</td>
<td>To all HO, faculty, staff</td>
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<tr>
<td>PREPARE</td>
<td>Statistics for prior</td>
<td>Patient appointments made/kept (distribute results, file)</td>
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<td>month</td>
<td>For each HO average number of patients seen per week.</td>
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<tr>
<td>PRINT/ORDER</td>
<td>Revised Continuity</td>
<td>For distribution to incoming house officers and for new</td>
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<td>Manuals</td>
<td>staff and preceptors</td>
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<td>Door name plates,</td>
<td>For incoming house officers</td>
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<td>name tags, business</td>
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<td>cards</td>
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<td>COLLECT</td>
<td>Annual faculty</td>
<td>From all house officers</td>
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<td>evaluation forms</td>
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<td>REMIND</td>
<td>Faculty and HO’s</td>
<td>About termination discussions with patients</td>
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<tr>
<td>RECORD</td>
<td>For academic year</td>
<td>Birthdays including all new house officers, faculty, staff</td>
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<tr>
<td>MAILINGS</td>
<td>To incoming HO’s</td>
<td>Include continuity transition plans and continuity assignments. Invite incoming house officers to visit “unofficially” whenever they have the opportunity</td>
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<tr>
<td>PLAN</td>
<td>End of year celebration</td>
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<td>and awards</td>
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HOLIDAYS: federal, medical school, hospital, department, religious
RED LETTER DAYS: special days requiring schedule adjustments
MEETINGS: staff, faculty, advisory board
## JUNE
### HUGE TRANSITION MONTH!

**CHECK**
- **Schedules**
  - HO vacations/conflicts (double check)
  - Faculty vacations/meetings (coverage arranged?)
  - Look ahead (next 4-6 mos.) HO’s vacation conflicts
  - Look for upcoming HO level advancement (PL1 to PL2)

**DISTRIBUTE**
- **Schedules for month**
  - Attendings, conferences, rotation assignments, telephone triage assignments, video recording sessions

**COLLECT**
- **Semi-annual house Officer evaluation forms**
  - From all faculty for those officers leaving program
  - End of year survey
  - From all HO, faculty, staff

**HOLD**
- **End of year celebration**
  - Recognize each house officer individually
  - Consider including staff and faculty recognition

**SEND**
- **Memo to Chief Residents**
  - Requesting house officer replacements for vacancies on advisory committee
  - Thank you letters
  - To outgoing Chief Residents; advisory board members; community preceptors for their effort on behalf of continuity program/teaching.

**ADD**
- **New advisory committee members**
  - Names/addresses to mailing list

**PREPARE**
- **Orientation materials**
  - For each new house officer
  - Clinic files/learning
  - For new arrivals (new names on mail boxes, resident portfolios)

**ORIENT**
- **New Preceptors; arrange convenient meeting time.**
- **Distribute to new faculty Continuity Clinic manual.**
- **Ensure that faculty have appropriate computer access/passwords.**
  - Make sure to orient faculty to on-line resources (i.e. Blackboard, evaluation tools)

### ROUTINE RECORDS KEPT ON CALENDAR:
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- **HOLIDAYS:** federal, medical school, hospital, department, religious
- **RED LETTER DAYS:** special days requiring schedule adjustments
- **MEETINGS:** staff, faculty, advisory board
INDIVIDUALIZED ADDITIONS TO CALENDAR

FACULTY
Workshops, retreats, faculty development
For new preceptors
Session I (Weekend – Sept./Oct.)
Session II (Full day – Dec.)
Session III (Full day – Mar.)
Session IV (Weekend – May)

For established preceptors
Advanced faculty development retreat/winter preceptor meeting
Yearly update of faculty CV’s, CME credits, publications, presentations
Annual performance evaluations for the department

For all preceptors of incoming house officers
Meeting April/May

Monthly/quarterly CME evening and preceptor meeting
Yearly update of faculty CV’s, CME credits, publications, presentations
Annual performance evaluations for the department
Schedule periodic site visits at community-based practice sites.
Continuity Clinic Director consider visiting other clinic sessions to provide feedback
to faculty (established and new)

HOUSE STAFF
PL-3 Termination seminar-Patients/Office staff (Dec.)
Demonstration of immunization delivery competence

FACULTY AND HOUSE STAFF COMBINED
Initiation of clinic quality improvement projects
Match for incoming house staff with preceptors and office sites
（office site visits in the early spring）
End of year dinner for departing house officers and preceptors (May)

STAFF
Workshops, retreats, staff development
Annual performance evaluations
Office staff luncheon (late spring)

SPECIAL SOCIAL EVENTS
Parties, nurses “day”; “secretaries “day
PRACTICE/CONTINUITY CLINIC
  Equipment and facility maintenance
  Annual equipment calibration: scales, blood pressure machines, tympanometer,
  Audiometer
  Financial and budgetary review – other performance markers
  Annual review of appointments, templates, changes

ADVISORY COMMITTEE
  Schedule of meetings: - monthly during periods of transition
  - quarterly during stable periods
CHAPTER 3
PRACTICE MANAGEMENT ISSUES FOR THE CONTINUITY CLINIC
Cheryl Tierny, MD and Michael Steiner, MD
(Contributing Residents: Drs. Tarayn Fairlie, MD, Aimee Velasco, MD, Paolin Chi, MD, and Laura Kester, MD)

I. MANAGEMENT OF HOSPITAL-BASED RESIDENT AND FACULTY-RESIDENT CONTINUITY PRACTICES

A. History of Hospital-Based Continuity Practices

Historically, continuity practices generally have been based in pediatric outpatient clinics within academic medical centers. These sites generally have been home to full-time pediatric faculty, responsible for supervising and providing outpatient medical care. The majority of patients, for whom care has been provided, have been those from families with insufficient financial resources and who have had little chance of receiving consistent medical attention elsewhere.

In theory, the hospital-based resident practice model offers residents the opportunity to provide true continuity of care for their patients. As a result, patients/parents identify them as their primary provider.

Today, hospital-based resident practices often have high operating costs and are somewhat inefficiently run. This is especially true because of the time commitment and resources needed to maintain the educational environment and the inability of residents to see large volumes of patients in a timely manner. In addition, hospital administrative decision makers may be unwilling to commit the resources necessary to allow the practice to run as smoothly as possible. (See also Chapter 9 – Funding Issues)

Based on data from a survey conducted a number of years ago by Dumont-Driscoll, et al, 76% of teaching programs used hospital-based clinics for the continuity experience. The remainder identified other sites including hospital-affiliated professional locations, private practice offices, health departments, and community and neighborhood health centers.

Increasing economic pressures and the advent of managed care have resulted in some academic centers creating a "hybrid" model combining both faculty and resident practices. Academic generalists in many centers are encouraged
to develop a general pediatric practice with the intent of becoming financially self-sustaining. To maintain a sound patient base for teaching and primary care, they have to compete for enrollees from managed health care plans. These practices may remain under varying degrees of control by the pediatric department or hospital. As such, the administrative structure more closely resembles that of a hospital-based practice than a private community practice.

Administratively, the benefits which result from combining faculty and resident practices may help to make the resident component of the practice run more efficiently. Managing a clinic modeled along the lines of a private practice office should help to prepare residents for a career in primary care.

In either a resident or faculty-resident practice, a balance must be struck to ensure excellent patient care while maintaining resident-patient continuity and providing an optimal educational experience. As continuity directors, it is essential to develop and nurture both the teaching and the patient care missions.

B. Setting-Up a Hospital-Based Continuity Practice

1. Facilities

**Reception Area:** The reception area is essential. It offers the first impression of the practice for patients and families. It should be spacious, well designed, and well maintained. Pictures on the walls should be selected for the age appropriate patient population. Books and magazines should be available for parents to read to children, while other reading material should be relevant to child-parenting issues (optimally written in Spanish and/or English, or, if necessary, other native languages).

Consideration of separate waiting areas for patients of different ages is important. Adolescent clinics may function independently in hospital-based settings, but in a hybrid practice, as in a community practice, adolescents as well as infants and children are often seen in the same facility by the same primary care providers. Though not deemed essential by the American Academy of Pediatrics, consideration may be given to providing separate waiting rooms for sick and well children.

The reception area also may be used for conducting educational sessions with families, viewing educational videotapes, and engaging in play therapy utilizing child life workers. These strategies not only provide educational opportunities, but also help to preoccupy families waiting to be seen by a physician. Early literacy programs, such as *Reach Out and Read*, can be conducted in the reception area, utilizing community volunteers as readers.
**Exam Rooms:** Exam rooms need to be decorated in a way that is appealing to children. Examination tables as well as chairs for adults, children, and the provider are necessary. Readily available supplies, such as an otoscope, ophthalmoscope, tape measure, tongue blades, and alcohol wipes allow for greater efficiency and smoother patient flow.

Optimally, there should be a minimum of at least one to two exam rooms per resident/faculty member seeing patients. With increasing levels of experience, residents will function more efficiently if they have 2 or more rooms in which to see patients. This saves time, allowing the provider to work continuously, while nursing support staff usher other patients/families to rooms, prepare patients for examination, have parents fill out screening forms and questionnaires, or set up for the administration of vaccines.

Ideally, room availability allows the provider to have a family wait for test results, consultation, or procedures, while they continue to provide care in another room.

Nameplates on the doors allow staff and families to know where providers are working. Nameplates also enhance resident enthusiasm and esteem. A name board at the practice entrance and/or pictures of resident and faculty providers and clinic staff is helpful to demonstrate the group practice concept to new patients and create a more welcoming environment.

**Vision/Hearing Room:** An area should be created within the clinic where vision and hearing screening can take place. This area should be as soundproof as possible to assure accurate visual and audiometric results. If no room is available, a portable audiometer and/or visual screening device can be placed on a moveable cart providing the option for screening in the patient’s room. Staff members should be trained to meet quality assurance standards in performing these screenings.

**Immunizations:** Immunizations may be administered in the exam room at the end of the visit. Otherwise, a designated room for administration of immunizations may be necessary. The potential advantage to having a single immunization room is that with centralized storage & refrigeration, vaccine vials, needles, syringes, etc. are more easily accessible to nursing staff.

**Phlebotomy:** Optimally, the site for obtaining patient blood specimens should be near the resident clinic, with easy access for patients/families. The area should be private and with a door that can be closed if a child is crying or upset. It should be large enough to accommodate a parent comforting a child or for a child to recline while blood is being drawn. If phlebotomy services are not on site in the clinic, but in a nearby facility, the resident and/or support personnel should provide specific instructions and clear directions as to its location.
**Laboratory:** Individual clinic-based laboratories need to obtain Clinical Laboratory Improvement Amendments (CLIA) clearance. Obtaining such clearance can be difficult and expensive. If the site maintains its own lab, receipt of specimens and consistent recording of results needs to be clearly documented. Most teaching hospitals require (if for no other reason than quality assurance) that all lab specimens be handled through the main hospital lab, whether or not the actual testing of specimens is to be performed there. Since health insurance contracts often stipulate that lab work be sent only to their own designated lab facilities, arrangements generally are made between the hospital and the outside lab to create a seamless transfer.

Whether a clinic maintains its own lab or works with a hospital-based lab, clinic directors need to decide what tests will be readily available for patient care. Some standard office based labs include urine pregnancy tests, hemoglobin, qualitative urinalysis, stool for occult blood, and rapid strep tests. Additionally, if caring for sexually active adolescents, an onsite microscope for viewing specimens is necessary.

**Precepting Area:** A dedicated area for a preceptor and resident to meet is essential to help facilitate confidential discussion of patient related issues. It must have space for residents to do charting, make phone calls, fill out forms, etc.

Some clinics have advocated for a “pod system” where small mixed groups of nursing assistants, nurses, residents, and attendings share a common space to improve communication and efficiency of care. Whether a pod system or a traditional room for precepting is used, the area should be centrally located in the clinic and easily accessible.

**Conference Room:** The conference room space should be separate from the precepting area. It can be used for teaching housestaff and medical students and should be spacious enough to accommodate clinic staff meetings. In addition, it could serve as a reference library containing hardbound texts and computers with internet access. On occasion, it may be used for family conferences or case management meetings.

2. **Staffing**

Numbers and types of staff needed to maintain an efficient continuity clinic operation depend upon the physical location of the practice and its role in the structure and function of the hospital or healthcare center.
hospital or healthcare center. The clinic may have to share registration and/or medical record space with a number of pediatric specialists or other (adult) primary care providers. This arrangement may have the potential for allowing practices to share the cost of personnel needed to support similar functions.

Personnel able to perform more than one task offer increased flexibility, especially when work demand increases or when other key personnel are absent. Efficiency can be gained by cross-training personnel. Care should be taken however to develop clear job descriptions for everyone.

Listing tasks essential to the daily operation of the continuity clinic is a helpful first step. This can be accomplished by considering all of the steps involved in a typical patient encounter (see Appendix 4-1). For continuity clinic settings, key personnel positions are needed. A good online resource for continuity directors in the design and management of an outpatient clinic can be found on the American Academy of Pediatrics (AAP) website: http://practice.aap.org/topicBrowse.aspx?nodeID=2000

**Registrars and Receptionists:** Key functions performed by registrars and receptionists often overlap and may be performed by either. This is somewhat dependent upon whether patient registration occurs on site or at a separate centralized location. Registration and billing duties also may be the responsibility of a single individual.

The registrar’s primary task is to collect patient-specific demographic and financial information, critical to the operation and financial success of the clinic. Receptionists also may perform patient registration and clinic check-in functions. Other primary duties include answering the telephone and routing calls to appropriate personnel, directing patients to waiting and/or treatment areas, scheduling appointments, and placing reminder calls to patients for up-coming appointments. As the appearance of the reception area tends to give families a first impression of the clinic itself, so the receptionist projects an image of the interpersonal experience the family can expect. Clearly, courtesy, knowledge, the ability to establish comfortable relationships with patients, and a calm demeanor are optimal attributes for a person in this position.

**Nurses and Medical Nurse Assistants:** These personnel are grouped together because they share clinical patient support functions. The level of responsibility assumed depends upon the level of training, years of clinical practice experience, hospital policies and procedures, and State Board of Nursing regulations. Nursing personnel job descriptions must be specific enough to promote clear accountability for task completion. Major duties include maintaining efficient patient flow, cleaning and stocking examination rooms, triaging and screening patients for clinical encounters,
assisting providers with diagnostic procedures (phlebotomy, lumbar puncture, supra-pubic aspiration), and administering treatments (inhalation therapy; immunization administration; other injections), educating patients and managing telephone triage. Nurses play an important role in quality assurance efforts, particularly in the accurate and timely documentation of administered immunizations.

**Health Care Educators:** As managed care increasingly becomes the accepted model for the financing and delivery of health care services, health educators may play a critical role in the management of an efficient and successful continuity clinic operation. Primary functions include helping patients and parents to understand and navigate the complexities of their particular health care system and providing health information. Health educators may also contribute to the development and distribution of patient education materials for the continuity clinic.

**Social Workers:** The clinic social worker assists patients and families with social, emotional, and financial aspects of their care, and provides information about and referrals to community resources. In so doing, the social worker may actually function as the case manager and be called upon to provide continuity for patients and families between inpatient and outpatient service providers and community social service personnel. Some social workers may provide short-term therapeutic interventions (e.g., crisis counseling; substance abuse counseling). The social worker may function as a liaison with Child Protective Services for cases of child maltreatment. Characteristics that are particularly important in this position include the ability to work cooperatively with other members of the health care team and to communicate effectively with colleagues, patients, and families. Since it may be difficult to sustain financial support for the position of a social worker in an academic health center, some of the aforementioned tasks, as well as case management functions, may be assumed by nurses, other support staff, and even primary care providers.

**Preceptors:** Preceptors in the academic continuity setting generally consist of full-time or part-time faculty generalist pediatricians. Provided appropriate incentives and support are offered as part of a recruiting effort, it may be possible to attract community pediatricians to serve as preceptors in the academic setting. Invitations to potential preceptors should include clear information regarding the educational goals to be realized through the continuity clinic experience and a discussion of the benefits, both philosophical and tangible. For more information regarding successful faculty recruitment and development, see references below: DeWitt and Roberts - *Pediatric Education in Community*

If the clinic is organized so that residents provide the majority of patient care, the preceptor’s major responsibilities should be to foster professional responsibility among the residents, oversee patient care delivery, provide appropriate educational experiences, give feedback, and evaluate resident performance. In the “hybrid” model, combining a strong faculty practice component with the resident continuity clinic practice, preceptors have the additional responsibility of providing care for their own panel of patients.

Continuity directors must acknowledge the potential stress created by the demands of striving for excellence in teaching, providing quality care to a panel of patients, and the other responsibilities of academic generalists, including clinical research. Creating a strong and supportive faculty development program for preceptors will enhance their enjoyment of and effectiveness in the teaching role and help preceptors avoid burnout in the continuity clinic setting.

Ideally, each team of residents should have an identified preceptor throughout the academic year. In some institutions, residents have the same preceptor throughout their residency training. In other training programs a resident may have more than one preceptor or may in fact be offered the opportunity to change preceptors annually. Optimally, continuity between a preceptor and a resident enhances continuity of care for the resident’s panel of patients. This may be most important in a managed care environment where residents are not recognized as the primary care providers.

**Clinic Manager:** Although the primary responsibility for overseeing the continuity clinic operation is that of the director, identification of a support person highly-invested in the quality of the day-to-day operation of the clinic can greatly enhance the success of the program for residents and patients. This responsibility may be assumed by a member of the nursing staff, who shares other nursing duties, or by an administrative staff person. Primary tasks may include: 1) orienting all staff members as to the goals and objectives of the continuity clinic model; 2) developing clinic systems operations, e.g., appointment scheduling and telephone triage; 3) monitoring trends, e.g., no-show rates; 4) devising interventions to correct problems in negotiating with managed care organizations; 5) serving as an additional liaison between the continuity clinic and the residency training director.

The continuity director may need to educate hospital administrators regarding the value added to a clinic operation overseen by a skilled manager. If administrative financial support for such personnel is lacking or insufficient, it may be necessary for the continuity director to identify potential resources of outside financial support, e.g., training grants.
3. Patient Recruitment

Patients need to be actively recruited to maintain practice viability, provide a source of income, and serve as the core for resident education. The number of patients in a resident practice should be sufficient to meet RRC guidelines. Potential sources of patient recruitment are: 1) from within the hospital; 2) the obstetrics department or clinic; 2) newborn nursery and neonatal intensive care unit; 3) emergency department; 4) inpatient units.

It is important to maintain a professional stance in the pediatric physician community by not encouraging transfer of patients to the continuity clinic from other pediatricians or physician practices. Maintaining and developing a collegial relationship with other physicians in the community is imperative.

Offering prenatal pediatric visits can help expectant parents gain insight as to what the clinic has to offer. Future growth of the practice may occur as a direct result of established patients and their families referring friends and relatives or hospital/clinic employees choosing to have their children cared for by clinic physicians. Clinic information brochures may help to encourage hospital personnel to consider this option. It is important for clinic faculty to be listed as physicians on a number of managed care contracts in order to attract and recruit new patients into the clinic.

4. Business Components

The degree of responsibility, and therefore the degree of control, that a continuity director has for maintaining the clinic budget varies with the institutional structure. If the clinic is hospital-based or part of an integrated health system, the budget may be integrated into the institutional financial framework. However, the clinic (or general pediatric ambulatory operation) may be identified as a "responsibility center" or "cost center" to which specific revenues will be credited and costs assigned. In 1989, Berkelhamer reported the results of a survey of hospital-based general pediatric clinics. At that time, the report indicated that 61% of 82 institutions responding to the survey had a budget for the general pediatric clinics separate from the overall hospital budget.

For clarity, the continuity director should seek assistance in understanding the institutional budget process. Larger institutions may simply assign an individual as liaison between the finance office and specific cost centers, divisions, or departments.
In general, fiscal management of a clinic occurs through three primary activities. Budgeting is the decision-making phase. Through planning and analysis, expected revenues and costs are identified by the cost center and approved for the coming fiscal year. Many academic health centers operate on a fiscal calendar of July 1 through June 30 in sync with the academic calendar. Accounting is the activity through which the budget is implemented; revenues are credited and expenses debited. The continuity director should pay particular attention to the auditing phase of fiscal management. This is the activity through which evaluation and feedback in reference to budget predictions are made. On at least a monthly basis, clinic directors should take notice of any trends in both revenues (e.g., patient revenues) and expenses (e.g., direct costs of staffing the clinic). Any significant variance from budget projections should be identifiable. Consultation by the continuity director with the financial analyst for the clinic may be helpful in identifying underlying causes for variance.

Institutions vary with respect to whether key business functions are physically located within the clinic area or elsewhere in the health center. If business personnel are on-site in the clinic, they should be accessible to patients and staff. If business functions are located elsewhere, clinic staff must be able to assist patients and families in directing them to the business site or in providing access to the appropriate personnel by telephone.

The continuity director must be confident that controls exist to ensure that all patients seen during the day are accounted for and appropriately charged. This is critical to maintaining the financial viability of the clinic operation and to serve as a model for residents planning to enter primary care. A helpful AAP online website in this regard is: http://practice.aap.org/topicBrowse.aspx?nodeID=2000

With increased enrollment of continuity clinic patients in managed health care plans, it may be helpful for the continuity director to become familiar with institutional practices regarding contract negotiation and capitation distribution. If contract negotiation is conducted by institutional administrative staff, the continuity director may provide valuable information regarding the appropriateness of services the clinic is required to provide.

The Medical Group Management Association (MGMA) at www.mgma.com publishes an annual volume entitled Cost Survey. This provides survey information and benchmark data gathered from their membership as to
medical practice charges, revenues, costs, earnings, staffing, and other financial indicators from the preceding year.

5. Medical Records:

Medical Records:
Documentation of medical record information is site specific, varying from a number of paper formats to an electronic medical record (EMR) system or combination of both. Some clinic sites, limited by the financial constraints of a costly electronic system, maintain a paper format, either a single, hospital-wide record for each patient, or clinic-specific medical records.

The advantage of the single record is that it contains all of the patient's medical information, including inpatient and outpatient data, consultations, imaging study reports, and lab results. Unfortunately, these charts tend to be bulky and often difficult to access.

A clinic-specific medical record can be kept on site and is usually less cumbersome. The disadvantage is that it is difficult to make accessible to fellow physicians in other clinic sites. To partially circumvent the problem, some programs provide dictation and transcription services, so that shared information is more readily accessible.

An electronic patient record system is an attractive option. Start up costs and initial time commitments are significant. The distinct advantage is that an electronic patient record is accessible to any authorized provider at any time. It is an excellent system for data collection, research, and RRC requirements.

C. Maintaining a Successful Hospital-Based Program

1. Maintaining Continuity

Appointments for health supervision visits should be made with a consistent primary care provider. Siblings within a family should maintain continuity with one provider. The importance of continuity should be emphasized to families, residents, and registration staff. Residents are assigned as primary providers to patients at the beginning of their training, and may in fact assume the care of patients previously followed by a graduating resident. A new intern should be provided with a list of these patients and the associated problem lists. Patient panel size and variety should be monitored to ensure compliance with RRC guidelines.
When families enter the practice, they should be told the name of their continuity resident and, if appropriate, the faculty provider. Families should be given the personal business card of the faculty and/or resident or a generic business card indicating the provider's name. Parents should be encouraged to identify their child's provider by name when they call to make an appointment. To aid families in identifying their child's pediatrician, a computerized appointment system helps in linking a patient to his/her assigned provider.

When patients are hospitalized, every effort should be made to notify the resident provider and encourage his/her participation in patient management. In addition to meeting parental expectations, this avoids embarrassment when the provider has not been notified. If possible, having a team of physicians from the continuity clinic round on hospitalized patients helps enhance continuity of care.

2. **Registration**

Updating patient demographic information on a regular basis should be a priority. Being able to contact patients/families either by phone or mail/email is important for notifying them about changes in clinic policy, availability of vaccines (e.g., influenza vaccine), test results, and pending appointments.

Calculating patient no-show rates and keeping track of patient visits over time is important. By tracking the no-show rate and understanding monthly or daily trends, it may be possible to design interventions to maximize appointment compliance. Overbooking may be necessary in some cases, but can occasionally create a problem if all scheduled patients arrive at their appointed time. Strategies to minimize no-show rates include appointment reminders (via postcard or telephone).

3. **Telephone Triage**

A mechanism should be in place to handle telephone calls both during and after regular office hours. Managed Care Organization requirements may offer some guidance in this regard. Parents may be offered the option to page their provider directly and/or to call the clinic to speak with a physician or nurse. Having access to a physician/nurse in the clinic during working hours allows families to get direct and timely health care advice when needed. Night call coverage can be provided by a team of residents and/or back-up faculty. Telephone calls must be documented; those managed by residents should be periodically reviewed by the faculty. A telephone triage
curriculum can be developed with faculty backup to provide effective after-hours service to patients/families and to meet the Managed Care Organization requirements. Regional and national computerized telephone triage systems are available. Calls are answered by a trained staff member who uses a computer protocol to prompt questions and document answers.

4. **Quality Improvement**

A system should be formalized for providing feedback on the quality of resident medical record documentation. This may occur verbally or in a written format. Some programs utilize a chart audit form that is completed by the preceptor upon review of each resident telephone encounter (see Appendix 4-2). Quality Improvement programs must be consistent with Health Care Finance Administration (HCFA) guidelines as to documentation.

Continuity directors may be requested to participate in institutional Quality Improvement efforts. Applying a standardized approach to quality improvement as practice management issues arise can be a useful tool by which to involve multiple clinic personnel in problem solving. A QI process usually consists of understanding the current problem; selecting a specific target objective for improvement; analyzing the root causes of the problem; identifying and implementing potential solutions; evaluating the effect of solutions implemented; incorporating successful solutions into daily practice; and planning in regard to addressing other problem issues.

5. **Advisory Board**

Organizations tend to work better when all members have input and ownership in overall clinic function and maintenance. Regular staff meetings are helpful to enhance communication. These sessions provide a forum where staff members can express concerns, draw attention to problems, and jointly work toward solutions. An advisory board consisting of staff and faculty as well as residents can be helpful. For resident members, it provides insight as to clinic organization and function and allows them the opportunity to express their opinion.
6. Patient Reassignment Upon Resident Graduation

Termination of the resident-family relationship at the conclusion of each resident’s training should be addressed. A strong relationship may have developed between a resident and a patient/family. Based on past research, families prefer to be notified by the resident-provider of this impending transition. Such notification can take place at the time of a routine health supervision visit, or by letter or direct telephone contact. Parents occasionally express a desire to have some input into the choice of their new provider. (Serwint and Johnson)

II. MANAGEMENT OF COMMUNITY-BASED CONTINUITY PRACTICES

A. Advantages and Disadvantages

Assigning residents to private practitioners’ offices and other community health centers for their continuity experience is increasingly common among pediatric training programs. In part, this is due to current RRC guidelines. These guidelines call for a continuity experience which will prepare residents for the practice of general pediatrics and must expose them to issues of practice management. In the Dumont-Driscoll survey (1995) conducted between 1991 and 1992, one quarter of pediatric training programs had some residents in continuity sites in non-hospital settings. This number has gradually increased since that time.

The private practice/community-based site provides some opportunities not so easily replicated in the academic hospital venue. The exposure to this environment for residents gives them a better understanding and appreciation for how medical care is provided outside the academic center. There is greater opportunity for more patients to be seen per clinic session, a greater appreciation for the business aspects of running a private practice, and a broader perspective as to at least two of the six Accreditation Council of Graduate Medical Education (ACGME) mandated core competency guidelines → Systems Based Practice and Practice Based Learning and Improvement.

Patient-centered objectives, as in the academic setting, include an emphasis on preventive care; management of the low morbidity, high prevalence conditions; co-ordination of care of children with chronic conditions involving providers who are in distant or non-affiliated locations; and long-term care. Residents in these settings may see more
patients than those in hospital-based clinics due to structured practice efficiency and perhaps lower no-show rates.

Private physician-centered objectives for the resident in training include: recognition of the private clinician as a leader within his/her community; noting the participation of the practicing physician in community hospital activities; awareness of the clinician as a patient advocate. Although some of these learning objectives can be achieved in a hospital-based setting, community settings may offer the only opportunity for the resident to learn about the daily routine of the practicing physician.

Among the disadvantages of community-based continuity assignments for residents are the potential travel time and distance to various private clinic sites and the inability of the continuity director to closely monitor the resident experience outside the academic center. Evidence exists that in community settings, the residents may see more patients overall, but will have a smaller panel of continuity patients with whom they have repetitive contact (Rice, 1996).

Continuity directors interested in initiating a private practice/community-based continuity clinic option for residents are encouraged to contact or speak to fellow continuity directors with more extensive experience in this regard.

B. Setting-Up Community-Based Continuity Practices

1. Facilities

The participating resident should have at least one designated room per clinic session. It would be helpful if the resident were assigned patients that belong to his/her private patient panel. A name plate (containing the resident’s name) on the resident’s exam room door would give him/her a sense of being part of the healthcare team. Other factors that could help the resident feel part of the practice team include business cards or prescription pads with the resident’s name on them and assigning a mailbox or telephone message slot to the resident. Optimally, the resident should have access to a conference room or office to use a computer or reference materials. If a practice does not do screening procedures on site, the preceptor (or continuity director) should ensure that the resident has familiarity with procedures such as vision and hearing screening, tympanometry, and blood drawing.
2. **Staffing**

**Preceptors:** Highly qualified private practice preceptors with an interest in teaching and role modeling should be the primary factors in considering them as continuity preceptors. These are clinicians with a reputation for excellent patient care, well respected by their peers, dedicated to their profession, and very satisfied with the private practice of pediatrics. At a minimum, they should be board certified or at least board eligible.

In *Pediatric Education in Community Settings: A Manual*, edited by DeWitt and Roberts, a segment is devoted to Choosing Community Preceptors (p. 150). The concept they employed required that practicing pediatricians, interested in becoming preceptors, participate in a series of faculty development workshops before they could be matched with a resident. If these practitioners showed a commitment to teaching during the workshops and successfully completed the course, they were considered to be potential preceptor candidates.

Some of the best preceptors may in fact be former program trainees. In certain situations, particular practitioners may be selected because of a special population they serve. Often, only one resident is placed in each practice, so as not to overburden the practitioner or his/her staff. Although one practitioner should serve as the primary preceptor for each resident, other practitioners within the preceptor’s group should be willing to fill in for that individual in the event of his/her absence.

The potential preceptor should be committed to all components of the program, including participation in faculty development programs, resident evaluations, and periodic meetings or telephone calls to evaluate program success or problems. At least during the resident’s first year, the preceptor must be willing to lighten his/her patient schedule on the day the resident is scheduled to be there. In the best circumstance, the preceptor should allot time between patients to supervise, teach, and discuss patient care issues, primary care topics, etc. The practitioner needs to make a commitment to a full three years with one resident in order to meet the requirements of a three-year continuity experience.

Consideration in regard to other potential preceptors should include former ward attendings and those pediatricians involved in local professional organizations or community activities. For those practicing physicians
considering the possibility of becoming a preceptor, the American Academy of Pediatrics has developed a very informative starter kit. (see reference list)

The location of the practice site could be an important factor as to whether a resident is sent to a particular practitioner’s office. A limiting factor could be the distance the resident has to commute between the hospital and the practice site. With regard to certain in hospital rotations, some flexibility should be provided when a resident is assigned to a morning or afternoon continuity session. If possible, the need should be minimized for a resident to return to the hospital following an afternoon continuity session.

**Office Staff:** A practice-based continuity experience probably affords the resident more opportunity to learn about financial management, appropriate use of CPT and ICD-9 coding, billing procedures, managed care issues, personnel management, medical record maintenance and filing, computer systems, and patient scheduling. The preceptor should seek the cooperation of select office personnel to help achieve this educational goal for the resident. Willing office staff can play a significant role in helping the resident gain an understanding of overall office function and management procedures.

3. **Business Components**

Assigning residents to off-campus training sites may require prior approval by the institution’s Office of Graduate Medical Education so as to remain compliant with ACGME/RRC guidelines.

Continuity directors should be prepared to address potential issues as to whether patient billing can be affected by resident involvement in the examination and assessment of a practitioner’s patients. Some clarification may be needed as to whether Medicare/Medicaid requirements for faculty billing are applicable to practitioners in community teaching settings.

Developing a community-based program may require financial support, depending upon whether the entire continuity resident experience is conducted in community settings as opposed to the involvement of only a few private practice preceptors. Funds from either the primary teaching hospital or the pediatric department may be necessary to cover increased administrative efforts by the private practices. Alternatively, funding may have to be sought from outside sources, e.g., financial grants (see Chapters 8/9–Faculty Development/Funding Issues).

In most pediatric resident training programs, community preceptors are not compensated directly for their services. For the first year of residency
training, it is conceivable that private preceptors may incur some financial loss. However, there is some evidence to support the fact that junior and senior residents often account for an increased revenue stream for the private practice by seeing more additional patients per session than would be seen by the private practice preceptor alone. Sargent and Osborn (1990) found no loss of clinical income when residents were added to private practices.

Alternative ways of compensating private practice preceptors for lost income might include payment for attending a faculty development program, providing free parking at the hospital/medical center, free access to the medical library and/or computer databases and information systems, and paid tuition for medical education courses including CME accreditation. To enhance contact between preceptors and members of the teaching hospital, ready accessibility to a teleconferencing network may be established.

Of potential benefit to the practitioner is the readily available resource for recruitment of residents into private practice medicine, improved access to specialists, and improved patient care through the acquisition of new information. A clinical faculty appointment and/or possible admission to an honor society for clinical teaching may be added benefits, adding prestige to the individual practitioner and to his/her overall practice. For some practitioners, an attractive incentive may be the possibility of collaborative research.

4. Medical Records

A mechanism for tracking the resident’s patient panel must be developed. This can be in the form of a hand-written log, billing records, or database management systems. In some practices, this can be accomplished using an in-office electronic medical record system, though many office practices still maintain medical care information using printed forms. Regardless of the medical record system used, it would be helpful if there were a way to easily identify within the medical charts that the resident was involved in the patient’s examination and care.

5. Placing Residents in Practice

When first initiating the concept of a resident continuity clinic experience in private practice or community based sites, it may be best to begin with a pilot program, placing only a small number of trainees into a few practices. If there is thought as to expanding the opportunity for large numbers of residents to gain their continuity experience in community settings, directors may choose to randomly assign residents to a number of sites or to use a modified matching program.
The latter concept is briefly described in *Pediatric Education in Community Settings: A Manual*, under the heading – *Matching Medical Students and Residents with Preceptors* (p.151). The process might include the following: 1) during internship orientation, the director provides written materials describing each practice location, staffing, number of providers, office organization, patient population, etc.; 2) each resident interested in a private practice experience picks a few practices to visit during the orientation period; 3) the intern meets with the private practice clinician and his/her office staff; 4) subsequently, the interns and preceptors submit a separate rank list of their match preference; 5) the continuity director reviews the match lists and finalizes the assignments.

Even in the most well designed selection/assignment process, the match may not be ideal. Some preceptors may determine that they are unable to fulfill their commitment. In other circumstances, the intern-preceptor relationship may prove to be incompatible.

C. Maintaining a Successful Community-Based Program

1. Maintaining Continuity

The residents should have the expectation that as their skills improve, they will have more independence and more responsibility for patient care. Over time, they should develop a panel of their own patients. Utilizing a tracking system, a list of patients seen for more than one visit can be used as an indicator of continuity.

In order to recruit patients into the resident’s panel, practitioners may choose to communicate to families that a pediatric resident in training will be joining the practice on a weekly basis for the next 3 years. Families will be asked to help in the process of training the resident by allowing him/her to see their child (ren) at clinic visits, assuring them at the same time that they, as preceptor, also will be involved in the child’s examination and assessment. During this conversation, the practitioner can mention some benefits of having a resident in the practice: 1) it can provide the opportunity for a closer association between the private practitioner and the academic clinical faculty and teaching hospital; 2) for the parent(s), it would mean that more time will be devoted to the examination and assessment of their child/children.

Office appointment personnel should be instructed to schedule, whenever possible, follow-up and routine well child exams with the particular resident. Every effort should be made to assign all children in a particular family to a specific resident.
While in the office, residents may be able to place calls to or answer phone calls from the parents of patients within their panel. With the practitioner’s approval, they might report the results of lab or imaging studies ordered by the resident.

2. **Maintaining Adequate Numbers of Patients**

Private practitioners, with residents assigned to them for their continuity experience, may ask new families, wishing to have their children seen in the practice, to make an initial appointment with the resident. Some preceptors, with exceptionally busy appointment schedules, may ask the parent(s) of their patients with chronic health conditions to request a follow-up appointment with the resident. The practitioner in turn will make certain to see the patient with the resident after he/she has completed the exam and established a treatment plan.

Whether the resident has a continuity experience in an academic site or a community/private practice site, an adequate number of patient encounters must occur during each of his/her continuity clinic sessions. Ultimately, it is the continuity director’s responsibility to periodically review each resident’s patient log to determine the number of patients seen and the degree to which continuity of care is provided. For those residents assigned to a private practice, it may be helpful for the director to discuss with the preceptor the best way to capture that data.

Residents are required to remain compliant by having a minimum number of patient encounters per clinic session and to make certain that they have an adequate patient mix of children with well visits, acute visits, and long-term care visits. Documentation of such can be computed from super bills or from appointment data. Ideally, a computerized database of resident patient encounters can be developed at each clinic site and the information subsequently forwarded to either the continuity director or the director of house staff education. If this is not feasible, residents may be required to maintain hand-written logs. *(See also Chapter 10 – Accreditation by ACGME/RRC)*

3. **Ensuring Satisfaction for Patients, Staff, and Preceptors**

When a resident is assigned to a private preceptor, interruption of normal practice operation should be kept to a minimum. Residents should understand that the practitioner needs to continually provide for the care of his/her own patients, whether the resident is there or not. Parents and preceptors (and if applicable, patients) should have an understanding as to the resident’s participation in the provision of care.
Preceptors should know to contact the continuity director should any problem arise as to a resident’s attitude, clinical skills, or professional behavior. Occasionally, unforeseen or unintentional scheduling issues for the resident arise, necessitating a change in clinic attendance. When this occurs, the resident should be expected (if for no other reason than out of professional courtesy) to notify the preceptor’s office.

To maintain a preceptor’s interest and enthusiasm for teaching and serving as a role model, continuity directors may want to consider creating a periodic newsletter or arranging for an occasional social gathering. Making preceptors aware of ongoing faculty development programs and other clinic educational opportunities can be stimulating. Occasional meetings between the continuity director and support staff at each practice site can serve to acknowledge the invaluable contribution those individuals can have on the education and experience of the resident(s) assigned to that office.

4. Quality Improvement

Continuity directors have the added responsibility of monitoring the quality of care provided by residents. An on-line interactive program or videotaping may provide a method for monitoring patient care provided by residents. Ensuring appropriate documentation of medical care given by residents may be used as a Quality Improvement objective for each office (See Chapter 11 – Quality Assessment/Quality Improvement in Continuity Clinic). Inclusion of the resident in some of the review activities may be informative. The very presence of a resident in any practice setting may prompt other Quality Improvement activities, resulting in improved patient care.

The continuity director should establish a routine forperiodically reviewing goals and objectives for both the resident and the preceptor. This can be achieved by telephone conversation, site visits, or by written information and updates.

5. Advisory Board

The continuity director may hold meetings periodically with a select group of practitioners who are willing to serve on an advisory board. When possible, meetings should include resident representation. This is an
opportunity for open dialog among interested parties to enhance educational experiences and working relationships.

6. **Patient Reassignment Following Senior Resident Departure/Graduation**

Depending upon the policy/preference of the individual preceptor, it might be prudent for the departing resident to write to or in some way communicate with specific patients/families that he/she is completing residency training and will be leaving the practice. In that communication, it might be appropriate to state that in the coming weeks a new resident will be joining the private practice and that it is hoped that these patient/families will be willing to allow this new trainee to provide the same ongoing care. (Serwint and Johnson)

In some cases, a new resident may not be assigned to the practice, meaning that the preceptor or one of his/her associates will resume or assume full care and responsibility for the patients previously assigned to that resident.
References and Resources

American Academy of Pediatrics:

http://practice.aap.org/content.aspx?aid=1713


Medical Group Management Association. Annual Cost Survey. www.mgma.com


Babitch LA. Teaching practice management skills to pediatric residents. *Clin Pediatr.* 2006;45:846-849

INTRODUCTION

This chapter begins with a brief overview of the educational principles important for continuity directors and the resources to help them initiate the process. Key elements essential to a healthy educational system include: needs assessment, educational planning, broad educational goals, sample objectives, curriculum and teaching methods. Two related educational topics are covered in other chapters: Clinical Evaluation and Feedback (Chapter 6) and Faculty Development (Chapter 8).

Numerous suggestions in this chapter have been distilled from a variety of sources including the contributors’ personal experiences, past Continuity Clinic Special Interest Group (SIG) discussions, various Academic Pediatric Association (APA) workshops, and the APA Educational Guidelines website (http://www.ambpeds.org/egwebnew/). A readily available resource for educational topics discussed at APA-SIG meetings and summarized in past APA Newsletters can be obtained online (1998 to the present) at: (http://www.ambpeds.org/). The Continuity SIG Chairperson may be additional help.

I. EDUCATIONAL PRINCIPLES

A healthy educational program is built on sound principles of educational planning with continuous reassessment of educational needs and outcomes. Tutorials available on the APA Educational Guidelines website (http://www.ambpeds.org/egwebnew/) address in more detail competency-based educational planning. For new users, create a log-on name and password and then download the information as needed!

Competency-based education focuses on the outcomes of the educational experience, not simply the process of teaching/learning. Thus, it is not enough to provide a continuity experience of certain duration with a set number of patient visits, guided by specific Educational Goals and Objectives, and appropriate curricular material. We are now held to a higher standard using performance-based evaluation methods, demonstrating that residents acquire specified competencies.

Steps that enhance a program include:

PROCESS & OUTCOMES
At the end of the day, your goal was to make a pediatrician – don’t forget to check that your process is working along the way!
A. Curriculum Committee or Leadership Team for Educational Planning

While one person can do the job, input is needed from many. Consideration should be given to including multiple stakeholders in the educational process, such as the continuity director, preceptors and house officers. The residency program director’s input is invaluable to ensure that the continuity curriculum is well integrated into the rest of the training program, that it meets the Pediatric RRC requirements, and that it receives priority status in the resident scheduling.

Teamwork: Don’t forget to involve all the stakeholders!

B. Realistic Assessment of the Residents’ Educational Needs and Available Resources

In educational terms this is a “needs assessment.” It necessitates a comparison of the program’s goals, objectives and learning experiences to national requirements Pediatric Residency Review Committee (RRC) and the American Board of Pediatrics (ABP), expert recommendations, and available resources. Such assessments help programs to be responsive to their residents’ needs and to adapt to changing accreditation requirements, altered resources, and new professional roles. (See Chapter 6 - “Continuity Clinic Evaluation and Feedback”)

C. Written Goals and Objectives for Continuity Sites

The Pediatric RRC requires that programs have written goals and objectives specific to the continuity experience, but does not define what those Goals/Objectives (G/Os) must be. The Academic Pediatric Association (APA) Educational Guidelines website (http://www.ambpeds.org/egwebnew/) offers a template of G/Os which can be downloaded and adapted for individual programs. The broad goals found on this website are derived from competencies needed for practicing general pediatrics. However, with changes in the practice environment, modifications will be needed.

Most continuity settings have similar goals due to their focus on longitudinal care for well children and children with chronic diseases. Specific objectives may vary somewhat from one continuity experience to another. For example, some programs may include goals related to practice management; others may focus on cultural diversity or systems of care for low income children in hospital or community settings. Objectives should be selected to meet resident needs, to complement objectives covered in other rotations, and to highlight the unique characteristics of continuity sites.

Most continuity settings have similar goals due to their focus on longitudinal care for well children and children with chronic diseases.
D. Accreditation Council for Graduate Medical Education (ACGME) Competencies – How These Relate to Educational Goals and Objectives

The Program Director must verify that a resident is competent in all six ACGME competencies by completion of residency. Thus, the continuity experience, like other rotations, will need to relate its educational goals and objectives, and its evaluations, to the ACGME competencies.

The six ACGME competencies are: Patient Care, Medical Knowledge, Practice-based Learning and Improvement, Interpersonal Skills and Communication, Professionalism, and Systems-based Practice.

Some program directors will ask you to organize your Continuity Goals and Objectives (G/O’s) under each of the six broad competencies. The APA Educational Guidelines suggest an alternative approach: organize G/O’s by topics that make sense to you, and then indicate which G/O’s relate to which competencies.

A useful framework for Program and Rotation planning is shown below.

The APA website describes the framework as follows: The diagram can be visualized as a sandwich, program planning that focuses on broad competencies proves the bread of the sandwich (top and bottom layers of the sequence). The meat of the sandwich is provided by rotation planning, which focuses how to teach goals and specific objectives and evaluate behaviors that can be observed or measured. The specificity of evaluation at the rotation level makes it possible to achieve verification of broad competencies at the program-wide level. Hence program planning and rotation planning need to be coordinated, so the sandwich holds together.
E. Structured Curriculum

Each program should develop its own series of learning experiences, designed to accomplish planned goals and objectives, thus educating residents in each of the competencies. A curriculum is much more than a series of conference topics. It should include patient care experiences (e.g., children of specific ages, some with chronic disease), formal instruction (e.g., conferences, case discussions, structured clinical observations, computer-assisted instruction, chart review and feedback), and resident-directed learning (e.g., self-assessments, self-instructional modules, readings, resident-led conferences). Core topics can be covered during a three-year period, although the most important topics may be more appropriate for a one to two year cycle. Programs should track which topics are covered during pre-clinic (and other) conferences, as well as the type of learning experiences offered. (i.e., online modules, workshops).

Programs must maintain patient visit logs for each resident. This can be achieved using the standard ACGME patient log, designed for online entry by residents; or a home-grown hardcopy or computer equivalent. In the near future, it is anticipated that there will be mandated ACGME Learning Portfolios, in which residents document patient care experiences, quality improvement activities, self-reflective exercises, and Evidence Based Medicine (EBM) exercises. Responsibility for tracking this information should be absorbed by the Residency Program Office.

F. Expectations for Residents and Preceptors

Educational goals and objectives, along with behavioral expectations, should be clear to incoming residents as well as to new preceptors. An annual review of these should be conducted for all preceptors, residents and continuity staff. This review serves two purposes – it reminds everyone about the expectations, and gives the group an opportunity to update or refine them. Currently, the RRC expects us to develop expectations for each PL-level.

G. Evaluation and Feedback

Evaluation and feedback are essential components of a sound curriculum. Program evaluation is the process of gathering data to assess whether the program is effective in facilitating the residents’ ability to accomplish objectives and develop required competencies. Frequent internal evaluation of the program permits periodic and timely adjustments. Formal or “summative” program evaluation is provided by the Pediatric RRC.

Resident evaluation is the process of gathering data to assess whether current learning objectives have been met, and to guide further learning by the resident. Frequent evaluation and feedback during the learning experience (“formative evaluation”) is extremely important in the continuity setting and should be designed to motivate the resident to improve. Formative evaluation, which is ongoing throughout the year, may not be perceived by the resident as a learning opportunity or “labeled” as teaching or feedback, so be sure to tell residents that “feedback is being discussed!” The preceptor’s evaluation of the resident at the end of the year is a summative evaluation. Ideally, this evaluation should relate to level-specific learning objectives, and if based upon the ACGME competencies, can be best utilized by the program director. In-training and board
certifying examinations are also “summative” evaluations, though they may not closely reflect the objectives of the continuity experience.  (See Chapter 6 – “Continuity Clinic Evaluation and Feedback”)

H. Faculty Development

Planned educational programs will enhance the skills of continuity preceptors, particularly with regard to skills related to the educational process. The continuity site is often a challenging and sometimes stressful environment in which to teach. Faculty development programs can improve morale, reduce burn out, and enhance teaching skills. (See Chapter 8 – Faculty Development)

II. BROAD EDUCATIONAL GOALS FOR RESIDENTS IN THE CONTINUITY SETTING

These are very basic goals (paraphrased from the July 2007 RRC requirements for the continuity experience). We have added community aspects of care coordination in C (below) and added two ACGME core competencies E and F (below), specifically related to the continuity curriculum.

A. Develop insight into the longitudinal health care needs of children from birth through adolescence, including an understanding of normal/abnormal growth and behavior and development in well children as well as those with chronic disease. (Competencies: Medical Knowledge, Practice Based Learning and Improvement)

B. Provide effective health promotion and disease prevention, including age-appropriate health maintenance screening, timely immunization administration, anticipatory guidance and related aspects of well child care. (Competencies: Patient Care, Medical Knowledge and Interpersonal and Communication Skills)

C. Manage children with chronic medical conditions, providing family and patient-centered care coordinated within the practice and in conjunction with multidisciplinary providers and community resources (Competencies: Patient Care, Medical Knowledge and Interpersonal and Communication Skills, Systems Based Practice)

D. Acquire practice management skills including a basic understanding about how a particular primary care setting is organized, how to evaluate patients in an appropriately organized yet cost-efficient manner, and ways to advocate for children and families within this setting. (Competency: Systems-Based Practice)

E. Develop skills in self-assessment, self-directed learning, and carrying out quality improvement strategies for one’s clinical practice. (Competencies: Practice-Based Learning and Improvement)

F. Manifest a commitment to carrying-out responsibilities related to the provision of coordinated, longitudinal care; adherence to ethical principles; and sensitivity to a diverse patient population. (Competency: Professionalism)
III. GOALS AND OBJECTIVES FOR THE CONTINUITY EXPERIENCE

A. Downloading Goals and Objectives from the APA Educational Guidelines for Pediatric Residency

First, ask the program director what format s/he envisions for the Continuity Clinic G/O’s document. Most, but not all programs, use models adapted from the APA Educational Guidelines website. Goals and Objectives can be downloaded easily for adaptation to individual program needs.

Instructions: Enter http://www.ambpeds.org/egwebnew/ in your preferred web browser. Log in using username and password, which you can create for free as a first-time-user. The system will reveal the “Menu of Options” page. Select Curriculum Building Tools, then Pre-designed under Standard Rotation. (Pre-designed is recommended for new users, but with greater familiarity and comfort, one may choose to create one’s own design, selecting or deselecting certain online elements from the website.) The Pre-designed version can be downloaded as continuity or continuity plus acute care. Initially, it is suggested that the continuity option be selected to avoid the long list of G/Os associated with acute illness care.

Follow download instructions carefully and adapt the word document to your own particular needs. If desired, you may convert from table to text or add columns for rotation planning grids or learner check lists.

(See appendix 5-1 of this chapter for Pre-designed Continuity Goals and Objective.)

B. Using Lists of Goals and Objectives for Continuity Curriculum Planning

For curriculum planning, it may be preferable to insert G/Os into a grid. The following example can provide a framework for addressing learning experiences and evaluation elements, and can serve as a site for filling in details as they develop.

Rotation Planning Template

Rotation planning and use of the Rotation Planning Grid is explained in the APA website, under the Menu Option, Tutorials, selecting Rotation Planning. By selecting Rotation Planning, downloadable tables/grids can be found under the Menu Option, Evaluation and Planning Tools.

<table>
<thead>
<tr>
<th>Rotation Planning Table</th>
<th>High Priority?</th>
<th>Primary Competency Domain</th>
<th>Teaching Methods</th>
<th>Evaluation Methods</th>
<th>Progress and Plans for Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Completed by:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Date:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Insert your own customized list of Goals and Objectives</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>
C. Using Goals and Objectives to Create Resident Self-Assessment Tools

An abbreviated version of G/Os can be used to create a self-assessment check list for residents to determine their progress during training.

<table>
<thead>
<tr>
<th>Continuity Self-Evaluation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Resident:</strong></td>
</tr>
<tr>
<td><strong>Evaluation Anchors</strong></td>
</tr>
<tr>
<td>1= Minimal knowledge/skill</td>
</tr>
<tr>
<td>3= Handles routine</td>
</tr>
<tr>
<td>5= Handles all/complex</td>
</tr>
<tr>
<td>N/O= no opportunity to evaluate</td>
</tr>
</tbody>
</table>

GOAL 3.2 Health Promotion and Screening. Provide comprehensive health care promotion, screening and disease prevention services to infants, children, adolescents and their families in the ambulatory setting.

Insert priority objectives here

IV. CURRICULUM DELIVERY

Developing an educational environment in a busy clinical setting, often with limited staffing, requires resourcefulness. A variety of innovative instructional strategies to meet the challenge of teaching in the continuity setting can be utilized.

1. Make certain that there are adequate numbers of patients and a diversity of patient diagnoses to meet the educational objectives.

2. Provide appropriate resident exposure to continuity patients over time (minimum 36 clinic weeks per resident per year; new guidelines expected in year 2011 or 2012.

A. Teaching Methods/Instructional Strategies – Formal Instruction

1. Resident check out – The most common method used in continuity sites:

   - Preceptor to resident ratio should not exceed 1 to 4.
   - Physical space should be conducive to teaching (with noise at a minimum), e.g., one area for precepting and another area for resident work.
   - Checkout should be limited to 5-10 minutes in a busy clinic with discussion focused on key issues.
   - Special attention should be devoted to assuring that the resident remains in charge of the case.
   - Adherence to key components of the sign-out process will ensure that the resident obtained the appropriate history relevant to the chief complaint, completed an appropriate
physical examination, logically formulated the assessment, and the plan of care and investigation, and that the attending provided feedback to assure quality patient care and housestaff education.

- Jointly re-visiting the patient/family in the examination room allows the resident and/or attending to obtain any additional pertinent information and to present an image of collaborative agreement as to the assessment and plan. It is essential to reinforce the image of the resident as the child’s primary physician (e.g., always have the resident enter the exam room before the attending).
- Final discussion of the case can be accomplished either in the exam room or in a nearby conference room. Take care not to exclude the family during an in-room discussion and avoid any negative or non-supportive comments regarding the resident or other healthcare providers.
- Complimenting the resident on positive aspects of case presentation followed by constructive feedback and suggestions are integral to each encounter.
- As the situation warrants, give feedback regarding resident chart documentation – completeness, formulation of assessment and plan, updating problem lists etc.

2. **Small group discussions** 20 – 30 minute pre- or post-clinic sessions, utilizing adult centered learning

- Weekly discussion of topics/ Power Point presentations is part of a primary core rotating continuity curriculum. Preparation and presentation by either a resident and/or an attending is appropriate.
- Interactive case presentations of specific continuity patients.
- Guest speakers (e.g. speech therapists, business manager)

3. **Structured Clinical Observations**: Observation Checklists (see Appendix 5–2)

- These can be used to evaluate a resident’s skill/ability in obtaining a meaningful patient exam, and can be achieved in one setting or in segments
- Presents an opportunity for immediate feedback regarding resident-patient/family encounters.

4. **Innovative teaching strategies**: can facilitate resident learning and provide an educational atmosphere that is rewarding for both residents and attending physicians

**Examples:**

- Continuity *quiz or question of the week* distributed to residents prior to clinic. Subsequent individual or group discussion as to the quiz or question can be conducted during clinic sessions or answers can be provided at a later time online or in printed hardcopy.
- Case of the week posted on bulletin board.
- Continuity theme of the day identifying one topic that is thoroughly discussed with the residents for each patient seen that day (e.g., dental exam )
- Motivational games such as rewards for continuity team with best immunization rates or most visits in a quarter
- Taste-testing of medication samples including antibiotics, antipyretics etc.
- Demonstration as to use of different inhalers and/or delivery systems
B. Teaching Methods/Instructional Strategies – Resident Directed Learning

- Resident self assessment tool – structured as a check list to evaluate the residents’ ability to use medical knowledge in formulating medical diagnoses and treatment plans and as a means for determining their proficiency in providing preventive counseling. (See Appendix 5-4)
- Suggested readings – pertinent articles referable to continuity of care; the PREP journal; Self-Assessment Exercises
- Ad hoc readings – based on patient encounters for the day – e.g., guidelines for the diagnosis and management of otitis media; challenging dermatological presentations
- On-line self-instructional modules – (see Appendix 5-5)
- Quality Improvement (QI) projects
- CAT’s (critically appraised topics) – subjects or questions arising during patient encounters. Residents should make note of these and then make an effort to problem solve using evidence-based support.
- Access to structured age-appropriate encounter sheets, posted immunization schedules, anticipatory guidance posters, and patient education materials

HAVE FUN
Both residents and attendings should enjoy learning, advocating for their patients, and providing support and enthusiasm for each other.
### Standard Rotation: Continuity Clinic

<table>
<thead>
<tr>
<th><strong>Primary Goals for this Rotation</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>3.2 GOAL: Health Promotion and Screening. Provide comprehensive health care promotion, screening and disease prevention services to infants, children, adolescents and their families in the ambulatory setting.</td>
<td></td>
</tr>
<tr>
<td>3.2.1: Perform health promotion (well child care) visits at recommended ages based on nationally recognized periodicity schedules (e.g., AAP Health Supervision Guidelines, Bright Futures, GAPS).</td>
<td></td>
</tr>
<tr>
<td>3.2.2: Perform a family centered health supervision interview.</td>
<td></td>
</tr>
<tr>
<td>1. Define family and identify significant family members and other significant caretakers and what role they play in the child's life.</td>
<td></td>
</tr>
<tr>
<td>2. Identify patient and family concerns.</td>
<td></td>
</tr>
<tr>
<td>3. Discuss health goals for the visit with the patient and family.</td>
<td></td>
</tr>
<tr>
<td>4. Prioritize agenda for the visit with the patient and family.</td>
<td></td>
</tr>
<tr>
<td>5. Elicit age-appropriate information regarding health, nutrition, activities, and health risks.</td>
<td></td>
</tr>
<tr>
<td>3.2.3: Perform age-appropriate developmental surveillance, developmental screening, school performance monitoring and job performance monitoring.</td>
<td></td>
</tr>
<tr>
<td>1. Identify risks to optimal developmental progress (e.g., prematurity, SES, family/genetic conditions, etc.).</td>
<td></td>
</tr>
<tr>
<td>2. Identify patient and parental concerns regarding development, school, and/or work.</td>
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</tr>
<tr>
<td>3. Perform standardized, validated, accurate developmental screening tests for infants and children until school age.</td>
<td></td>
</tr>
<tr>
<td>3.2.4: Critically observe interactions between the parent and the infant, child, or adolescent.</td>
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<tr>
<td>3.2.5: Perform physical exam with special focus on age-dependent concerns and patient or family concerns.</td>
<td></td>
</tr>
<tr>
<td>3.2.6: Order or perform and interpret additional age-appropriate screening procedures, using nationally-recognized periodicity schedules and local or state expectations (e.g., newborn screening, lead, hematocrit, hemoglobin for sickle cell disease, blood pressure, cardiovascular risk assessment, vision, hearing, dental assessment, reproductive-related concerns).</td>
<td></td>
</tr>
<tr>
<td>3.2.7: Order or perform appropriate additional screening procedures based on patient and family concerns (e.g., sports involvement, positive family history for specific health condition, behavioral concerns, depression, identified risk for lead exposure).</td>
<td></td>
</tr>
</tbody>
</table>
Appendix 4-1 [Page 2]
Pre-designed Continuity Goals and Objectives

<table>
<thead>
<tr>
<th>3.2.8</th>
<th>Perform age-appropriate immunizations using nationally-recognized periodicity schedules.</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.2.9</td>
<td>Provide age-appropriate anticipatory guidance to parent(s) or caregiver(s), and the child or adolescent, according to recommended guidelines (e.g., AAP TIPP program, Bright Futures, GAPS). Address topics including:</td>
</tr>
<tr>
<td>3.2.9.1</td>
<td>Promotion of healthy habits (e.g., physical activity, reading, etc.)</td>
</tr>
<tr>
<td>3.2.9.2</td>
<td>Injury and illness prevention</td>
</tr>
<tr>
<td>3.2.9.3</td>
<td>Nutrition</td>
</tr>
<tr>
<td>3.2.9.4</td>
<td>Oral health</td>
</tr>
<tr>
<td>3.2.9.5</td>
<td>Age-appropriate medical care</td>
</tr>
<tr>
<td>3.2.9.6</td>
<td>Promotion of social competence</td>
</tr>
<tr>
<td>3.2.9.7</td>
<td>Promotion of positive interactions between the parent and infant/child/adolescent</td>
</tr>
<tr>
<td>3.2.9.8</td>
<td>Promotion of constructive family communication, relationships and parental health</td>
</tr>
<tr>
<td>3.2.9.9</td>
<td>Promotion of community interactions</td>
</tr>
<tr>
<td>3.2.9.10</td>
<td>Promotion of responsibility (adolescence)</td>
</tr>
<tr>
<td>3.2.9.11</td>
<td>Promotion of school achievement (middle childhood, adolescence)</td>
</tr>
<tr>
<td>3.2.9.12</td>
<td>Sexuality (infancy, early and middle childhood, adolescence)</td>
</tr>
<tr>
<td>3.2.9.13</td>
<td>Prevention of substance use/abuse (middle childhood, adolescence)</td>
</tr>
<tr>
<td>3.2.9.14</td>
<td>Physical activity and sports</td>
</tr>
<tr>
<td>3.2.9.15</td>
<td>Interpretation of screening procedures</td>
</tr>
<tr>
<td>3.2.9.16</td>
<td>Prevention of violence</td>
</tr>
<tr>
<td>3.2.10</td>
<td>Work collaboratively with professionals in the medical, mental-health, educational and community systems to optimize preventive health services for children.</td>
</tr>
<tr>
<td>3.2.11</td>
<td>Demonstrate practical office strategies that allow provision of comprehensive and efficient health supervision (e.g., share tasks with office staff; develop and use structured records, computerized information, websites, questionnaires, patient education handouts, books, videos; develop office policies for such things as consent and confidentiality, request for transfer of medical records, school information).</td>
</tr>
<tr>
<td>3.2.12</td>
<td>Discuss logistical barriers to the provision of health supervision care (e.g., financial, social, environmental, health service, insurance systems) and discuss strategies to overcome these for specific families.</td>
</tr>
</tbody>
</table>

Appendix 4-2 [Page 1]
Structured Clinical Observation (SCO)

Trainee: ________________________________  PL3  PL2  PL1  MS4  MS3
Observer: ________________________________  Date: __________________

Site:  □ Continuity Clinic  □ Other Outpatient  □ Inpatient  □ ER
Patient age:  □ Newborn (1-30 days)  □ Infant (30 days - 11 months)  □ ___ Years old
Patient Gender:  □ M  □ F
Patient type:  □ new pt  □ established pt
Type of Visit:  □ well child  □ sick visit  □ follow-up

Indicate the portion of visit and particular items observed. Please check all that apply.

<table>
<thead>
<tr>
<th>☐ Data Gathering</th>
<th>☐ Physical Exam</th>
<th>☐ Information Giving</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ Interim history (well child)</td>
<td>☐ HEENT</td>
<td>☐ Anticipatory Guidance</td>
</tr>
<tr>
<td>☐ CC/HPI</td>
<td>☐ Cardiac</td>
<td>☐ Immunization info</td>
</tr>
<tr>
<td>☐ Diet/Sleep/Elimination</td>
<td>☐ Pulmonary</td>
<td>☐ Illness explanation</td>
</tr>
<tr>
<td>☐ PMH/Health Maintenance</td>
<td>☐ Abdominal</td>
<td>☐ Management</td>
</tr>
<tr>
<td>☐ ROS/HEADS</td>
<td>☐ Genitourinary</td>
<td>☐ Follow-up instructions</td>
</tr>
<tr>
<td>☐ Development/School History</td>
<td>☐ Orthopedic</td>
<td>☐ Other ___________</td>
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<tr>
<td>☐ Family History</td>
<td>☐ Neurological</td>
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<tr>
<td>☐ Social/Cultural History</td>
<td>☐ Other ________</td>
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</tbody>
</table>

Specific observations or comments (with reference to Skill Guidelines on other side):

Key Feedback Points:

1. 

2. 

3. 

Time Spent in Observation:  ____ min.  Time Spent in Feedback:  ____ min.

Resident Signature: _______________  Preceptor Signature: _______________
### Structured Clinical Observation (SCO)

Please place a check by each item below to indicate behaviors that were observed

(Y=Yes, N= No, N/A = no opportunity to observe or not applicable this encounter)

<table>
<thead>
<tr>
<th>Y</th>
<th>N</th>
<th>N/A</th>
<th>Data Gathering (ACGME competencies: Patient Care, Communication Skills)</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Allows patient/parent to complete opening statement</td>
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<td></td>
<td>Starts with open ended questions</td>
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<td></td>
<td></td>
<td></td>
<td>Avoids leading questions</td>
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<td>Avoids questions with multiple parts</td>
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<td></td>
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<td></td>
<td>Explicitly elicits patient’s/parent’s beliefs about causes of the illness or problem</td>
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<td></td>
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<td>Asks about remedies or therapies used to address chief complaint</td>
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<td></td>
<td>Asks about non-traditional remedies and therapies</td>
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<td>Asks specific questions about cultural, religious, spiritual, or ethical values</td>
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<td>Asks about life events &amp; circumstances that might affect the patient’s health/ treatment</td>
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<td>Asks about family members or significant others who live in the home or care for the child</td>
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<tr>
<td></td>
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<td></td>
<td>Asks for clarification if necessary</td>
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<td></td>
<td>Explicitly elicits patient’s/parents expectations regarding the visit</td>
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<td>Proceeds with logical sequencing of questions</td>
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<table>
<thead>
<tr>
<th>Y</th>
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<th>Interpersonal Skills (competencies: Communication Skills, Professionalism)</th>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Introduces self</td>
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<tr>
<td></td>
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<td>Addresses parent / patient by name after initial introductions</td>
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<tr>
<td></td>
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<td></td>
<td>Appropriately includes child in interview</td>
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<td></td>
<td>Avoids interrupting parent/ patient</td>
</tr>
<tr>
<td></td>
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<td></td>
<td>Actively listens using nonverbal techniques (e.g. eye contact, nodding)</td>
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<tr>
<td></td>
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<td></td>
<td>Expresses empathy (e.g. using tone of voice, “That must be hard for you”)</td>
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<tr>
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<td></td>
<td>Explicitly recognizes patient’s/parent’s feelings or concerns (e.g. “you seem upset, sad, angry”)</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Deals effectively with language barriers</td>
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<tr>
<td></td>
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<td></td>
<td>Demonstrates sensitivity to health beliefs and religious or spiritual issues</td>
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</table>

<table>
<thead>
<tr>
<th>Y</th>
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<th>Physical Examination (competencies: Patient Care)</th>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Washes hands</td>
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<tr>
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<td></td>
<td>Matches sequence of exam to cooperation level</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Includes all appropriate elements of exam</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Leaves out irrelevant elements</td>
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<td></td>
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<td>Demonstrates correct technique for all portions of the observed exam</td>
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<table>
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<tr>
<td></td>
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<td>Explains confidentiality to adolescent and/or their parent</td>
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<td>Avoids jargon and/or explains medical terms if used</td>
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<td>Explains diagnosis</td>
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<td>Explains management plan</td>
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<td>Explains need for follow-up</td>
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<td></td>
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<td></td>
<td>Uses visual reinforcement (e.g. pictures, models, demonstrations)</td>
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<td>Uses written reinforcement (e.g. written instructions, handouts)</td>
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<td>Explicitly asks for patient/parent input in management plan</td>
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<td>Adapts plan as needed to suit individual circumstances, cultural or health beliefs</td>
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<td></td>
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<td></td>
<td>Asks patient / parent for their understanding of treatment plan</td>
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<td>Solicits questions</td>
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<td></td>
<td>Asks about patient/parent’s ability to follow treatment plan</td>
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<td>Explains when, why, how family should contact physician</td>
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<td>Provides summary of discussion</td>
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## Appendix 4-3 [Page 1]
### Resident Self-Assessment Tool

<table>
<thead>
<tr>
<th>Continuity Clinic CORE Topic List</th>
<th>Resident Self-Assessment Tool</th>
<th>Level when expected to assess and RX fairly independently (PL YR)</th>
<th>Beginning skills</th>
<th>Can assess most</th>
<th>Can manage and RX most</th>
<th>Independent and confident</th>
<th>NOTES: areas to learn more about and how I will do this</th>
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<tbody>
<tr>
<td><strong>Know/follow expected schedule and content of well visits</strong></td>
<td>PL-I</td>
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<td><strong>Visit and organization and priority-setting</strong></td>
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<td>Community/culturally centered care</td>
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<td><strong>HX &amp; Physical exam (age appropriate)</strong></td>
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<td>Infant</td>
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<td>Sports clearance PE</td>
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<td>Anesthesia pre-op PE</td>
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<td><strong>Assessment and anticipatory care (age appropriate)</strong></td>
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<td>Using new version of Bright Futures (ADDED 5.08)</td>
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<td>Discipline &amp; Positive interactions between the parent and child/adolescent</td>
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<td>Constructive family communication and relationships and parental health</td>
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<td>Assessing &amp; addressing parental mental health</td>
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<td>Physical activity and sports</td>
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<td>Sexuality (all ages)</td>
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<tr>
<td>Prevention of substance use/abuse (middle childhood, adolescence)</td>
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<td>Violence prevention/anger management</td>
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<td>Environmental health – lead</td>
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### Appendix 4-3 [Page 2]

#### Resident Self-Assessment Tool

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<tr>
<th>Topic</th>
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<tbody>
<tr>
<td>Environmental health – passive smoke</td>
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<tr>
<td>Environmental health – other toxins</td>
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<tr>
<td><strong>Screening for disease/disorder</strong> – when, why, how, interpretation</td>
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<td>Neonatal screen results (Hearing, metabolic)</td>
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<tr>
<td>Iron deficiency screening (CBC, vs. HGB, vs. EP)</td>
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<tr>
<td>Lead and EP screening</td>
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<tr>
<td>Hearing screening (PROCEDURE)</td>
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<tr>
<td>Tympanometry screening (PROCEDURE)</td>
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<td>Vision screening (PROCEDURE)</td>
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<td>Developmental screening tests (PROCEDURE)</td>
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<td>BP screening (PROCEDURE)</td>
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<td>Sports PE</td>
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<td>Obesity/diabetes screening (lipid profile, BS, OGTT, Hemoglobin A1C)</td>
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<td>STD screening</td>
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<td>Depression screening (PROCEDURE)</td>
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<tr>
<td>Vanderbilt screening test for ADHD (PROCEDURE)</td>
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<tr>
<td>Scoliometer use (PROCEDURE)</td>
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<tr>
<td>PPD - tuberculosis screening (PROCEDURE)</td>
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<tr>
<td><strong>IMMUNIZATIONS</strong>-timing, risk/benefit, counseling and administration (PROCEDURE)</td>
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<td>Routine IM (Pediarix®-®, HIB, PCV7, DTap, Tdap, Menactra®, etc.) and oral (rotavirus)</td>
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<tr>
<td>Routine SC (MMR, VZ, Proquad®)</td>
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<tr>
<td>Special or new (flu, Hep A, HPV)</td>
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<tr>
<td>Handle parents with concerns/refusals</td>
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<td>VAERS (vaccine adverse reporting system)</td>
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<td>Public health issues</td>
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<td><strong>TOPICS BY SPECIALTY</strong></td>
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<tr>
<td><strong>ALLERGY/IMMUNOLOGY</strong></td>
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<tr>
<td>Approach to “does my child have allergies? “</td>
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<tr>
<td>Prevention through early habits</td>
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<td>Asthma - chronic management</td>
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<td>Food allergies</td>
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<td><strong>CARDIOVASCULAR</strong></td>
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<td>Family HX early CVD</td>
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<td>CV Risk prevention education</td>
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<td><strong>Dental</strong></td>
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<td>Fluoride – when, dose, why</td>
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<tr>
<td>Caries-prevention, early recognition</td>
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# Appendix 4-3 [Page 3]
## Resident Self-Assessment Tool

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<thead>
<tr>
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<th>Item</th>
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<td>Bite abnormalities/recognition</td>
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<td>Acne</td>
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<td></td>
<td>Atopic dermatitis</td>
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<tr>
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<td>Pigment changes (loss; moles)</td>
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<td>Warts and molluscum</td>
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<tr>
<td><strong>Endocrine/Metabolic</strong></td>
<td>Sexual Maturity Rating (Tanner staging)</td>
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<td>Weight disturbances, recognize when endocrine cause may be in the differential DX</td>
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<tr>
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<td>Obesity risk, counseling, intervention</td>
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<tr>
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<td>Length disturbances, recognize when endocrine cause is in the differential DX</td>
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<td>Variations in timing of puberty</td>
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<td><strong>ENT</strong></td>
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<td>Tonsils-ranges of normal</td>
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<td>TMs-normal variants</td>
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<td>Risks for early hearing loss</td>
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<td>Epistaxis, recurrent</td>
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<td>Noisy breathing, snoring, persistent</td>
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<td>Breast feeding support, common issues</td>
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<td>Breast feeding support, less common issues</td>
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<td>Bottle feeding issues, formula, bottle overuse, weaning</td>
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<td>Constipation</td>
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<td>GER -Spitting in infancy</td>
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<td>Toilet training - BMs</td>
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<tr>
<td></td>
<td>Feeding struggles in toddlers</td>
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<td>Functional belly pains</td>
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<td>Eating disorders, early signs</td>
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<td><strong>GU/Renal</strong></td>
<td>Foreskin care in uncircumcised male</td>
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<td>Toilet training –age, advice, variations</td>
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<td>Voiding variations at different ages</td>
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<td>Bedwetting- age, approach</td>
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<td>Scrotal variations (hydrocele, hernia, varicocele, discomfort)</td>
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<td><strong>Gynecologic</strong></td>
<td>Contraceptive counseling</td>
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### Appendix 4-3 [Page 4]

**Resident Self-Assessment Tool**

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<thead>
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<th>Category</th>
<th>Description</th>
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<td><strong>Infections</strong></td>
<td>Daycare and risk of infections</td>
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<td>Anticipatory care, education re: common infections</td>
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<td>Travel precautions/vaccines</td>
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<td><strong>Musculoskeletal</strong></td>
<td>Growing pains</td>
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<td></td>
<td>Positional deformities –feet, legs, back</td>
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<td></td>
<td>Gait variations</td>
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<tr>
<td><strong>Neurology</strong></td>
<td>Headache, include recurrent</td>
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<td>Head shape, unusual/positional</td>
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<tr>
<td><strong>Ophthalmology</strong></td>
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<tr>
<td></td>
<td>Strabismus</td>
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<tr>
<td></td>
<td>Screen/interpreting visual acuity change/loss</td>
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<tr>
<td><strong>Pharmacology/Toxicology</strong></td>
<td>Counseling to prevent common drug poisoning or overdose</td>
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<tr>
<td><strong>Pulmonary</strong></td>
<td>Chronic care- asthma</td>
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<tr>
<td><strong>Psychology/Psychiatry/Develop/Behavior</strong></td>
<td>Approach to developmental delay</td>
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<td>Approach to behavioral concerns</td>
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<td>Approach to discipline issues</td>
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<td>Approach to school problems</td>
<td>PL-2</td>
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<td>Approach to sleep problems</td>
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<td>Approach to somatic complaints</td>
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<td>Behavioral issues w/ chronic disease</td>
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<tr>
<td></td>
<td>Approach to habits (thumb sucking, head banging, etc)</td>
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## Appendix 4-3 [Page 5]  
### Resident Self-Assessment Tool

<table>
<thead>
<tr>
<th>Category</th>
<th>Task Description</th>
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<tr>
<td>Parenting problems</td>
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<tr>
<td>* Abuse risk</td>
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<tr>
<td>* Anger</td>
<td></td>
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<tr>
<td>* Depression</td>
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<td>* Divorce</td>
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<tr>
<td>* Social/cultural isolation</td>
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<tr>
<td>* Substance- ETOH, illicit drugs</td>
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<tr>
<td>* Tobacco</td>
<td></td>
<td></td>
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<tr>
<td>Chronic care of pts with ADHD</td>
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<tr>
<td>Chronic care of pts with behavioral/MH condition</td>
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<tr>
<td>Surgery</td>
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<td>Pre-anesthesia evaluation/contra-indications</td>
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<tr>
<td>Reaction to surgery, post/family</td>
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<tr>
<td>Newborn/Infancy</td>
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<td>Abnormal NB screen, f/up</td>
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<tr>
<td>Birth marks</td>
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<tr>
<td>Child care decisions, issues</td>
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<tr>
<td>Colic</td>
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<tr>
<td>Developmental Dysplasia of the Hips</td>
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</tr>
<tr>
<td>Circumcision care post discharge</td>
<td></td>
<td>1</td>
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<tr>
<td>FTT</td>
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<td>1</td>
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<tr>
<td>Jaundice</td>
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<tr>
<td>Lactation issues post discharge</td>
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<td>1</td>
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<tr>
<td>Umbilical cord problems/Qs</td>
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<tr>
<td>Chronic Disease</td>
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<td></td>
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<tr>
<td>Serving as coordinator of care</td>
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</tr>
<tr>
<td>Effects on siblings, parents</td>
<td></td>
<td>2</td>
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<tr>
<td>Child emotional response/stages by age</td>
<td></td>
<td></td>
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<tr>
<td>Community Resources</td>
<td></td>
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<tr>
<td><strong>LIST or Discuss w preceptor chronic diseases in your patient panel</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Source: Children’s Hospital of Dartmouth, 2009. Diane Kittredge, MD*
Appendix 4-4 [Page 1]
Resources for Curriculum Implementation in Continuity

AAMC Site
www.mededportal.org
MedEd Portal is an AAMC product - a publishing venue through which faculty publish educational works. It was designed to promote collaboration and educational scholarship by facilitating the exchange of peer reviewed teaching resources such as tutorials, cases, lab manuals, assessment instruments, faculty development materials, etc.

APA SITES
http://www.ambpeds.org/egwebnew
APA Educational Guidelines website contains tools to assist you: Plan rotations and programs; Integrate ACGME competencies into curricula; Access goals and objectives for pediatric learning experiences; Build evaluation forms; Conduct faculty development. Includes some “teaching resources” (resource button on top menu)

APA Continuity SIG listserv
e-mail: APA-continuitysig@listserv.ambpeds.org
This is the most important resource. A great address for finding people who think like you!

ACGME site
http://www.acgme.org/outcome
ACGME website provides definitions of competencies, assessment tool box, ideas for implementation, print resources

American Academy of Family Physicians
www.aafp.org/online
You can link to their journal, American Family Physician. This allows access to articles and quizzes.

AAP Links
http://pedsinreview.aappublications.org
As a subscriber, you have access to lots of articles, quizzes. The Index of Suspicion is a place to find cases and indepth discussion. Provide an assignment of relevant articles in advance; follow-up with a quiz integrated into the flow of seeing patients.

www.pedialink.org/index.cfm
PediaLink is an AAP CME site. PediaLink Resident Center allows residents to assess their strengths and weaknesses, create ILPs (Individualized Learning Plans), track progress, online courses (e.g., PREP-SA and eQIPP). Links to other sites (ACGME, the American Board of Pediatrics Content Specifications, career and fellowship information).

Sites sponsored by the AAP regarding information for parents refusing childhood vaccines
Resources for Curriculum Implementation in Continuity

Bright Futures Health Promotion Workgroup Section

Expansive curriculum on health promotion (i.e., communication, advocacy, partnership, health promotion, education, and time management). Several parts:
(2) video (comes on DVD with the book and is also video-streamed on website).
Includes: faculty development self-directed modules available for free online and, in addition, self-directed learning modules about these core concepts of health promotion.
(3) partnering with CORNET in a research study on the impact of Bright Futures on pediatric residents in regard to oral health (see Hank Bernstein or Janet Serwint if interested).
(4) several web sites:

www.brightfutureseducation.org: links Pediatrics in Practice (see below) together with two others that are probably familiar – Pedicases (see below) and Collaboration Essentials. These materials should also be very useful.

www.pediatricsinpractice.org: Bright Futures-based health promotion curriculum designed to teach educators how to effectively convey health promotion content to child health professionals. The curriculum also offers tools to integrate health promotion activities into clinical practice. Based on core concepts (Partnership, Communication, Health Promotion, Time Management, Education, and Advocacy) and teaching strategies (Reflective Exercise, Case Discussion, Mini-Presentation, Role Play, Brainstorming, and Buzz Group).


http://collaborationessentials.org/ce/index.html Bright Futures Center for Collaborative Education in pediatrics and child and adolescent psychiatry. Designed for pediatric and psychiatric trainees. 3 case-based modules.

COMSEP New edition of the Guidebook for Clerkship Directors, 3rd edition. Alliance for Clinical Education - wonderful resource on curriculum, evaluation- just everything- applies equally to residency as well as clerkships. Can be accessed on line for free and each chapter is in pdf downloadable files: http://www.allianceforclinicaleducation.org/guidebook.htm Site has link to order print copy ($40 US/Canadian Orders; $65 International Orders)

General Sites with Variety of Topics

www.pediatriceducation.org (Donna M. & Michael P. D’Alessandro) is a Pediatric Digital Library and Learning Collaboratory intended to serve as a source of continuing pediatric education – has cases and links. New cases are added to the library regularly.
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Resources for Curriculum Implementation in Continuity

www.cpnonline.org: Children's Physician Network (Minnesota) gives you access to Barton Schmidt's “Pediatric Advisor”.

www.CLIPPcases.org:
HRSA project of 45 minute to 1 hour cases designed for MS III students, but also good for residents.

www.healcentral.org
The Health Education Assets Library (HEAL) is a multidisciplinary, medically oriented digital library of multimedia teaching resources. It provides access to images, video clips, animations, presentations, and audio files for healthcare education. It also contains videos on neurodevelopmental exams of children, but there has bee difficulty getting videos to display.

www.dermatlas.org
Dermatologic image atlas of over 11,000 images and descriptions of skin findings
Can search by category, diagnosis or body site

Children’s Hospital of Pittsburg website Primary Care Education Materials
Pediatrics Education (PedsEd): Children's Hospital of Pittsburgh Online Courses and CME - Modules
http://pedsed.pitt.edu
Enhancing Proficiency in Diagnosing Otitis Media (ePROM) (free 6 - 30 minute online courses)
Pediatric Dermatology (free 60 minute course)
Continuity Clinic Topics, part of a 3 year curriculum. A free Demo is provided, but a subscription fee is required.
Contact: Luanne.Lowry@chp.edu

John Hopkins website Harriet Lane Continuity Clinic Curriculum: Internet Learning Program
http://www.hopkinschildrens.org/Pediatric-Residency-Internet-Learning-Curriculum.aspx
topics covered: 25
cost: $2000 annually for programs with >30 residents, $1500 annually for smaller programs
contact: Margaret Moon: mmoon4@jhmi.edu

Yale website Primary Care Pediatrics Curriculum
http://medicine.yale.edu/pediatrics/pcpc/
topics covered: 52
cost: $300 annually for programs with >40 residents, $225 from 20-40 residents, $150 for <20 residents
contact: Jaideep Talwalkar: jaideep.talwalkar@yale.edu

NEWBORN ISSUES

www.Bilitool.org
Hyperbilirubinemia - quick calculation using the Bhutani curve to place newborn in a risk zone

www.breastfeedingbasics.org
(Mary O’Connor, Linda Lewin) - a self-paced program covering topics from anatomy to problem-solving. It includes pre-and post-evaluations for each module.
Appendix 4-4 [Page 4]
Resources for Curriculum Implementation in Continuity

www.bfmed.org
web site for the Academy of Breastfeeding Medicine. You do not need to be a member to access current breastfeeding protocols.

www.drjacknewman.com
(Dr. Newman, Pediatrician and lactation expert) - site has access to handouts on many problems encountered during breastfeeding and also videos of how proper breastfeeding is achieved.

Drugs and Lactation Database (LactMed) - A peer-reviewed and fully referenced database of drugs to which breastfeeding mothers may be exposed. Among the data included are maternal and infant levels of drugs, possible effects on breastfed infants and on lactation, and alternate drugs to consider.

Neo-Reviews (see AAP sites above)

TOPIC SPECIFIC RESOURCES

http://www.cdc.gov/nccdphp/dnpa/growthcharts/training/powerpoint/index.htm
47 PowerPoint slides providing an overview of the 2000 CDC growth charts, including background information, rationale for changes in the revised charts, and using and interpreting the BMI charts. Notes are provided for each slide. Slides prove that you can’t guess who is overweight just by looking.

www.parentingme.com
(Hussey-Gardner, Univ. Maryland) has commercial links, but has basic child development and parenting advice.

Vanderbilt (Seth Scholer) developed the Play Nicely program (www.playnicely.org). It is intended for parents, but there is a lot of good background information on child behavior, applicable to resident education.

http://etl2.library.musc.edu/tide/
TIDE - immunization curriculum (Diane Kittredge & Paul Darden). Focuses on QI strategies.

www.arhp.org
Resources for Curriculum Implementation in Continuity

www.pediatrics.wisc.edu/education/derm
(Gary Williams & Murray Katcher) for pediatric dermatology teaching, lots of photos, quizzes. You can download images for your own use (though the resolution is not very good).

Tear Out and Post Section

Consultant for Pediatricians (www.consultantlive.com).
Subscribe to this freebie for print version. Wonderful photos to pull out and hang on the “case-of the week” bulletin board. Web-site has index to locate specific conditions.

Contemporary Pediatrics (www.contemporarypediatrics.com)
has “Puzzler” and “Dermatology: What’s your Dx” cases that are easy to post. Web-site has archived cases.

Infectious Diseases in Children (www.idinchildren.com)
has a “What’s Your Diagnosis” and “Spot the Rash” columns with good photos and explanations.
Data collection is essential to validating continuity practices. It ensures that residents are not only seeing the correct number of patients, stipulated by Resident Review Committee (RRC) guidelines, but also the appropriate exposure to a variety of age groups, acute and chronic disease states, and visit types [urgent care, problem-based, and well child]. Tools chosen for data collection should be implemented with outcomes in mind. The type of information gathered should be optimal for the learning experience and meaningful for providing resident feedback. Outcomes extracted from the data should include the statistical information requested on the Residency Review Committee (RRC) Program Information Form (PIF).

This chapter focuses on how to set up patient panels, choose a method for maintaining accurate patient logs, and developing a monthly resident productivity report.

### 1. Patient Panels

Each resident should have a patient panel consisting of a number of children they will be following during their three years of residency training. Those patients should be seen not only for preventive well child visits, but also acute care visits. Panels may be individual or team-based. Patients belonging to a particular resident should be readily identifiable and, within reason, scheduled for an appointment with that resident whenever possible. Team panels provide the opportunity for a group of patients to be cared for by a number of residents. If team panels are in place, regular and formal sharing of information among those residents must take place and be consistently documented to ensure continuity of care.
No defined numbers of patients need to be in a panel, but the size of the patient panel must be manageable. Panels should contain patients of all ages, newborn through adolescents, and should be comprised of basically normal healthy children as well as patients with a variety of chronic illnesses. The essentially healthy patients in the panel will provide the resident with the opportunity to learn and appreciate normal growth and development over time. A good rule of thumb would be a 2:3:1 ratio of healthy children to children with chronic illness. In general, children with chronic illnesses probably will be seen more frequently.

Patient panels tend to grow as the resident advances through training. Patients may be recruited by a resident to his/her panel when that resident is on certain rotations such as the emergency department, in-hospital units or the newborn nursery. Residents may recruit unassigned patients to their continuity panels at any time. They should have access to the names of patients within their panel, allowing them the opportunity to periodically assess the ages and types of healthcare issues they manage.

Ideally, residents should be notified by clinic staff when their patients are admitted to the hospital. If possible, the resident may have the opportunity to follow a patient’s progress along with the hospital team and subsequently provide care for the patient following discharge. Overall, residents should function as a coordinator of care for their patients, making certain that appropriate medical referrals and follow-up visits are scheduled. When necessary, they should work with allied health professionals and key individuals within the patient’s school system to provide essential comprehensive outpatient care.

As residents advance toward completion of their training, parents/caregivers and patients should be informed by the resident of their impending departure. Efforts should be made to transition the ongoing care of those patients to the panels of incoming interns or, if warranted on the basis of a need to have more experienced resident care, then to panels of junior residents remaining in the program. These reassignments should be discussed with the parent/caregiver and, if appropriate, the patient, at the time of the continuity clinic exit visit.

II. Patient Logs
In 2007 the Residency Review Committee mandated that a patient log be maintained for each resident in the continuity clinic program. The log must include the age of each patient, the diagnosis for each visit, and the date of each respective encounter. Though it is not required, additional information may be recorded at the discretion of individual programs. Residency programs may chose to use the Accreditation Council for Graduate Medical Education (ACGME) electronic log, an in-house or internet based electronic log, a hand written log, or required information contained in a billing databank. Required information may be entered into the log by the resident or by a designated third party. Regardless of the log site used, all required data must be available for review by the RRC site visitor at the time of the accreditation visit.

Some programs allow individual resident handwritten documentation to be entered into a personal log. The downside of this approach is that ready access to that data often is unavailable. Handwriting legibility and the misplacement of individual resident lists present a problem. It may be difficult to determine if the resident is seeing a variety of patients at different ages or if a number of different disease conditions are being encountered. In addition, it may be difficult to determine if the resident has seen a patient more than once. Alternative approaches to this form of data collection should be considered.

A large number of programs require residents to enter patient information into an electronic database. If the resident, however, is busy or is rushed to get to his/her primary rotational assignment or other commitment, data entry suffers and potential inaccuracies result.

Some programs have a third party collect the resident data and enter it into the electronic database. This method also has many barriers to accurate data collection, such as incomplete patient identification or inaccurate diagnostic information (Kelly and Hicks PAS-07).

Within some resident continuity clinic databanks, patient billing information is collected. Aside from billing data, other specific information entered includes the date of the patient encounter, the patient’s age and gender, the level of service (CPT code), and the diagnosis (ICD-9 code). In the majority of practices, that information exists in a separate electronic format. Re-entering that information into the resident’s personal databank would appear to be unnecessary.

An advantage to the use of additional information contained along with the billing data is that the name of the billing physician (the preceptor) is readily determined. In some billing systems a field is provided for the insertion of the name of the
“performing physician”. This field could be populated with the name of the resident who saw the patient before checking out to their preceptor.

Electronic logs (in-house or internet-based) and electronic access to billing data have an advantage over individual resident patient lists and/or handwritten information. The electronic log would appear to be preferable, especially in regard to the ability to more easily assess individual patient and visit types and to more readily adjust individual patient panels to meet educational requirements.

Some programs use a combination of separate billing data and a handwritten log. Concern by residents frequently arises as to the accuracy of electronic data entry alone. They sometimes have difficulty reconciling what they recall as the number of patients actually seen and the diagnoses made with the information contained in the electronic data bank. Having additional handwritten information allows them the opportunity to compare the data.

III. Productivity Reports

Log data provides information to determine individual resident productivity. A periodic productivity report lets the resident know how they are progressing toward meeting expectations, and provides the continuity director an opportunity to review data on a regular basis. When information is compiled monthly or quarterly instead of annually, reporting becomes a more manageable task. Information contained in the report allows the director to assess individual patient panel size and possible adverse issues in regard to scheduling.

Information currently required by the RRC in the resident patient log includes the age of the patient and the patient’s diagnosis. To help optimize the learning experience, this data should be included in the resident’s periodic productivity report.

Diagnosis data can be divided into well child visits, acute care visits, and chronic care illness visits with the percent of children seen in each category indicated. Many residents are surprised when they see the diagnosis reports, often thinking that they have been seeing a greater percentage of well child check-ups and few patients with chronic illnesses. This misperception is attributable to what a resident considered in one particular case to be the primary diagnosis, i.e., simply a well child check-up. In fact the patient also had mild wheezing at the time of the visit, consistent with a chronic history of asthma, for which an inhalation treatment was administered. Citing this not infrequent situation gives the continuity director an opportunity to educate the resident as to appropriate documentation and coding. The billing data log is most helpful in this regard.
Age data information for the productivity report can be more usefully categorized into groups, i.e., infant, toddler, preschool, school age, and adolescent. Looking at this data over time will inform the director as to the need for a resident to have more or fewer patients added to their panel in a given age category.

If the data used to create the report is taken from the resident’s patient log, it should include the number of clinic weeks and the number of patients seen per clinic session. If the director chooses to create a monthly report, the data included should be cumulative to date, i.e., the June report should contain the June information as well as the year-end statistics.

The RRC requires a minimum of 36 clinic weeks per academic year. In programs that have the residents attend two half-day sessions per week, the total encounters for each session are added together and counted as one clinic week. This is important when addressing the need for make-up clinics. With resident duty hour constraints, continuity clinic sessions occasionally may have to be cancelled, moved to a different time slot, or rescheduled to comply with national requirements. It is essential that the rescheduled clinic needs to occur in the same week it was cancelled. Again, if it occurs in a week with an already existing clinic session, both clinics will be counted as only one clinic week. Care should be taken as to rescheduling when crossing from one month to the next occurs in the middle of a week.

Clinic directors, with some degree of regularity, should analyze the above data so as to make appropriate adjustments in a timely manner. It would not be helpful to discover late in the academic year (June) that a resident had attended only 33 continuity clinic sessions and/or during the year had seen only five adolescent patients.

IV. Calculating Continuity

The basic foundation of a continuity clinic is to have residents follow patients over time, be it normal newborns, whose growth and development are continually assessed, or a group of severe asthmatics, followed in and out of the hospital, who require medication adjustments and considerable family education. Learning the natural history of disease, how it affects families, and how a physician, as an essential member of the patient’s medical team, can impact the disease process is vitally important to the resident’s education. How we as directors interpret a resident’s participation in the longitudinal care of a patient defines continuity. How we measure continuity is not as simple. The concept is more fully discussed in Chapter 12. What follows are some of the more straightforward methods.
1. **Percent of Patients Seen as Part of the Resident’s Panel**

One way to calculate continuity is to look at the total number of patients seen by a resident and, of those seen, how many were assigned to the resident’s panel. This method has several pitfalls. If the panel is large (several hundred), the resident may see only patients assigned to his/her panel, but may never see a particular patient more than once. This resident will have 100% continuity as to the patients in his/her panel, but will not see a large majority of those patients more than once.

A smaller panel size may result in fewer appointments per session, if the resident only sees assigned patients. The average number of patients per session then will be low, while continuity is high. A more productive resident will see assigned patients, but during slow times will see a large number of patients not assigned to his/her panel, thus increasing the average number of patients seen per session, but decreasing the number of continuity encounters.

2. **Number of Times a Resident Has Seen a Patient or Has Had Verbal or Email Contact with Them**

Continuity may be defined as following a patient over time. Therefore, the number of times a patient is seen by a particular resident divided by the number of times a patient has been seen in the clinic in a year (or quarter) can be a measure of continuity. Complementary to that, the number of times a resident sees a patient in a year (or quarter) is also a measure of longitudinal care and therefore continuity. Documentation of phone conversations or email contacts with the patient may also be considered consistent with the concept of continuity.

3. **Reflective Writing**

One way to assess (though not measure) continuity is to have residents participate in a reflective writing project. Reflection enables learners to analyze their experiences and capture the wisdom that underlies those experiences (see Plack 2007 below). Documentation of the resident’s impact on a family and/or the patient/families impact on the resident’s education and experience also may help in the assessment of longitudinal care and therefore continuity.

**Summary**

This chapter has addressed choice of a data collection tool, setting up patient panels, and recording essential data into resident patient logs. It also has touched on productivity reports and calculating continuity. In summary the data collection tool used should record information needed for the PIF, such as clinic weeks and patients.
seen per clinic session. However, it also should allow for easy sorting, so that the director can extract information needed to let each resident know if he/she is seeing an appropriate age mix of patients, diagnoses, disease processes, and visit types. The patient panel for each resident should be continually reviewed by the director, be flexible, and be easily adjusted so as to meet the educational needs of the resident.

References:
Accreditation Council for Graduate Medical Education. Program requirements for Pediatrics, Revised 2007 www.acgme.org

Accreditation Council for Graduate Medical Education, Pediatric Program Information Form, www.acgme.org

Kelly NR and Hicks PJ. Can Continuity Patient Data be Accurately Entered into the ACGME Case Log by a Third Party? One Program’s Experience Abstract presented at the Pediatric Academic Society’s Annual Meeting, Toronto May 8, 2007
CHAPTER 6
CONTINUITY CLINIC OUTCOME MEASURES AND EVALUATION
Cynthia L. Ferrell, MD, M.S.Ed

INTRODUCTION

Evaluating the continuity experience provides continuity clinic directors the opportunity to ask and answer two critical questions: 1) “Were the goals and objectives of the continuity clinic experience met by my residents?” and 2) “Is the continuity clinic experience meeting the ACGME program requirements and the program’s intended outcome measures?” Information obtained in the process of evaluation allows for guidance in continued quality improvement for the experience. Evaluation results can be used for a number of important purposes: to assess individual achievement (of learners or teachers), to satisfy ACGME requirements, to document accomplishments of the continuity clinic director, to serve as a basis for academic presentations and publications, and to garner ongoing support from numerous stakeholders.

All aspects of the continuity experience should be subject to ongoing, periodic evaluation. This includes evaluations of learners, preceptors, the curriculum, and the quality of the clinical services. The overall evaluation process can be quite an overwhelming task so it is helpful to be methodical in the planning of the evaluation processes. This ensures that important outcome questions are answered and that relevant needs are met. This chapter will provide a logical, streamlined approach to evaluating all components of the continuity experience. The essential steps will be identified and will be linked to each aspect of the program’s evaluation.

I. BASICS STEPS IN THE EVALUATION PROCESS

Regardless of which component of the continuity clinic experience you are evaluating, the same basic steps should be followed. Methodically considering each step in the evaluation process will ensure that important questions are answered.

A. Step 1 – Identify users of the evaluation information

Many individuals will be interested in the results of the continuity experience evaluation. The individuals who will most likely utilize aggregate information for continued improvement will be the continuity clinic director and the residency training program director. In addition, the residents and preceptors will be likely to utilize individual information for their own improvement. Lastly, those who have administrative and/or fiscal responsibility for the experience may be anxious to see evidence of the program’s success. Individuals to consider when identifying users of evaluation information include: the residents, the preceptors, the residency program director, the department chair, the medical director of the clinic, hospital administrators,
and any others who may have contributed or supported the continuity experience financially or otherwise. Your overall evaluation may have numerous components and it is worth early identification of which users will receive which pieces of the evaluation pie.

B. **Step 2 – Identify the purpose of the evaluation information**

When designing the evaluation strategy for the continuity experience, one should be aware of the purpose of each type of evaluation. It is recommended that evaluations serve two purposes – formative and summative evaluation of both the individuals and the continuity experience itself.

**Individual evaluation**

Evaluation of individuals usually involves determining whether or not the individual, be it learner or preceptor, has achieved the outcomes desired. Evaluation may be formative or summative. Individual formative evaluation is an evaluation that provides *feedback*, usually to a learner, in order to improve their performance. Of all the evaluations residents receive during their training, no faculty member has better insight into overall individual performance than the continuity clinic preceptor. The weekly interaction between resident and preceptor affords a unique opportunity for close longitudinal monitoring and frequent feedback. Formative evaluation should include both praise and constructive criticism. In order to achieve the primary goal of improving performance over time, it should be provided as often as possible. See appendix 1 for suggestions on effectively providing formative feedback.

Summative evaluation of an individual measures whether specific objectives were accomplished in order to place a value on the performance of the individual. For residents, certifying competency is often the goal of summative evaluation. For preceptors, summative evaluation often serves to provide support for promotion. Summative evaluations are certainly more formal and are often obtained on an annual basis.

**Program evaluation**

Formative program evaluation provides information that allows a director to continually improve the program’s overall performance. This usually takes the form of surveys to learners, and even preceptors, nurses, or office staff, with questions that address areas for improvement within the continuity program. Information obtained may be quantitative (ratings of various aspects of the curriculum) or qualitative (open-ended comments regarding strengths, weaknesses, areas for improvement). Aggregates of formative and summative individual evaluations may be reviewed to identify areas for improvement. Formative program evaluation often occurs at some very specific
opportunities: change of program director or continuity director, times of challenge within the program, or around the time for internal review of the residency training program.

Summative program evaluation measures the success of the program and/or curriculum in achieving the objectives for all targeted learners, its success in achieving its process objectives, and its success in pleasing and meeting the needs of the learners and faculty. The results of summative program evaluation are often made available to the continuity clinic director and the program director and occasionally other vested individuals including the department chair and hospital administrator. The outcomes of summative evaluation may be a useful means to determine the effectiveness of multiple different sites for continuity clinic. Sites which are less under the direct control of the continuity clinic director (sites away from an academic center or dispersed throughout the community) can be evaluated summatively on an annual basis and comparison of sites to program expectations can provide insight as to the continuation of any particular site.

By collecting both formative and summative data for the learners, the preceptors, and the continuity experience, the continuity clinic director can consider specific ways to put the information to use. Some of the ways to consider using the information include:

- Longitudinal evaluation of learners
- Improving the curriculum
- Judgments regarding success of a particular continuity site or preceptor
- As evidence of teaching effectiveness for promotion of preceptors
- As evidence of program effectiveness for promotion of continuity clinic directors
- Justification of resource allocation
- Motivation and recruitment
- Presentations, publications, and adoption of curricular components by other training programs

C. Step 3 – Identifying resources

Effective and useful evaluation strategies take a significant amount of commitment and time. Limits in resources may confine and direct evaluation efforts and thus the availability of resources should be considered early in the evaluation process. Resources to consider when creating evaluation plan include:

- TIME – specifically for summative evaluations that may have significant implications (such as program citations) one must plan adequate time to create valid tools as well as to collect, analyze, and report data
• PERSONNEL – includes both staff with time to help in the collection/analyzing process but also the expertise in areas such as survey development or data analysis
• RESOURCES – including appropriate software or internet resources
• FUNDS – for outside resources or consultants if necessary

D. Step 4 – Choose evaluation methods and instruments

When choosing measurement methods and instruments, the specifics are determined mostly by the program component being evaluated. Some methods and tools may be used to evaluate more than one program component. The following are areas to consider when choosing or creating instruments for evaluation:

• VALIDITY – Probably of most importance for continuity clinic evaluation is internal validity. Your tools should possess the ability to accurately measure what they are supposed to measure. Tools that are also externally valid (generalizable to other continuity settings or populations of residents) may serve a profound purpose in this era of documenting resident competence.

• CONGRUENCE – The tool used to evaluate a component of the continuity experience should correlate with the purpose of the evaluation. For example, if you wish to measure acquisition of medical knowledge regarding immunizations, a written test such as the in-training exam or a short quiz after an online module are appropriate methods for evaluation. As well, direct peer observation of faculty teaching in clinic may be a good method to evaluate teaching effectiveness of preceptors.

• FEASABILITY – Institutional resources and time are often limited. Continuity clinic directors may be put in the position of having to choose evaluation methods based upon available time, space or money. For example, OSCE may be a standard in some institutions for evaluation of resident clinical skills. However, if there is a lack of faculty time available to evaluate, a lack of space to perform the exams, and a lack of funds to pay for simulated patients, using an OSCE to evaluate becomes a much less feasible option. Real-time direct observation in the room or with a video feed may be a less expensive, less time consuming option.

• RELIABILITY – Evaluation tools should be reliable. The results of the evaluation tool should be the same when repeated by one individual (intrarater reliability) or when used by multiple individuals (interrater reliability). Surveys and questionnaires should contain questions that will reliably be understood by those asked to complete it.

Once the evaluation tools are identified, the process by which they will be implemented can begin. Who will be administering tools, when, how often, and how the data will be collected and reported are all important considerations. Appendix 2 provides guidance as to what may be evaluated for any particular continuity experience component and suggestions on how to consider evaluating it.
E. Step 5 – Reporting results

In planning the reporting of evaluation results, it is helpful to return back to step 1 and think of the needs of the users initially identified. When reporting results, the following should be considered:

- **TIMELINESS** – The timeliness of evaluation reporting can be crucial. Learners, in particular, benefit from immediate feedback of formative evaluation results. Timely feedback can be processed while the learning event is still fresh and change is more likely to occur. Program evaluation results are more apt to induce change if provided at a time that allows for preparation before a new academic year begins.

- **FORMAT** – The format of evaluation reporting should fit the need of the user. Detailed individual evaluation forms with comments will be most useful to the individual learner. A summary of aggregate data may be more helpful to a residency education committee or program director.

- **CLARITY** – It is always desirable to present evaluation results in a clear, succinct manner; particularly when high stakes decisions are in play. Enhancing results with descriptive statistics (such as mean scores, percentage distributions) can really bring to life the summaries of your data.
Appendix 1
Tips on providing effective formative feedback

Principles of providing effective feedback
- Timeliness
- Know the expectations and/or objectives of the experience and relate feedback to these
- Individualize the feedback for each resident
- Provide both praise and constructive criticism
- Elicit the learner’s own thoughts and feelings about their performance before providing your feedback
- Be diagnostic – identify specific weaknesses or refer to specific behaviors
- Use “I” messages – “I notice that…”
- Be descriptive, not judgmental
- Give remediation – specific suggestions for improvement and follow-up with next feedback session

Behaviors guaranteed to create a defensive climate
- Ordering without explanation
- Threatening environment
- Becoming a parent, not a teacher
- Criticizing
- Lecturing
- Name calling
- Harshly interpreting and analyzing
- Interrogating
- Withdrawing
- Over-using sarcasm or humor
- Dispensing blame

There is a helpful chapter on feedback in The Clinician-Educator’s Handbook (see references). It provides a succinct review of skills that preceptors may find useful in providing feedback.

“Without feedback, mistakes go uncorrected, good performance is not reinforced, and clinical competence is achieved empirically or not at all”

- Jack Ende, M.D.
Appendix 2

Individual Evaluation

<table>
<thead>
<tr>
<th>Things to consider evaluating</th>
<th>Tools to evaluate them</th>
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</thead>
<tbody>
<tr>
<td>Interactions with patients/parents</td>
<td>Patient/parent feedback form</td>
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<tr>
<td>Completeness and timeliness of charting</td>
<td>Chart review with checklist</td>
</tr>
<tr>
<td>Accuracy of charting</td>
<td>Real-time chart review with verbal feedback</td>
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<tr>
<td>Interpersonal interactions with nursing or</td>
<td>Multi-source feedback forms (360-degree evaluations)</td>
</tr>
<tr>
<td>front office staff</td>
<td>Structured clinical observation</td>
</tr>
<tr>
<td>Skills in history, physical examination, and</td>
<td>Continuity clinic logs/reports</td>
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<tr>
<td>provision of anticipatory guidance</td>
<td></td>
</tr>
<tr>
<td>Patients/session, diversity of patient problems</td>
<td>Chart review with checklist</td>
</tr>
<tr>
<td>Longitudinal provision of care for chronic</td>
<td>Online curriculum with pre- and post-testing</td>
</tr>
<tr>
<td>medical, behavioral or social problem</td>
<td>Direct observation by nursing staff with completion of IM/SQ injection checklist</td>
</tr>
<tr>
<td>Medical knowledge regarding immunizations</td>
<td>Global evaluation form</td>
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<tr>
<td>Procedural competency in immunization</td>
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<td>administration</td>
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<td>Professionalism</td>
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Program evaluation

<table>
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<th>Things to consider evaluating</th>
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<td>Individual site strengths and weaknesses</td>
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<td>Skills of preceptors as a whole</td>
<td>Aggregate of individual faculty data</td>
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<td>Aggregate continuity clinic logs/reports</td>
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<tr>
<td>Financial impact of resident clinics for</td>
<td>Review of billing/RVU data by residents at site</td>
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<tr>
<td>Quality improvement initiatives e.g.</td>
<td>Immunization rates by resident/faculty/team/site</td>
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<td>immunizations</td>
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**If you are planning on creating your own evaluation tools, whether for learner or program evaluation, the Academic Pediatric Association Educational Guidelines for Residency Training website have great resources to help you get started**
Summary

Program evaluation is often approached in a haphazard fashion, obtaining only those pieces of information that are required by accrediting bodies before a site visit. However, a thoughtful, methodical process of planning combined with meticulous efforts at data collection and analysis, allows a continuity director to accomplish many things. Continuity directors and training program directors will be able to show they are meeting the requirements of the ACGME and their institution as well as providing an organized approach to continuous educational quality improvement. As well, the continuity director will have a built in process to document the success of their efforts which should contribute to the educator’s portfolio for promotion. So, when beginning to plan an evaluation process for your continuity experience, ask yourself the following questions and you will be well on your way to a successful experience.

1. Who will be the users of my evaluation information?
2. What are the needs of those who will be reviewing my data? For what purpose will the evaluation results be utilized?
3. What resources are available to assist me in the process?
4. What are the most appropriate methods to conduct my evaluation?
5. Are my tools appropriate for their intended purpose?
6. Who will collect and analyze my data?
7. How shall my evaluation information be collated and distributed?

References and Resources


www.bcm.edu/pediatrics/clinician_educator_handbook

Ende J. Feedback in Clinical Medical Education. JAMA 1983;250:777-781

King, J. Giving Feedback. BMJ 7200 Volume 318: Saturday 26 June 1999

Association of Pediatric Program Directors Share Warehouse (www.appd.org)

Academic Pediatric Association Educational Guidelines for Residency Training (have tools for creating evaluation forms www.ambpeds.org/egwebnew)
Chapter 7

RESEARCH IN PEDIATRIC CONTINUITY CLINIC SETTINGS
Bill Stratbucker, MD, Janet Serwint, MD, Sue Feigelman, MD, and John Olsson, MD

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INTRODUCTION

For many of us working in a pediatric continuity clinic setting, direct patient care and teaching are a natural fit. Both provide a sense of comfort and enjoyment. For a number of teacher-clinicians, however, there may be an additional desire to pursue or become involved in clinical research. This may be due to a pursuit for personal satisfaction and/or perhaps as a longing to contribute to the medical literature. Others pursue research to broaden their resumes as part of faculty development and/or the ultimate goal of faculty promotion. Reasons for not becoming involved in research may include a lack of interest or the substantial time commitment needed. Perhaps foremost among the reasons for not participating in research is the absence of protected time. For those who are interested and able to overcome possible barriers, this chapter will highlight: 1) reasons to do clinical research; 2) steps necessary for study design; 3) an overview of three areas of research - clinical care/health services/education; 4) examples of completed studies carried out in continuity clinic settings. The reader will be introduced to (if not already familiar with) the CORNET and PROS projects as examples of national ambulatory pediatric practice-based research networks. A section devoted to general resources includes: 1) potential research collaborators; 2) obtaining assistance with research design; 3) faculty development; 4) database and funding sources; 5) a general bibliography.

The intent of this chapter is to encourage those in the continuity clinic environment to become motivated and inspired to pursue research as an integral part of their academic activities.
I. ADVANTAGES TO DOING CLINICAL RESEARCH

Personal Growth

- Derive satisfaction in problem solving or answering a clinical question important to you and to the care of your patients
- Gain satisfaction from testing interventions you initiated in the clinic and how they may have impacted patient care and/or resident experience
- Satisfy personal curiosity regarding clinical issues
- Stimulate critical thinking
- Increase career satisfaction
- Enhance career advancement.
- Derive personal satisfaction from your contributions to the medical literature and the resultant potential impact on improved patient care and/or resident education

Educational Advantages

- Send a message to residents, medical students, and office staff that research is important
- Provide an example for residents and medical students as to the need for lifelong learning
- Expose residents and medical students to the sophistication and complexity of primary care practice and research
- Determine resident and medical student needs while conducting educational research
- Reinforce evidence-based medicine and best practice concepts for residents, medical students, and office staff

Patient Care

- Record clinical observations for the purpose of hypothesis building
- Determine whether the standard of care you provide is effective
- Test efficacy and effectiveness of current or new clinical, educational, and social interventions
- Provide a message to patients that personal health care is important
- Financial research support may enhance patient care and patient satisfaction
- Research efforts may enhance your ability to discern patient needs
- The current shift in the direction of medical care to patient satisfaction and service evaluation may make it imperative to study the outcome measurements
Pragmatic Reasons

- Grant money may be needed to help cover your salary
- The grant support may allow you to have more protected time
- Research may enhance the faculty or division's departmental image
- Continuity clinic setting may provide a patient base for your research and perhaps for other faculty colleagues (inside or outside your division or department)
- May enhance interactions or communications with other divisions and departments
- May be needed to help fulfill quality improvement requirements
- May better position you in directing resources within the continuity clinic, especially if significant local clinical outcomes result from the efforts of rigorous scientific study

II. DESIGNING CLINICAL RESEARCH STUDIES

Steps in Designing Clinical Research Studies

Adapted from: “An Introduction to Clinical Research,” C. DeAngelis, editor, Oxford University Press, New York, 1990; an excellent resource. The concepts are applicable to both health services and educational research

- Develop an interesting question motivated by past experience
- Structure a question in the form of a testable hypothesis
- Choose a study question for which either a positive OR a negative result can be valuable
- Conduct study search to determine if the question has been answered (totally or partially)
- Based on the literature search, revise the question and hypothesis accordingly
- Select the most appropriate study design in order to address the research question; the proper design will drive all other aspects of the research
- Determine independent, dependent, and potential confounding variables and sample size
- Based on chosen variables, determine what tools, materials, personnel, and time are necessary to gather and analyze the data
- Given the preceding requirements, is the study FEASIBLE?
- Discuss the proposed study with a biostatistician or someone experienced in clinical research
- Consider revising or altering the question/hypothesis and/or alter the variables according to available resources and time
- Choose appropriate subjects (including potential controls) from whom meaningful referable data can be obtained
- If interest prevails (separates the true clinical researchers from the dabblers), develop methods to collect subject data
- PILOT all methods and (in particular) questionnaires
• Only Afterwards should data be collected. (Novices frequently advance too rapidly, compromising the study value)
• Analyze the data
• Submit an abstract for presentation to a national meeting
• Write-up the study for publication
• After the paper is accepted REJOICE! – [In most cases, it may require several attempts.]

Types of Study Design


Basically:
1. Observational Study - observe events taking place in study subjects
2. Clinical Trial - apply an intervention and determine the effect on study subjects

Observational Designs

Cohort study – group of subjects followed over time [Prospective vs Retrospective]

Example: The Nurses’ Health Study. In 1976, investigators obtained lists of registered female nurses, aged 25 to 42, residing in 11 different states. They mailed an invitation to each of them asking them to participate in the study. Surveys included questions regarding weight, exercise, and health risk factors. Subsequently, a number of periodic surveys were sent.

Cross-sectional – review of study subject survey responses obtained on a single occasion

Example: The first continuity clinic study to determine the feasibility for developing the CORNET project was based on a survey of pediatric residents in regard to their perception of their continuity clinic experience. [Citation - Serwint, JR and the Continuity Clinic Special Interest Group: Multi-site survey of pediatric residents’ continuity experiences: their perceptions of the clinical and educational opportunities. Pediatrics 107 (5): e78, 2001]

Case-control – comparison of a group of subjects with a disease or condition with another group of unaffected subjects

Example: To evaluate the relationship of the administration of Vitamin K in the newborn with the later development of childhood leukemia, German investigators selected 107 children from their cancer registry. They also randomly selected a total of 107 children individually matched by gender and date of birth, living in the same community as one of the children recently diagnosed with leukemia. The predictor variable was whether or not vitamin K had been administered.
**Experimental Design**

**Randomized blinded trial** – two groups are selected by random process and studied as to the result of a blinded intervention.

Example: A study entitled *The Implementation and Evaluation of a Bright Futures Curriculum within CORNET Continuity Practices* - looked at the effect of a curricular intervention on the development of knowledge and communication skills by pediatric residents, in their continuity practices, providing care for children’s oral health needs. Continuity clinics were randomized to provide either the study intervention or a control intervention.

Often the sequence for studying a topic begins with a descriptive observational study. This provides the investigator with a “lay of the land.” Descriptive studies are followed or accompanied by analytic studies intended to evaluate associations, possibly identifying cause-and-effect relationships. **The final step in the process is a clinical trial to investigate the effect of an intervention.**

**III. DEVELOPING YOUR RESEARCH AGENDA**

It is in each faculty member's best interest to determine the parameters of his/her research agenda, i.e., to set goals for: 1) the type of research to be accomplished; 2) the desired level of research involvement; 3) the time period to complete the research; 4) whether more training is needed to advance further in research. It is all dependent upon individual interest in doing research, the amount of research time available, and the level of personal expertise and comfort in doing research.

**1. What type of research would you like to pursue?**

This entails making a decision as to an area or areas of interest. Although a generalist may participate in variety of interest areas simultaneously, it is more time efficient to concentrate on a single area. As more well-focused expertise is gained by the individual in regard to a particular subject, more individual recognition and respect will accrue from the medical community at large.

Most clinician researchers want to concentrate on clinically relevant issues. As very busy, highly engaged physicians, they are acutely aware of a number of very important clinical issues and questions that need to be answered. For them, having frequent clinical contact with patients and
their respective parents/guardians is essential to producing the high quality, clinically relevant research they seek.

2. What would you like your level of research involvement to be?

This often depends on the amount of research time you have or can negotiate. For those who have little research time to complete a research study, every two to four years may be a reasonable goal. For those who have 30 to 40% research time, one may choose to be involved with several projects simultaneously. The level of involvement also depends on your level of expertise and your confidence in doing research. When first starting out, you may benefit from being a study co-investigator, taking advantage of what you learn from a more senior investigator as to design, methodology, questionnaire, outcome measures, etc.

Involvement in research is a developmental process, the more time devoted to it, the better skilled one becomes, and the more likely success will be achieved in obtaining grant support. Having grant funding is essential to negotiating for "protected time." For those with more research time, assuming a principal investigator role may be most fulfilling.

3. What is the time period in which you would like to finish the study?

We all benefit from deadlines; involvement in clinical research is no different. Initially, not many of us are good at completing a research project in a timely fashion, nor are we as comfortable in the research arena as we are at teaching or patient care.

With teaching and patient care, satisfaction is almost immediate. We are in demand; there is always a patient in need of care or a resident who has a question. These tasks require our attention and necessitate a considerable amount of time. On the other hand, research needs are rarely immediate. It may take months to complete a grant proposal or to recruit collaborators. Delayed gratification is to be expected and the research process can be difficult.

Few of us have protected time without really planning for it. Our "protected time" can easily be taken up with clinical issues. To concentrate on a research effort, it may become essential to set aside a half-day a week (the same time every week) either at home or in a sequestered part of the hospital, away from any potential distractions and interruptions.

The amount of research one hopes to accomplish depends on the amount of time available. If you have a minimal amount of time, then completing a project every two to three years may be a reasonable goal. For some, it may be best to function as a co-investigator or co-collaborator.
4. Do you feel the need for more research training?

With ongoing participation in research, almost everyone acquires self confidence, occasionally leading to development of their own study project and design. If someone is fortunate enough to have 30 to 40% protected time, there may be a desire to become involved in a number of research projects simultaneously.

If you lack confidence, and yet want to take more of a leadership role in designing a study, you may want more formal training. Such training may be obtained through a series of workshops, e.g., those offered at the annual meeting of the APA. Other training may be available at a one to two week research methodology seminar. For some, more structured training may have to be in the form of a two to three year fellowship, in which research skills are learned and expertise gained in completing a research project.

IV. CLINICAL CARE RESEARCH

Because you interact with patients on almost a daily basis, interesting medical and social questions frequently arise. Fortunately, the continuity clinic practice may be a perfect laboratory in which to study these questions. In addition, the practice also can serve as a venue for studies involving newer approaches to medical care and/or interventions, applicable to your patient population.

Definition of Clinical Care Research

Clinical care research involves the study of medical issues, diseases, and clinical outcomes which can have a direct impact on patients, their care, and their family.

These studies provide an opportunity to determine the best way to treat patients, thus adhering to the concept of “best practices”. They involve a spectrum of problems/issues, from injury prevention and anticipatory guidance, immunizations, and screening techniques, to disease descriptions, disease management, outcomes, etc.

Research Studies in Clinical Care can include:
- Description of the characteristics of a disease
- Description of the natural history of a disease
- Determination of the usefulness of a diagnostic test
- Measurement of the associations between risk factors and a disease, attitude or behavior
- Determination of the effectiveness or adverse consequences of a treatment regimen
- Investigation of the effectiveness of biologic agents (antibiotics, drug regimens, alternative therapies, etc).
- Investigation of the effectiveness of certain vaccines

**Characteristics of the Academic Continuity Clinic Site Advantageous for Clinical Care Researchers**

In a teaching setting, a fair amount of critical thinking takes place, often resulting in a number of clinical questions. The prepared and attentive observer rarely will have difficulty in developing a research question.

In the continuity clinic setting, a readily accessible patient population is available. Patients and parents generally are willing to enroll in clinical research studies and often appreciate the opportunity to participate. Depending upon the type of study chosen, data collection may be possible at the same time as patient care is being delivered. During the study process, additional information may be obtained in regard to an individual patient and their particular needs. As a result, there may be a direct improvement in the quality of care delivered. Examples of such studies include the use of screening tools or medical record reminder prompts to facilitate capture of the medical history or to enhance compliance with recommended screening.

Overall, clinical care research has the potential to improve the doctor-patient relationship. Specific to that issue, quality improvement (QI) studies are reviewed elsewhere in this manual. (See Chapter 11 – Quality Improvement in Continuity Clinic)

Because you function in a teaching capacity and no doubt serve as a role model for residents, your involvement in conducting research in the continuity clinic setting may provide residents the opportunity to model such behavior. Ultimately, it may influence them to pursue a career in general pediatrics.

You may have the opportunity of being on the cutting edge of product development of new antibiotics, vaccines, or formulas. Whether you serve as the principal investigator for the study, or agree for your continuity clinic patient population to volunteer as subjects or controls in a study, you have the opportunity to participate directly in new treatments and vaccine development.

Continuity clinic budgets generally are restricted. A research study however may provide the funding needed to hire a research nurse/technician and/or to purchase needed equipment for the clinic or the study itself, e.g., a new computer to track lab data. Funds may also be used to purchase furniture, books, or a telephone line.

A continuity clinic academic setting may be better suited than a private practice setting for testing certain research questions. For example, some medical treatment strategies may be viewed as acceptable standards of care, yet have never been exposed to the rigors of clinical
research assessment. A clinician in private practice may feel strongly about a particular approach to patient care and be unwilling to collaborate in testing the validity or effectiveness of that approach. In the academic setting however, the support of interested colleagues may make one of us more willing to critically examine that practice approach. For instance, a group of authors, who were studying the usefulness of an antihistamine-decongestant preparation tried at first to conduct the study in a private practice setting. They were unsuccessful. The practitioners believed strongly in the usefulness and/or benefit of the product and were unwilling to participate in the study. Alternatively, the continuity clinic academic site became the venue for testing the study hypothesis.

Medical Students, residents and/or fellows may be interested in assisting with research projects. Consider finding ways to involve the medical students, residents and/or fellows in research studies. Some training programs encourage residents to develop a research project. Medical students and some house staff members may choose to use an elective month to participate in a clinical research project. The academic continuity clinic site may be an excellent site for residents, since they are often quite familiar with the patients and the health service system.

Faculty in other divisions of departments may wish to work with you in conducting clinical research within the continuity setting. An endocrinologist may have a proposal for studying lab results in children at risk for diabetes, or a psychiatrist may be interested in finding large numbers of children diagnosed with ADHD.

Characteristics of the Academic Continuity Clinic Site Presenting Barriers to Clinical Care Research

These sites may produce results limited in their generalization to other patient populations. In some cases, if the clinic patients are predominantly of a certain ethnic or socioeconomic group, the results may not be replicable in other patient populations.

Depending on the patient population under study, some families may not be highly motivated to comply with study guidelines. However, incentives may prove to be helpful. National no-show rates for continuity clinic populations in general may be more prevalent than in private practice populations. This could have an impact on outcomes data. Overcoming this particular barrier may be partially resolved by having a clinic listing of a number of alternative telephone numbers or known contacts.

Research may cause disruption to clinic patient flow. Because of the time needed for patient recruitment or interviewing, care may be disrupted. Adequate private areas for conducting the consent process may be unavailable. Clinic staff may not always be sympathetic to the study issues.
Some clinical care studies require support funding. Grant money may be challenging to identify, especially for those engaged in a first research effort and without an established research reputation. (See Chapter 9 -Funding – as an excellent resource.)

Because of other clinical and teaching responsibilities, finding the time to do research may be difficult. Studies which just involve chart review can be done in your “spare” time. Patient or resident education studies can be done during clinic time. Grant funding to pay part of your salary will allow you to have protected time.

V. SELECTED BIBLIOGRAPHY OF CLINICAL CARE STUDIES DONE IN A CONTINUITY CLINIC OR GENERAL AMBULATORY PEDIATRIC CLINIC

VI. HEALTH SERVICES RESEARCH

In order to maintain a critical continuity clinic patient volume for resident education, health service issues are becoming increasingly important. Community-wide competition for patients can have a significant impact on the teaching program of academic medical centers. Those physicians/organizations providing optimal health care services stand to benefit by developing a loyal patient following. Health care organizations, including managed care companies, have an expectation, and perhaps a mandate, that physicians and entire medical clinics function with increased efficiency and attention to cost-effective care. They continuously review patient satisfaction surveys and perform quality assessment reviews. With this in mind, continuity clinic directors and others involved in teaching residents, should give thoughtful attention to becoming engaged in health services research.

Definition of Health Services Research

In the study of health services, epidemiologic, sociologic, economic, and other analytic sciences are involved. Research devoted to the topic is usually concerned with relationships between NEED, DEMAND, SUPPLY, USE and OUTCOME. The aim of health services research is to evaluate the quality and the amount of resources devoted to health care.

Key Points:

- Evaluation of structure - resources, facilities, and manpower
- Evaluation of process - where, by whom, and how health care is delivered
- Evaluation of output - amount and nature of provided health services
- Evaluation of outcome - whether persons using the health services provided are experiencing measurable benefits, i.e., improved survival or reduced disability

Paradigms can be useful in establishing a framework/foundation for research projects, e.g., using programs such as the "Perfect Patient Encounter” and/or "Continuous Quality Improvement” as points of entry into health services research. - Taken From: Last, JM. A Dictionary of Epidemiology. New York. Oxford University Press; 1983.

Advantages of health services research in continuity clinic settings

- Opportunity for pediatric residents to become involved in a research project within their own "medical office" setting
- Study results may enhance clinic efficiency
- Nursing and office staff enthusiasm for the project may stimulate the manner in which they deliver health care and have a positive impact on the working environment
- Opportunity to “make a difference” by contributing to the medical literature, particularly when there is limited published data
- Opportunity to trouble-shoot perceived problem areas and/or validate the benefit of specific practice activities
- Research funding may result in needed clinic resources
- Opportunity to directly address patient satisfaction concerns

Barriers to health services research in the continuity clinic setting

- Staff already overwhelmed with other responsibilities may not be receptive to what is perceived as additional work
- Idiosyncrasies within the clinic setting may limit the possibility of generalizing the results to other clinic setting
- Hospital or clinic administrative mandates may limit experimental studies referable to patient satisfaction or new models of care
- Process for data collection may slow patient flow and have a potential impact on room utilization and physician work efficiency
- Follow-up of patients may be hampered by external factors, e.g., limited access to transportation, lack of communication devices (phones, computers, etc.)

VII. SELECTED BIBLIOGRAPHY OF HEALTH SERVICES RESEARCH STUDIES DONE IN A CONTINUITY CLINIC OR GENERAL AMBULATORY PEDIATRIC CLINIC:


Pearce T, O'Shea JS, and Wessen AF. Correlations between appointment keeping and reorganization of hospital ambulatory pediatric services. Pediatrics. 1979;64:8187.

Quattlebaum TG. Computerized patient scheduling in outpatient residency practices. AJDC. 1989;143:1333-1336.


Wilson MEH, Weiner JP, Bender JC, Bergstrom SK, Starfield BH. Does a residents' continuity clinic provide primary care? AJDC. 1989;143:809-812.

VIII. SELECTED REFERENCES IN REGARD TO HEALTH SERVICES RESEARCH


Videos for Conducting Health Services Research. Google Search. Thomsonreuters.com/KnowledgeEffect

What is Health Services Research? Department of Health Services, School of Public Health, University of Washington. Seattle, Wash.

IX. EDUCATIONAL RESEARCH

The pediatric continuity clinic experience provides an ideal setting for studying approaches to resident education, the impact of various educational interventions, and the differences in the style of teaching provided in a variety of continuity clinic venues. In light of new Institute of Medicine (IOM) guidelines/mandates regarding resident duty hours, innovative models of concise but effective teaching may be needed. Applying newer approaches to teaching should serve as an incentive for continuity directors and other interested clinical faculty to become involved in educational research.

What is involved in Educational Research?

The essence of this type of research is the evaluation of the educational process. Research in regard to medical education includes studying the medical educational process in its entirety.

- Assessing needs of learners and setting goals & objectives
- Assessing needs of faculty
- Teaching strategies and materials
- Evaluation and feedback mechanisms
- Faculty development
- Outcomes related to learners (e.g., attitudes, knowledge and skills; behavior during test conditions or in actual medical care settings)
- Patient outcomes related to the educational process (e.g., patients' or parents' knowledge, attitudes, skills, health related behaviors and health status)
- Health system outcomes related to the education process (e.g., quality of care, medical records, efficiency of service, cost of care)
• Educational system outcomes (e.g., effect of new teaching method/program on student/resident recruitment, faculty retention, potential for financial savings or loss in regard to other components of the teaching system)

Research in regard to medical education involves methods and rigor similar to other types of scientific research. Study designs are comparable to those employed in clinical research. Note below a bibliography of published studies referable to continuity clinic settings. Also review described study designs covered by L. Wissow and J. Pascoe – “Types of Research Models and Methods” [Chapter 4] - in C. DeAngelis, An Introduction to Clinical Research. New York, Oxford University Press, 1990.

X. Advantages for medical education research in the academic continuity clinic setting

• Continuity clinic staff and faculty share a common mission to educate residents and tend to be supportive of research in the area of medical education. (Unintentionally, this advantage may create bias in the measurement of innovation effects, as faculty wish to demonstrate that their teaching has had a positive impact.)

• Researchers are "on-site" much of the time. Unlike subspecialty colleagues, most continuity clinic faculty physicians devote the majority of their time to clinical teaching. The clinic venue provides a number of opportunities to make observations and generate hypotheses and, ultimately to collect data. (The drawback is that teaching and patient care demands compete with research efforts. Well planned, simple projects however often can be performed along with other clinic activities).

• Relatively stable group of patients in the clinic, allowing for longitudinal data collection. Patients/parents are often loyal to and invested in the practice. Generally, they are willing to provide consent and cooperate with research studies. (Potential for bias may result, as patients/parents favor "their resident" and respond with high satisfaction ratings, making it difficult to discern changes in satisfaction post-intervention.)

• Trainees are present at the clinic site during their entire residency. As a result, it is the only site where studies requiring measures/observations of resident performance can be conducted at set times (i.e., entry, mid-year, and end of year phases).

• Although service demands are often high, acuity is usually low enough to permit flexibility needed for research data collection. Scheduled appointments can be arranged to meet data collection needs (e.g., all clinic appointments blocked during 1st half hour, allowing residents time to fill out a survey) or to obtain informed consent prior to videotaping sessions involving residents and patients. Brief patient surveys can be conducted
in the waiting room before or after the clinic visit. Studies can be designed to occur at traditional periods of low volume (e.g., springtime or early summer).

- Some data collection in continuity clinic is mandated by the Resident Review Committee (RRC). This can serve as an incentive to improve data collection and tracking systems. In turn, efforts to improve data collection have the potential to enhance educational research.

- Resident experience in the continuity clinic setting should provide insight into what they can expect to encounter if they pursue a career in community pediatric practice: an appreciation for practicing preventive care medicine; addressing patient/parent teaching/education; overcoming communication barriers; appreciation of family dynamics; telephone management; anticipatory counseling; health screening; chronic illness management; ambulatory record keeping; role as gate keeper. (Limitations to academic clinic site research are significant: resident behavior/attitudes in post-residency pediatric practice may be considerably different from that observed during residency training).

XI. Barriers to medical education research in the academic continuity clinic setting

- The number of residents in training programs vary across the country, some relatively small, others large. For those doing educational studies involving a limited number of residents, the results of what appear to be a successful interventional study actually may prove to have only minimal statistical significance. To overcome this problem, initial attention should be devoted to a careful study design and the projection of statistical outcome results. Collaborative studies with continuity clinic faculty at other institutions may help to increase the sample size and ultimately enhance the power and significance of the outcome data. Methods can be employed to measure statistically significant change in individuals (pre-post differences) as well as change in groups of residents.

- Residents in continuity clinics are in three different levels of training. When accounting for the effects of an intervention involving resident knowledge, attitudes, or skills, researchers must consider the innate deficiencies and attributes of these individuals at their stage of training. For example, a new method of charting may be well received by PL-1 level residents generally receptive to new approaches to patient care, but be less appealing to those in their third year of training. Alternatively, a program addressing practice management may be attractive to a PL-3 resident, but of no interest to a first year resident unfamiliar with and lacking enthusiasm for this additional knowledge. As a solution to this problem, study design must take into account the training level of the resident.
Fixed, stable, continuity clinic teams, consisting of a preceptor, several residents, and their individual patients are at an advantage for providing optimal medical care and teaching. When designing a medical education study, however this team approach can be a disadvantage. Because team members tend to have considerable interaction, it becomes difficult to introduce an educational intervention for some members of the team, but not for others. A potential solution would be to have different half-day teams functioning as intervention and control groups.

A number of potential and unpredictable factors could impact study design and longitudinal results. Funding cuts, faculty reassignments and moves, managed-care contracts, etc. all could have an adverse effect. Studies of brief duration could minimize the impact of any these problems, but fail to measure a sustained effect of the intervention over time. One solution could be to introduce interventional change in a step-by-step manner, using some of the continuity clinic teams as controls.

Some residents may be so "invested" in the care and management of their patients, they become reticent to becoming involved in an educational research project. Designing a less intrusive and potentially disruptive study should be considered. Obtaining some or most of the study data using existing source materials such as the clinic computer system or information gleaned from patient/parent surveys may help to address the problem.
XII. RESOURCE OPTIONS FOR EDUCATIONAL RESEARCH

Local Resources

- A valuable resource is someone trained in medical education research. Schools with offices of medical education may have more than one individual with the essential qualifications. The Office of the Dean may have someone employed with a background in medical education. For those medical schools affiliated with a university, contact with someone in the Education Department may be beneficial. The disadvantage of the latter is that there may not be anyone there familiar the practical realities of attempting research in a busy clinical setting.

- Faculty in other departments or at nearby institutions may have a mutual interest in clinical research. Those individuals may include faculty in general internal medicine, family medicine, psychology, and/or nursing.

- Regional Academic Pediatric Association (APA). Regional meetings of the APA often include presentations relevant to medical education research. Attendance at these meetings presents an opportunity to meet and network with others, especially those with similar interests.

- Divisional (or other small group) research seminars such as resident research forums can be helpful. In some departments, there are regular small group (e.g., Division of General Pediatrics) seminars. These meetings are forums for faculty members and/or residents to present research proposals and data with the purpose of sharing ideas and soliciting/obtaining supportive feedback. Presentations may include research efforts in all stages of development, allowing investigators to receive helpful suggestions even during the earliest phases of research design and hypothesis.

National Resources

- Academic Pediatric Association (APA). The APA Education Committee includes a number of experienced clinicians, who have done research in medical education. The APA Educational Scholars Program is another excellent resource. The mission of that program is to assist pediatric educators in developing themselves as productive, academically advancing, and fulfilled faculty members and to increase the quality, status and visibility of pediatric educators in academia.  
  http://www.academicpeds.org/education/education_scholars_program.cfm

- The journal *Academic Medicine*. This journal contains the single largest collection of medical education research articles. It is an excellent source for guidelines referable to medical education and should be strongly considered as the journal to which any paper devoted to medical education is submitted.
• RIME (Research in Medical Education) Conference. This annual conference is sponsored by the Association of American Medical Colleges (AAMC) and is held in conjunction with the annual AAMC meeting.

• Association of American Medical Colleges (AAMC). This organization is the professional organization for all medical schools, hospitals, and specialty societies involved in medical student education. It publishes Academic Medicine, presents the RIME conference, and offers a mentoring system in educational research. The AAMC also supports MedEdPORTAL, an online database of peer-reviewed submissions devoted to educational innovations (www.mededportal.org).

ADDRESS: AAMC
2450 N Street, NW
Washington, D.C. 20037
www.aamc.org
PHONE: 202-828-0400

• Society for Behavioral Medicine in Medical Education. This organization has a national meeting as well as a relatively new journal - Annals of Behavioral Science and Medical Education.

• American Educational Research Association - Division 1. This organization represents educators from all the professions; among these, medical educators are the largest group. This resource can help to identify medical educators in specific regions of the country - www.aera.net.
XIII. SELECTED BIBLIOGRAPHY OF EDUCATIONAL RESEARCH STUDIES DONE IN A CONTINUITY CLINIC OR GENERAL AMBULATORY PEDIATRIC CLINIC:


Dumont-Driscoll M, Barbian L, Pollack B. Pediatric residents' continuity clinic: how are we really doing? Pediatrics.


Wolraich M, Albanese M, Reiter-Thayer S, Barratt W. Teaching pediatric residents to provide emotion-laden information. Journal of Medical Education. 1987;62:470-476.


XIV. PEDIATRIC AMBULATORY PRACTICE-BASED RESEARCH NETWORKS

CORNET (The COntinuity Research NETwork)

CORNET [a Practice-Based Research Network of the Academic Pediatric Association (APA)], http://www.ambpeds.org/site/research/research_cornet.htm, has evolved from the Academic Pediatric Association (APA) Continuity Special Interest Group (SIG) and has been endorsed by the APA. The CORNET mission is to establish a self-sustaining collaborative research network among pediatric continuity clinic clinicians that will produce quality research in primary care, health care delivery, and medical education. Findings will be disseminated in order to improve the health care of underserved populations and the training of future pediatricians.

Research Goals:
- To examine health care disparities of minority and underserved children
- To study resident education
- To compare practice behavior between residents in their continuity practices and pediatricians in their practice settings
- To increase resident exposure to and involvement in primary care research

Current membership (as of 2010) includes 92 pediatric training programs (42% of all training programs) and 110 continuity practice sites.

The infrastructure of the CORNET network consists of a Steering Committee, Executive Committee, Regional Research Chairs, Institutional Coordinators, and Regional Practices.

Regional Institutions/Practices

Institutions with accredited pediatric residency training programs (those offering a residency continuity ambulatory experience as required by the ACGME) are recruited on an ongoing basis to join CORNET. Any practice site, affiliated with the academic institution, is eligible to participate provided that the institutional coordinator is an APA member in good standing and at least one resident is assigned to that practice site for their ambulatory pediatrics continuity experience. A site coordinator needs to be identified for each clinical site (training programs may have multiple eligible sites). There may be one representative for all of the sites or a designated representative for each site. Practices will be assigned according to their APA designated geographical regions (with the exception of the Uniformed Services practices which will be designated as belonging to Region XI). Our goal is to recruit a diverse set of practices with representation from all APA regions. Regional practices may be invited to participate in specific CORNET research projects based on the suitability of their patient population. Members from regional practices are invited and encouraged to develop protocols for network study consideration. Each institution and affiliated practice site completes an enrollment form when joining CORNET. Subsequently, the site is added to the CORNET email listserv.
CORNET Research Priority Areas include:

- Obesity
- Oral Health
- Quality Improvement
- Physical Activity
- Mental Health
- Resident Education in Continuity Experiences/Competencies

**Idea/Proposal Submission Process**

The CORNET Steering Committee will be responsible for reviewing research submissions from any of the investigators within CORNET, from those investigators outside the CORNET network, and those from outside agencies. Initial research ideas should be discussed with a member of the Steering Committee prior to submission. If deemed to be of interest to the network, a first submission will be requested in the form of an abstract (2-3 pages). It should include:

- Background information
- Objectives and/or study question
- Study design
- Methods
- Proposed analysis
- Sample size calculation
- Significance of the study

The submission will be reviewed by members of the Steering Committee with consideration to the following criteria:

- Importance of the study question
- Relevance to question within the framework of primary care
- Appropriate fit with one or more of the three research goals of the CORNET network
- Practical study for accomplishment in a continuity practice setting
- Feasible methodology, funding opportunities, and ethical considerations
- Appropriate study for a large, national, research network

Once Steering Committee feedback (including questions) is collated and approval granted to proceed to the next step, a full proposal (approximately 5-10 pages) will be requested. This proposal should be similar in content to that required for Institutional Review Board approval. The proposal should describe the project in greater depth, while also addressing questions posed by the Steering Committee. This research protocol will be distributed to the full Executive Committee, reviewed, discussed, and voted upon. The process was established to ensure that only high quality research projects are accepted for study by the network.

If the Executive Committee votes in favor of the project, the principal investigator (PI) will assume responsibility for obtaining grant support. Assistance will be provided by members of the
Steering Committee. The Network Director and Coordinator will be involved with every study. At least one Executive Committee member, with interest in the topic, will work closely with the PI regarding study design and implementation. Once funding is secured, an email announcement from CORNET will be sent out soliciting interested practices sites to apply for study participation. Practice participation will be based on specific practice-site demographics.

An IRB proposal will be developed as a template suitable for distribution to all participating practices. It is anticipated that all of the academic sites will be required to obtain IRB approval from their respective institutions. The Network Director and Coordinator will assist in fielding questions, with input from the PI and Steering Committee. The PI is assured first authorship on at least one publication. In general, at least one member of the Executive Committee will commit to each project and serve as co-investigators. Provided that they meet authorship criteria, they will serve as co-authors on the publications. If the study results in more than one publication, the subsequent order of authorship will be negotiated based on the level of involvement. Upon completion of data analysis, site-specific results, with comparisons to the entire study group, will be disseminated to individual practices.

Site co-investigators are responsible for conducting the research protocol at their continuity site. They are responsible for getting endorsement for their project from those staff members who will be involved, serving as a champion for their site, and submitting the IRB proposal. Copies of the IRB approval will need to be faxed to the Network Coordinator. Site co-investigators also will ensure implementation of the study design and intervention, if relevant, and will make certain that consents are obtained, data collected, and research integrity upheld at their site. Each Site co-investigator will determine staff member involvement. Those individuals will need to complete HIPAA training and individual institutional requirements for conducting research. At a minimum, each site co-investigator will be included in the manuscript list of acknowledgements.

**PROS (Pediatric Research in Office Settings)**

PROS, established in 1986, is a practice-based research network of the American Academy of Pediatrics (AAP) - [www.aap.org/pros/](http://www.aap.org/pros/)

As of March 2008, PROS consisted of 1,800 pediatric practitioners from 720 practices in 50 states, as well as Puerto Rico and Canada. PROS study site personnel are teamed with a research staff member at AAP headquarters in Elk Grove Village, IL as well as research consultants from around the country. The network has enjoyed remarkably steady growth since its inception.

PROS practitioners and researchers work together to generate research questions, design study materials and protocols, obtain research funding, collect study data, analyze collected data, and publish results. This collaboration is achieved with the cooperation of AAP chapter-based groups of practitioners. The list of these individuals is maintained by pediatrician chapter coordinators, who in turn meet twice a year with PROS research staff and consultants.
The mission of PROS is to improve the health of children and to enhance the practice of primary care pediatrics by conducting national collaborative practice-based research.

**Incentives to participation in a research network**

**General**
- Involvement in research that is practical, relevant, and important to the practice site
- Opportunity to participate in clinical research
- Participation in a process that is often larger than the sum of its parts
- Development of camaraderie among practice sites
- Networking with colleagues
- Knowing that many areas of the country have regional practice-based research networks
- Ability of the clinician to attend national meetings
- Regional and national recognition
- Press releases to local media highlighting practitioner’s involvement

**Academic**
- Part-time faculty appointment to affiliated academic institution
- Ladder of leadership with opportunities available to become more involved
- National and regional recognition potentially leading to promotion
- Experience in research participation
- Great entry point for new investigators

**Practice site**
- Individual feedback to the practice concerning study results (potential for Quality Improvement)
- Regular meetings at the practice site to enhance communication between nursing, administrators, and practitioners
- Grant support to reimburse staff for administrative help with the study or to purchase items specific to the practice (refrigerator, microwave, fax machine, etc.)

**Patients**
- Many patients enjoy participating in studies. They request updates as to study results.
- Parents may have enhanced satisfaction in receiving care from a practice actively involved in relevant research
- Office plaque (visible to patients/parents) indicating site participation in national research projects
- Small monetary incentives to patients: money, coupons or vouchers
- Benefits of Patient Advisory Boards to demonstrate participatory research
XV. GENERAL RESOURCES

Some of the main barriers to participating in clinical research include: insufficient time, no experience in study design, and no funding to support a study. Resources to help those interested in clinical research:

- Potential collaborators
- Assistance with research design
- Faculty development in research training
- Databases
- Funding sources

Potential Collaborators

Reasons to seek a collaborator: 1) someone with more research experience to help with study design; 2) an individual with more medical expertise in a particular area of study interest, e.g., an infectious disease collaborator if doing immunization research or a renal specialist if the area of interest is hypertension; 3) someone well known in a specific area, who can help in the development of the study question and can be instrumental in making your grant proposal more competitive.

A collaborator may be a fellow, resident, or medical student. In this capacity, the person pursuing the research may be serving as a mentor and may in turn need to provide teaching in regard to the research process. It may become necessary to seek collaboration from individuals in other departments/divisions interested in the same research questions.

WHO?
*Faculty
*Fellows
*Residents
*Medical students
*Nursing staff
*Graduate students
*Undergraduate students
*Social workers
*Health educators
*Psychologists
*Sociologists

WHERE?
*Within/Outside the Division
*Within/Outside the Department
*Within/Outside the School of Medicine
*Within/Outside the University
*School of Public Health
**Assistance with Research Design**

Possibilities for assistance include:

- Research Administration
- Statistician
- Epidemiologist
- Methodologist - Instrument construction
- Behavioral Scientist
- Medical Educator
- General Educator
- Individuals with formal education in research design

**Faculty Development in Research Training**

1. Fellowships specifically designed to enhance training in clinical research.

- General Academic Pediatric Fellowship
- Master’s in Clinical Research
- Master’s in Education
- Master’s in Public Health
- Robert Wood Johnson Clinical Scholars Program

These opportunities require a substantial time commitment, often 2-3 years.

2. Classes specific to methodology, research design, questionnaire construction, etc.

- School of Public Health
- Colleges
- Medical Schools
- Online certificate programs

These classes are usually conducted over a quarter or a semester time period. It may be worth negotiating with the department chairman or division head as to the potential benefits of taking any of these courses. Some institutions offer intensive courses in methodology or epidemiology conducted over a 1-3 week period. Examples include:

* Epidemiology & Biostatistics - 1 to 2 week courses at the New England Epidemiology Institute
* Graduate Summer Program in Epidemiology - 1 and 3 week courses at the
3. Conferences/Workshops

- Academic Pediatric Association (APA) National Meeting/Pediatric Academic Societies (PAS) Meeting
  - "Ask the Experts" session
  - Research topic specific workshops
- Regional Society for Pediatric Research
- Regional APA meetings
- Research in Medical Education (RIME) Conference at AAMC National Meeting
- Society for Behavioral Medicine in Medical Education
- Society for Behavioral Research
- Society for Pediatric Epidemiologic Research

These sessions, among others, offer information with a fairly manageable time commitment. In some instances, like the session at the national Pediatric Academic Societies (PAS) Meeting entitled "Ask the Experts," an individual can ask for a review a particular research question or study protocol and receive feedback. Other workshops encourage discussion of research ideas and problem solving. Regional Academic Pediatric Association (APA) meetings may afford the opportunity to discuss research in progress and receive feedback regarding ideas for research.

4. Texts

Excellent for those self-motivated. Texts can lay the groundwork for research and serve as excellent resources at a later time. See the General Resources Bibliography.

5. Journals

- Academic Pediatrics
- Academic Medicine
- Journal of American Medical Association
- Canadian Medical Journal

These journals often have "how to" articles and excellent discussions concerning reading journal articles and study critique.
**Databases**

Databases provide an opportunity to answer questions without spending the time or energy collecting the data. These may be available locally (own institution, city, state) or nationally. Possibilities include:

- Hospital billing system
- Hospital registration system
- Medical assistance data
- Birth certificates
- WIC
- State or City Health Department immunization records
- School District Databases
- Health Department Databases
- National Center for Health Statistics
  1) Child Health Survey Database
  2) Health and Nutrition Examination Survey Database

**Funding Sources**

Alas, the financial aspect of research always rears its head. The amount of funding required is dependent on the type and complexity of the study to be conducted. Initially, one can pursue a small pilot study, with no funding support, necessitating only data tracking or chart review. This may prove to be helpful in gathering pilot data necessary for grant application and to acquire some degree of recognition as a clinical researcher. Although funding is available through federal sources, such as the NIH, the grants are highly competitive. There may be other funding resources available, especially locally.

1. Federal Funding Sources

- Agency for Healthcare Research and Quality (AHRQ)
- National Institutes of Health (NIH)
- Centers for Disease Control (CDC)
- Health Resources and Services Administration (HRSA)
- Maternal and Child Health (MCH)
- Indian Health Service (IHS)
- Office of Population Affairs

Types of Research Grants in Federally Funded Research
• Research Project Grants (RO1): award to an institution on behalf of a principal investigator for a discrete project.

• Program Projects Grant (PO1): awarded to an institution on behalf of a principal investigator for a broadly based, often multidisciplinary long term research program with a major theme.

• First Independent Research Support and Transition (FIRST, R29) Award: to encourage clinicians with 3-7 years of postdoctoral experience and a commitment to research to develop research capacity in specific areas designated by the NIH by providing 3-5 years of salary and research support.

• Small Grant Awards: provide research support for activities such as pilot projects, testing of new techniques or feasibility studies of innovative or high-risk research.

• Research Career Program Awards: several types of awards to research and academic institutions for scientists with clear research potential, but who require additional training and experience in a productive scientific environment in preparing for health science careers. e.g.: Clinical Investigator and Physician Scientist Awards.

• Center Grants (P30, P50, P60): Awarded to institutions on behalf of a program director and a group of collaborating investigators to provide support for multidisciplinary long-term programs of research and development.

These grants are extremely competitive. To be considered for funding, a team of skilled and well-known researchers are needed to present a well-planned project. Since the amount of funding awarded may be substantial, the PI and collaborators usually need an established track record. This is generally the type of funding applied for after an individual completes several successful projects. Becoming competitive for these grants demonstrates the importance of an individual’s research agenda and his/her recognition as a well respected expert in the field.

2. Foundations

National
• Robert Wood Johnson Foundation
• Rockefeller Foundation
• Carnegie Foundation
• Ford Foundation
• W.T. Grant Foundation
• Pew Foundation
Special Interest

March of Dimes
- Shriner’s

Corporations
- McDonald’s
- Hasbro Children's Foundations
- Mattel Foundation

Community
- Kiwanis
- Junior League
- Community Organizations
- Public charities deriving funds from public support and directing grants to their community

The above foundations will fund both solicited and unsolicited proposals. Be aware of announcements either nationally or locally. It may be beneficial to approach the organization directly with a research idea. In these cases, the researcher submits a letter describing the proposed research project. The foundation staff reviews the proposal, determining if there is interest. If acceptable the staff member makes a funding recommendation to the Board of Directors, who in turn make the final determination.

3. Institutional Funds

- Institutional grants
- Small grants for pilot projects
- Clinical Research Unit
- New Investigator Award
- Interim and emergency support of ongoing research projects
- Children’s hospital foundation grant

Institutional funds will vary among different institutions. The money provided generally is for initial funding of projects when an individual is in the early stages of their research career.
4. Professional Societies

- APA Young Investigator Awards
  
  http://www.academicpeds.org/research/research_young_investegator_awards.cfm
- Society for Behavioral Research

5. Drug and Device Industry

Specific pharmaceutical companies may fund studies related to antibiotic use, medications or vaccine trials. Companies tend to develop working relationships with outside investigators on an individual basis. They may be approachable, if someone was interested in participating in a research study involving one of their products.

**Identifying sources of funding**

1. Institutional Office of Research Administration. Provides considerable reference material.
   - Annual Register of Grant Support
   - Catalog of Federal Domestic Assistance
   - Commerce Business Daily
   - Federal Register
   - NIH Guide

2. Grants.gov. Can register to receive grant announcements?

3. The literature. Who funded the studies you find interesting?

4. Hospital Department of Development Office, Grants Office or Research Department.

These sources have access to many references. They may have inside information on a foundation that's "just right." They can often serve as gatekeepers for institutional requests to specific foundations.

5. Colleagues, peers and mentors. Ask around to others in the same field of study to see if there are additional sources they have previously identified.
XVI. SELECTED BIBLIOGRAPHY OF GENERAL RESOURCES


Primary Care Research: An Agenda for the 90's. Publication # (PHS) 90-3460, Public Health Service.
INTRODUCTION

Coordinating faculty development for your preceptors can be among the most rewarding aspects of your task as continuity clinic director. It provides you an opportunity to reflect on the needs of your preceptors and to create educational experiences to address those needs. Most faculty – whether university, hospital or community-based – come away from faculty development sessions with an enhanced morale and renewed enthusiasm for their job.

As facilitator and planner, you too can experience a sense of enthusiasm and pride. The time and effort you devote to the task will be greatly appreciated and well recognized by your faculty colleagues.

This chapter will address a number of considerations in the creation of a faculty development program: 1) needs assessment; 2) resource assessment; 3) potential venues; 4) mentoring; 5) specific issues relevant to academic faculty and/or community-based faculty; 6) feedback and evaluation; 7) burnout prevention; 8) a bibliography of faculty development resources.

NEEDS ASSESSMENT

The first step in planning for a faculty development program is the creation of a thorough needs assessment. First, faculty members should consider a broad assessment of their own needs. Adult learning theory dictates that individual faculty learn best when educational efforts are directed to areas of relevance and important to them.

Although conducting a needs assessment is a first step, it must be repeated on a regular basis (possibly yearly) to assure that the faculty development activities continue to be helpful as well as timely. Faculty input however must be placed in proper perspective. There may be important divisional or departmental goals faculty members fail to identify, which in turn necessitate integration into the overall faculty development plan. As an example, faculty members may not include “providing feedback” as high a high priority issue. On the other hand, residents, program directors, and department chairpersons may have communicated to you that your preceptors could use some improvement in their feedback skills. As a result, you may decide that a session on giving feedback is in order.
The list of areas and subjects for inclusion in faculty development can be extensive:

**Educational topics:**
- Teaching in the clinical setting (Five Minute Preceptor, etc.)
- Giving lectures
- Facilitating small group discussions
- Case-based teaching
- Learning styles
- Coping with challenging learners
- Giving feedback (the Ask-Tell-Ask Model)
- Providing difficult feedback

**Research topics:**
- Survey design
- Writing abstracts
- Moving from abstracts to manuscripts
- Medical education research
- Working with statisticians and epidemiologists
- Grant-writing
- Qualitative research methods
- Peer review
- Preparing good presentations

**Update on clinical topics:**
- Influenza update
- Oral health
- Obesity
- Etc.

**RRC issues:**
- Updates on competencies

**General topics:**
- Work-life balance
- Time management
- Leadership skills
- Practice management
- Billing
- Quality improvement

**Advocacy/Systems-based Practice topics:**
- Legislative work – federal, state, local
- Resident training experiences

**Evidence-based medicine topics:**
- Performing literature searches
- Evaluating articles on diagnosis
- Evaluating articles on prognosis
- Evaluating articles on prevention
- Evaluating articles on treatment
- Evaluating meta-analyses
- Assessing Practice Guidelines

**Academic Promotion:**
- Educational portfolios
- The promotion process

**Teaching in a Community Setting:**
- Strategies to teach effectively in a busy private or clinic practice
- Business administration
- Medical billing/managed care

**RESOURCES ASSESSMENT**

Once faculty have had a chance to respond to the needs request, potential resources in support of the various efforts should be identified and selected. It is important to remember that your responsibility is not to be the sole teacher of your preceptors. Instead, consider yourself as the coordinator or facilitator of faculty development efforts.

Fortunately, there is a number of resources available to continuity clinic directors. One of the most important of these is the preceptors themselves. Continuity clinic directors should seek out among the teaching faculty those with particular expertise. This provides an opportunity for certain select individuals to learn more about a subject in which they have a particular interest and in turn to teach that information to their peers.
Many continuity clinic directors fail to utilize local resources beyond those in the preceptor group. Consider bringing in pediatric specialists, as well as physicians and other healthcare professionals outside the field of pediatrics: family practitioners, internists, psychologists and psychiatrists, nutritionists, audiologists, dentists, etc. In addition, consider using resources outside the medical school, both within the university (at the library, at schools of education and public health, etc) and within the community at large (legislative contacts, community-based organizations providing service to children, etc.) Nationally, several universities have course offerings in a variety of faculty development topics. Online, there is some high quality curricula and modules available. Nationally, organizations, such as the APA, have workshops designed to address many of the academic issues/skills listed above.

VENUES

There are a number of possible forums to convene a faculty development workshop. Regularly scheduled ambulatory faculty meetings provide a captive audience, but generally are time limited. Many departments allow for less frequent special faculty development sessions when the patient load is light. This has the potential of opening up a larger block of time and allowing for a less distracted audience. However, the issue of coverage for those patients who do need to be seen has to be considered. Sometimes, it is worth the time, effort, and expense of paying for a space, physically separate from the continuity clinic site. The offsite venue can provide a different, less distracted, frame of mind for participants. Some community-based continuity clinic sites use teleconferencing to save the time and expense of travel. Utilization of a mentoring network is another option. (See section below)

MENTORING

Many faculty development needs cannot be adequately addressed within group faculty development seminars. Providing a solid mentoring program can help to fill in these gaps. In the case of professional or academic promotion, the mentoring process allows for individual attention related to career networking and career counseling. Mentorship can be especially important for groups, including minorities, often under-represented in the field of medicine. Mentoring also can be important for women in medicine, often coping with the desire to attain under represented leadership positions and facing the ever-ticking academic clock in conflict with the responsibilities of child-rearing and essential leave-time.

Though continuity directors should endeavor to provide their preceptors with appropriate mentorship, they should not neglect their own needs! All significant leadership positions have the potential of creating a sense of isolation. It is critical therefore for you to establish personal mentor contacts both from within and outside one’s institution.
ISSUES SPECIFIC TO ACADEMIC FACULTY

Among the most important concerns for academic faculty is that of academic promotion. Many continuity clinic preceptors are on clinician-educator tracks. For them, negotiating the process of academic promotion may be particularly difficult. When it comes to appropriately documenting required information in an educational portfolio, they may need help with entering their time and activities. They need to recognize that among the most important requirements is to have a national reputation deserving of academic promotion. As a continuity clinic director, you are in a good position to provide the needed assistance.

Continuity clinic directors need to work closely with division directors (if they are not already one in-the-same), to ensure that faculty continuity preceptors realize that there are set expectations for their performance.

To achieve recognition for the continuity clinic faculty within the pediatric department, the director needs to communicate to the chairperson the essential contributions made to the department by these individuals. To support the need for institutional resources directed to the continuity clinic itself and/or the faculty preceptors, the director should generate data documenting the important role the section plays in patient care (e.g., patient volume, types of patients seen, level of severity, age groups served, and revenue generated).

Focus should be directed on the importance of the remarkable amount of sound clinical teaching provided by the faculty at all levels of training, for both residents and students. It should be emphasized that these preceptors function as excellent role models. In addition the director should provide a list of publications generated by the section, awards granted (financial), and awards presented (recognition).

Preceptors should be encouraged to develop and expand their overall role in the training program. An effort should be made by them to become involved in teaching within other sections of the department, e.g. neonatology, emergency medicine, and/or the inpatient teaching service. Preceptors should consider volunteering to serve as spokespersons for the Public Affairs Department of the hospital or the medical school. In addition, to enhance their recognition, preceptors should become acquainted with hospital board members. This may occasionally result in providing consultation for or direct care of the children or grandchildren of the board member.

To expand their sphere of achievement and recognition within the department, members of the continuity faculty should consider developing a clinical research project, especially one involving residents. In many programs, the continuity clinic has become the primary site for a managed care practice, an important financial resource for the department. To
expose the department chairperson to activities of the continuity program, consideration should be given to extending an invitation to him/her to function as a guest clinic preceptor. Recognition by the chairman that the continuity program is a valuable asset to the overall training program may reap significant benefits, e.g. additional clinic space and support staff, increased autonomy, academic advancement, and/or financial support.

**ISSUES SPECIFIC TO COMMUNITY-BASED FACULTY**

The goal of an effective faculty development program for community pediatricians is to help community educators’ transition from their primary role of clinician to that of a practitioner-preceptor-educator.

In general, most practitioners are eager to improve their teaching skills. However, because of limited flexibility in their schedules, careful attention should be paid to the timing and venue of conducting such faculty development sessions. Find out what the practitioners require as compensation for their participation (e.g. CME credits, reimbursement for lost clinical income, academic titles, etc.). In regard to overall Practice Management Issues, see Chapter 3.

Though being asked to serve as a community continuity preceptor in itself is often considered significant recognition for many practitioners, more specific expressions of gratitude from the department should be entertained. Periodic letters of gratitude are helpful, but other tokens of appreciation to consider might include a desktop clock or plexiglass statuette, a wall plaque after a specific number of years of service, a gift certificate, or decreased registration fee for a CME activity.

**FEEDBACK AND EVALUATION REGARDING A FACULTY DEVELOPMENT PROGRAM**

After any particular faculty development session, obtain immediate feedback from participants. This not only provides needed information regarding which sessions were the most effective, but also provides helpful input/suggestions as to how to enhance/improve those sessions that were not as well received. For large (half-day or full-day sessions) provide preprinted evaluation forms seeking comment regarding the presenters’ delivery, the subject matter, the venue, the time allocation, and any suggested subjects/content for future faculty development sessions/workshops.
PREVENTING BURNOUT/MANAGING STRESS

In a survey of academic pediatricians in all specialties from randomly selected medical schools (Barton 1995), almost one-half of the respondents reported high or very high levels of stress. Many had considered changing their departmental roles or leaving their positions. Stress was related to: female gender, pressure to do research, lack of personal time, administrative responsibilities, patient load, and the financial needs of the department. Teaching generally was a source of satisfaction. Being valued by other members of their section or division and by their chairperson was important.

These findings clearly relate as well to those experienced by Continuity Directors. To ease these perceived stresses and strains, a number of approaches should be taken into consideration. Among them, individuals should begin with changes in their daily activity schedule. Approaches to consider:

**DAILY ACTIVITY SCHEDULE**
- Create a job description that best fits your needs, while at the same time responding to the needs of your department.
- Delegate certain job responsibilities, e.g., changes to personnel scheduling.
- Assume responsibility for tasks that provide personal and professional satisfaction (maintains your own panel of patients; insist on protected time; develop personal projects). Protected time should be considered time to do academic and scholarly work, not just your yet-to-be-completed paperwork.
- Learn to prioritize.
- Make an effort to limit take home work.
- Take your allotted vacation time.
- Learn to say “no” to requests for additional responsibilities.
- Develop a personal 3-year plan of professional goals.

**MAKE CHANGES IN CLINIC POLICY**
- Consider limiting the options for and frequency of faculty/resident schedule changes, e.g., to the beginning of the year or only at the mid-way point. Some degree of flexibility however may be needed.
- Make residents responsible for their patients’ paperwork, school forms, etc.
- Create a support system so that the burden of clinic operations is not your responsibility alone.
- Create an Advisory Panel inclusive of residents and clinic staff. This can function as an outlet for resident feedback and problem-solving. Emphasis should be on ideal patient care and smooth resident transition.
- Advocate for the continuity clinic/practice; emphasize the importance of RRC guidelines regarding accreditation requirements with the focus on a primary care experience.
- Empower nurses and other staff by assigning specific responsibilities for optimal clinic flow. Make certain that the residents learn the names of the staff and show respect.
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Career Development for Academic Faculty


COMSEP (Council on Medical Student Education in Pediatrics) has an information Clearinghouse at the University of California at Irvine, run by Dr. Jennifer Johnson. Telephone: (714) 456-6155.


The Society of Teachers of Family Medicine Publications List can be obtained by writing: STFM; P.O. Box 8729, Kansas City, Missouri 64114; (816) 333-9700

The Center for Ambulatory Teaching Excellence of the Department of Family and Community Medicine at the Medical College of Wisconsin offers materials on The Educator’s Portfolio including a wire bound edition and a software template. The Center for Ambulatory Teaching Excellence; 8701 Watertown Plank Road; Milwaukee, Wisconsin 53226. Telephone: (414)778-4231. Fax: (414) 257-4039.

Mentorship


**Teaching Skills**

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The American Academy on Physician and Patient is a non-profit institution committed to the promotion of teaching and research in medical interviewing and related clinical skills. They offer workshops on teaching and research activities. The contact person is Elaine Abramoff, P.O. Box 725, Woodstock, NY 12498. E-mail: aapp9@aol.com.

Bar-On, Miriam. Curriculum for “hands-on-discovery”. She is at the Children’s Medical Center, Richmond, Virginia. E-mail: mbaron@gems.vcu.edu.

The Department of Family and Community Medicine at the Medical College of Wisconsin offers an instructional videotape, “Improving clinical teaching through standardized ambulatory teaching situations” and a case workbook “Standardized teaching situations”. The Center for Ambulatory Teaching Excellence; 8701 Watertown Plank Road; Milwaukee, Wisconsin 53226. Telephone: (414)778-4231. Fax: (414) 257-4039.


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**Faculty Development for Community Pediatricians**


**Prevention of Burnout and Managing Stress**


**Planning for Faculty Development**


DaRosa DA and Simpson D (co-lead authors); Marcdante KW and Fleming VM (co-authors). Faculty Development (chapter 8) in Guidebook for Clerkship Directors – 3rd edition. Alliance for Clinical Education, 2005. *(As of November 2010, printed version no longer available – see Google Search – Guidebook for Clerkship Directors – 3rd edition)*
INTRODUCTION

This chapter provides a brief overview of potential financial resource support for the day-to-day operation of continuity clinics within hospital and/or academic settings. Traditional resources generally include a combination of revenue generated from patient care, from intra- or extra-mural research, and from financial support provided by the respective pediatric department for each clinic. Financial support for clinic administrative personnel tends to come directly from either the pediatric department or from the hospital.

I. FUNDING OVERVIEW

A. Identifying the need

For the majority of academic continuity clinic directors, establishing and preserving a profit margin to help offset clinic operating expenses is difficult at best. The director's primary responsibility is to fulfill the educational and teaching mission of his/her department and to provide optimal primary healthcare for the pediatric patients enrolled in the clinic. Healthcare costs for the majority of these children frequently are covered by either the Medicaid or S-CHIPS program.

Adding to the director’s difficulty in achieving economic success for the clinic is the realization that a considerable number of the patients have extensive special healthcare needs. Unfortunately, the time and effort required to care for these children is not equitably compensated.

Continuity directors generally feel an obligation to optimize clinical revenue, and therefore make an effort to identify other potential sources of financial support. This may include the medical school, their department of pediatrics, and/or the main teaching hospital. Occasionally, a faculty private practice clinic is able to provide a degree of supplemental funding.

Academic department administrators as well as the Director of Ambulatory Operations for the hospital generally have a good understanding of clinic operating costs. It is essential for them to make certain that supplemental financial support is available.
B. Operational Expenses

Obtaining accurate and complete financial information regarding the full range of operational expenses and support for a continuity program is difficult. In part, this is attributable to the complexities of cost-accounting in medical schools, hospitals, clinics, and institutional systems. Operational expenses for a hospital-based clinic may be included within or along with other unrelated hospital costs (telephones, laundry, housekeeping, etc.). Continuity directors generally need to seek this information as it is frequently unavailable to them. When seeking such information, the director should ask for help, keeping in mind that retrieving it may be difficult. (Refer to Chapter 3 - Practice Management, particularly the section devoted to Budget/Business Functions within the Continuity Clinic.)

To gain an understanding of clinic expenses, it may be helpful to categorize them:

1. Clinic Operations - telephones, computers, lab costs, etc.
2. Teaching Activities – salaries for preceptors and clinical faculty; adequate exam room space; resources for learners (books, journals, online teaching material and educational programs; audiovisual equipment, etc.)
3. Administrative Support - front desk receptionists, nurses and nurse aide(s), medical assistants, insurance clerk(s) (especially someone familiar with Medicaid and SCHIPS contracts, etc.); ancillary support personnel to track and document resident activities relevant to RRC requirements.
4. Special Projects
5. Research Activities

To advocate for clinic needs, sound reasoning, a plan for long term sustainability, and adequate supporting data are needed.

II. FUNDING SOURCES

A. Clinical Revenue

Creating an efficient, revenue-generating patient care clinic, in the setting of obligate faculty responsibility to focus on educational efforts can be difficult.
revenue-generating patient care clinic, in the setting of obligate faculty responsibility to focus on educational efforts can be difficult. One would have to maintain an efficiently run clinic, with optimal patient volume, and appropriate coding documentation, billing, and collection information.

**Potential Barriers to Achieving Financial Success in the Continuity Clinic:**

Academic-based continuity clinic sites attract a large number of patients with complex healthcare issues and significant socioeconomic problems. These patients and their families’ encounter a number of challenges, not least of which is transportation access. Appointment scheduling and timely clinic arrival for these families often present a challenge.

Furthermore, pediatric residents have other service responsibilities beyond their continuity clinic patient care obligations. In general, they are scheduled for a single ½ day clinic session/week, and despite concerted efforts to be on time, they often encounter untoward delays. Mandatory restrictive work hours can prevent them from staying late. As a result, some of the more complex patient care problems need to be addressed by the faculty preceptor.

In-hospital continuity clinic sites frequently encounter inherent barriers to optimal outpatient clinic care. The clinics may have large patient volumes encumbering efficient and timely movement of patients. There may be a limited number of exam rooms to accommodate the number of patients being seen. Parking at the hospital may be difficult and/or inadequate. All of these factors in combination can lead to patient, staff, and physician frustration, and ultimately to diminished clinical revenue.

Even at the most optimally functioning academic-based continuity clinic site, it is difficult to generate sufficient income to cover faculty/staff salaries as well as clinic operating expenses. Despite these issues, continuity clinic faculty and staff should make an effort to ensure that documentation, coding, and billing are correct. The newest version of Bright Futures includes extensive support and information for coding in primary care settings. In addition, the American Academy of Pediatrics offers a subscription fee coding support newsletter that can be of help, particularly for directors without extensive coding knowledge. Support personnel should make certain that filing of medical bills and fee collection are achieved in a timely fashion.

Clinical revenue sources:

1. Specific insurance/Medicaid contracts designed to support clinical care for a variety of patients with/without special health-related problems
   a. Well child care for public health clinic patients
b. Children with special healthcare needs e.g., those with spina bifida, children of migrant workers, children with HIV/AIDS, homeless children, etc.
c. Daycare/school children with no primary care physician

2. Recruitment of new patients (assuming added revenue exceeds actual expenses)
   a. Patients with Medicaid insurance
   b. Children in foster care
   c. Newborn nursery referrals
   d. Children with special healthcare needs
   e. Pediatric patients with low risk profiles, belonging to managed care groups (e.g., children of hospital personnel)
   f. Grants or contracts from pharmaceutical companies interested in having faculty, house staff, and patients participate in clinical trials
   g. Participating in study trials involving, e.g., new vaccines or new vaccine administration protocols
   h. Drug treatment/management trials (e.g., for otitis media, streptococcal pharyngitis, asthma)

B. Support for Teaching

There are a limited number of funding sources for education projects. Title VII grants are designed for primary care training programs in pediatrics, family medicine, or internal medicine; faculty development projects are funded by the Department of Health and Human Services, Bureau of Health Professions.

These grants generally have substantial funding; competition for them, however, is significant. Unfortunately, the year-to-year availability of such funds is often unpredictable.

Institutional support specifically designated for teaching varies from program to program. The budget for teaching support is not always well-defined and covers a variety of different components in different cost centers e.g., salaries, resource materials, conference room space, audiovisual equipment. It is important to be aware of what items are covered within the budget and to identify the funding source for other equally important teaching needs. Generally, the best resource for understanding the funding process and learning how the system works is the continuity director's section head or division chief.

Potential sources for education support:

1. Projects funded by the dean's office (most often, these necessitate medical student involvement)
2. Projects in association with educators (inner-institutional, or in conjunction with those from nearby graduate schools)
3. Projects undertaken with graduate students, who have their own funding or salary support
4. Medical students or high school students on work-study programs funded by the medical school (the mentor designs a project, the student does the work)

C. Support for Administration

Adequate administrative, nursing, and paramedical support is critical to the function of a continuity clinic teaching program. Neither a profitable, let alone efficient, clinic can run adequately without key support personnel. As a primary care site, the continuity clinic has the potential to generate strong public relations between academia and the community. It functions as an excellent resource for subspecialty pediatric referral as well as adult service referral. Clinic quality assurance (QA) data reflecting patient care, and statistical revenue data, generated as a result of appropriate subspecialty referral, can favorably impact the continuity clinic image and its importance in pediatric health care.

When application is made for educational and research grants, it is essential that budgetary allocation for project administrative staff be included. In the event that faculty colleagues, other than those affiliated with the continuity clinic, are able to obtain grant support and be in need of the services of continuity clinic administrative personnel, financial compensation should be arranged.

D. Support for Research

Continuity clinic sites are ideal for conducting pilot projects and research studies. With the inception of the Continuity Clinic Research Network (CORNET), in recent years, an opportunity is possible for a large number of academic institutions to become involved in collaborative studies. To obtain an overview of funding issues for research missions, see Chapter 7 devoted to Research in Continuity Sites.

Intramural funding from academic institutions generally is made available for junior faculty, residents and fellows. Should there be need for continuity space, staff time and/or services by these individuals for their research studies, money should be budgeted accordingly.

III. GENERAL STRATEGIES FOR OBTAINING NON-CLINICAL FUNDING

A. Networking with colleagues is an important strategy to consider. Many pediatric departments have research faculty with extensive expertise in the preparation and submission of grant applications. If these faculty members happen to be preceptors in the same continuity clinic, their expertise should be
In addition, there may be mutual interest in a particular research project among fellow faculty in other departments of the medical school.

A collaborative effort to do research with colleagues from other institutions belonging to the same professional organizations (e.g., the American Academy of Pediatrics (AAP) and the Academic Pediatric Association (APA)) may help to identify funding sources. APA office staff may be of help in providing the names of other members with the expertise needed.

Individual APA committees, e.g., Education, Health Care Delivery, Public Policy, and Research, will have members with expertise in some aspect of funding. APA-net (e-mail distribution to APA members) is an excellent resource for learning about major federal funding sources. The APA currently offers small grants (up to $10,000 per year) to junior faculty for start-up projects.

B. When seeking outside funding, potential researchers should begin by contacting their university/medical school grants and contracts office. Those office staff personnel should be an excellent resource of information as to major national agencies and philanthropic groups, as well as local organizations interested in supporting clinical, educational or research activities.

Some institutions offer helpful introductory seminars about where to look for and how to apply for grants and contracts. Occasionally, information can be obtained regarding funded grants to other institutional faculty with interests similar to those of the continuity faculty member. The development office of a private hospital, successful in securing donations and other outside funds for special projects, can function as an additional resource.

When applying for funds, some organizations and agencies require a letter of intent that briefly describes the area of interest, rationale for seeking funds, and goal(s) sought. Should that stimulate sufficient interest, a request for detailed completion of a full application will follow.

Occasionally, organizations and agencies solicit applications from academic faculty for specific contract work. In general, this comes in the form of a request for proposals (RFP). To timely prepare applications, it is extremely helpful to get information well in advance regarding grant cycles, deadlines and RFP's.

C. Consider outside funding from local community agencies, foundations, and philanthropic groups. Grant applications required by local organizations generally are less tedious to complete and less competitive than those of national agencies. Local March of Dimes, American Lung Association, city/county health departments, etc. may be willing to provide support for special projects.

Gathering essential clinic-related and faculty-related information and data before seeking support from the individual section, department, medical school, or
hospital facility will lend strength to any request. Academic generalists frequently devote a considerable amount of time to teaching and committee service work, for which little recognition or credit accrues. Specific data regarding this otherwise uncompensated time and effort along with other pertinent information should be included in the negotiation process for additional support.

D. Drawback to Extramural Support - Extramural funding agencies often provide only start-up financial support. Their intent is not to fund an entire research project, but to encourage the researcher to obtain sustainable funding from other resources. For this reason, it is important to engage departmental and hospital administrative personnel in the preliminary discussions and applications for funding.

The Continuity Clinic experience plays an integral part in pediatric residency training. Because of its prominent role in resident education, the continuity experience is carefully reviewed during each Residency Review Committee (RRC) site visit. Continuity Clinic directors should prepare themselves and their site by becoming knowledgeable about the current RRC program requirements. The RRC is an arm of the Accreditation Council for Graduate Medical Education (ACGME). RRC program requirements are accessible online at the ACGME website (www.acgme.org).

I. Understanding RRC Program Requirements for the Continuity Experience

There are specific requirements for the Continuity Experience, clearly outlined in the “ACGME Program Requirements for Graduate Medical Education in Pediatrics.” The continuity director should become familiar with the current program requirements and ensure that fellow faculty and residents are also made aware of these. It is best to check every 3-6 months for the most up to date version.

When reviewing the program requirements, it is important to understand the meaning of the following key words:

- **Must** → used when a requirement is absolute. Your program will be cited if you are not in compliance.
- **Should** → used when something is strongly recommended, which generally means that you should be at least working on it. If you are unable to meet the requirement, the RRC will expect you to explain how you will accomplish the educational intent in the near future.
- **May** → used when something is considered optional.

The following excerpt from a previous “ACGME Program Requirements for Graduate Medical Education in Pediatrics” illustrates the use of these key words:

“Residents **must** be exposed to a continuity-patient population sufficient in number and of adequate variety to meet the educational objectives. It **must** include well patients and those with complex and chronic problems. Patients initially managed in the normal newborn nursery, emergency department, inpatient service, intensive care unit (pediatric and neonatal), subspecialty clinics, and other sites **may** be enrolled in the residents' panels. Inherent in the principle of continuity of care is that patients are seen on a regular and continuing basis. Isolated block experiences alone will not satisfy this requirement. Ideally, residents **should** participate in the care of their patients through any hospitalization, assess them during acute illnesses, and be
available to facilitate other services, such as school-related evaluations and specialty referrals.

II. Preparing for an ACGME Site Visit

How the Process Works

Pediatric Residency training programs have an ACGME site visit every one to five years, depending on the program’s accreditation cycle length. The site visitor may be a physician or a non-physician, familiar with the expected content and process for resident education. The site visitor’s job is to gather information about the program and present the information, in the form of a written report, to the Pediatric RRC. After the site visit, the reviewer prepares a site report and submits the report along with the PIF (see below) to the RRC. The RRC then reviews all documents and makes the final decision about accreditation and cycle length. Depending on the timing of the next scheduled RRC meeting, the entire process for reporting the outcome may take up to 6 months following the site visit.

Understanding the Program Information Form (PIF)

A Program Information Form (PIF) must be filled out by the Residency Program Director and made available to the site visitor at least 14 days prior to the visit. The current PIF for Pediatrics is available on the ACGME website. The PIF is a lengthy report that addresses all aspects of the residency program. The continuity experience is only one portion of the PIF. As Continuity Director, you will likely be responsible for the Continuity Experience portion of the PIF, but may be asked to help with other aspects of the PIF as well. The Continuity Director may also be asked to meet with the site visitor on the day of the visit.

(Note: The PIF changes frequently so be sure to get the most current PIF questions from the ACGME website as you prepare for your site visit.)

The following are some examples of documentation requirements for the Continuity Experience portion of the PIF:

- Continuity site locations
- Ratio of preceptors to residents
- Number of residents assigned to each clinic site reported by level of training
- Average number of patients per resident per session reported by level of training and site location
- Is this a group or team practice?” A group is defined as a team of residents working together with oversight.” This question is asked of each clinic site.
- Number of ½ day sessions per week
- Range of the number of continuity clinic weeks attended per year, reported by level of training.
Other Required Documentation for a Site Visit

The Pediatric RRC has a number of different requirements for documentation of the continuity experience, which change over time. An example of this may include documentation of each resident’s continuity patient panel with a log that includes age, diagnoses, and encounter dates. Although this documentation does not need to be submitted with the PIF, it must be available for the site reviewer on the day of the visit. The type of data collection system necessary for this documentation will vary based on the current RRC program requirements. Examples of data collection systems (see Chapter 5 – “Data Collection and Tracking”) include: a proprietary internet-based case log, the ACGME case log, a paper log, billing system data, appointment system data. The Continuity Clinic Director is responsible for keeping up with the latest requirements for documentation of a resident’s continuity experience and having this data available for the site visitor.

PIF Documentation of the Competencies

Residency programs are now required to document that residents are engaged in various learning activities that address the ACGME competencies. Many residency programs are choosing to use examples of learning activities that take place during the continuity experience to meet these requirements. Continuity Clinic Directors may be asked to help with the PIF documentation for various program requirements other than the Continuity Clinic requirements, such as Practice-Based Learning, System-Based Practice, Communication or Professionalism.

Timeline for RRC Accreditation Site Visit Preparation

It is important to know when the next site visit is expected. Ideally, data gathering for the visit should be started at least 12 months before the date scheduled, perhaps as soon as completion of the current site visit.
INTRODUCTION

This chapter addresses an issue set forth in the 2007 ACGME guidelines regarding pediatric resident participation in a Quality Improvement Project. “Residents must systematically analyze practice using quality improvement methods and implement changes with the goal of practice improvement; residents are expected to participate in a quality improvement project.”

Resident Review Committee (RRC) guidelines regarding Continuity Clinic stipulate - “The preceptors’ responsibilities include, but are not limited to, mentoring the residents in communication skills, quality improvement skills, practice management system complexities, and patient advocacy.” As the Continuity Clinic Director, the expectation of your program director may be for you to assist pediatric residents in completing this requirement.

I. WHAT IS QUALITY?

According to a landmark document from the Institute of Medicine (IOM) published at the turn of this century, quality is defined as: “The degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with the current professional knowledge.” Health care providers must – “close the chasm between what we know to be good quality care and what actually exists in practice.”

The IOM Committee on Quality of Health Care in America published – To Err is Human: Building a Safer Health System (1999) and Crossing the Quality Chasm: A New Health System for the 21st Century (2001). To paraphrase a statement from the IOM, ‘reforms around the margins are inadequate to address system ills’.

Most physicians know what constitutes good medicine and make an effort to adhere to the practice of quality care. As continuity clinic preceptors, we may occasionally miss some opportunities in our documentation and patient care to put into practice what we know is optimal. In the process of helping to educate our trainees however, we often recognize the need to communicate to them the need for quality improvement.

As an example, what happens when a resident orders a lead level for a 1 year old? Who sees and checks the result and documents the level in the medical record? Who lets the parent know that his/her child’s level is normal or elevated? Who makes sure the patient even had the blood drawn for the test?
Other examples:

- Does every (overweight and obese) patient’s BMI get plotted with percentiles for their age and gender, and does a discussion occur regarding motivation to lose weight or encourage healthy life styles?

- Whose responsibility is it to check that the prepubescent child with short stature (noted at her last WCC) comes back for follow-up at the correct time, or that a language-delayed 2-year-old has effectively been evaluated through an Early Childhood Intervention program?

- What happens to infants who have missed appointments and immunizations?

- Is a child, who receives albuterol >2 times per week, appropriately placed on inhaled corticosteroids?

- We all know what should be done, but in many busy practices with multiple providers, many or most of whom are working only part-time, is care what it should be for our patients? Residents may be in the continuity clinic at most 10-20% of the time each week, while many of the faculty attendees are in the practice only a couple of full-days or half-days per week.

The resident should develop basic knowledge and skills and then demonstrate his/her understanding by participating in an evaluation and improvement project. Ideally, this should be in an area of his/her interest and should be designed to provide “better” (safer, more efficient, more timely, more equitable, more effective, and/or patient-centered) patient care.

Designing a Quality Improvement (QI) project can be achieved in a number of ways:

1. Resident becomes part of an existing quality team within the department or practice/clinic – the caveat → he/she should have a meaningful role in the project
2. Resident works alone (with some guidance) on an interesting or meaningful project within their setting or practice.
3. Residents work together as a team in small (or large) groups.
4. Resident participates in an ongoing project, from previous year, or one in which he/she was involved as a student
5. Resident works with a faculty member, addressing a specific Quality Improvement (QI) issue.

Residents may need some basic information as to the meaning of QA/QI. This could be presented in the form of a workshop, noon conference(s), continuity clinic conference(s), reading assignment(s), web-based module(s), etc.
Some impressive observational facts gleaned from the IOM could serve as a stimulus:

- Annually, between 44,000 and 98,000 Americans die from medical errors.
- Only 55% of patients receive recommended care, with little difference found between preventive care, care associated with acute problems, or chronic conditions.
- Medication-related errors for hospitalized patients cost roughly $2 billion annually.
- Forty-three million uninsured Americans exhibit consistently worse clinical outcomes than the insured, and are at increased risk for dying prematurely.
- The lag time between the discovery of more effective forms of treatment than what is being used and their incorporation into routine patient care averages 17 years.
- About 18,000 Americans die each year from heart attacks because they did not receive preventive medications, though they were certainly eligible.
- Medical errors kill more people per year than breast cancer, AIDS, or motor vehicle accidents.
- More than 50% of patients with diabetes, hypertension, tobacco addiction, hyperlipidemia, congestive heart failure, asthma, depression and chronic atrial fibrillation are currently managed inadequately.
- Children receive only 46.5% of recommended care - NEJM;2007,357:1515-1523

II. WHAT’S THE DIFFERENCE BETWEEN QUALITY ASSESSMENT AND QUALITY IMPROVEMENT?

Quality Assessment - determining how well health care is delivered in comparison to applicable standards or acceptable bounds of care
Quality Improvement - formal analysis of health care performance (the assessment piece) followed by systematic efforts to improve it. QI activities are interventions designed to close the gap between desired processes/outcomes of care and that which actually is delivered.

For much of this chapter you will note the words Quality Assessment and Quality Improvement together. Many of the tools employed use those together. However, the goal is Quality Improvement, as in the definition stated above.

Sample Models:
- PDSA
- 6 Sigma (DMAIC, DMADV)
- FADE E
- CQI: Continuous Quality Improvement
- TQM: Total Quality Management

To restate the obvious: even if it is understood what needs to be done for “best” care, quality improvement is the process for getting your practice from where it currently exists to the level of “best care”.
‘STEEP’: an acronym used as a means of achieving good quality care, i.e.:

SAFE - Patients should not be harmed by the care that is intended to help them
TIMELY - Unnecessary waits and harmful delays should be reduced
EFFECTIVE - Care should be based on sound scientific knowledge
EFFICIENT - Care should not be wasteful
EQUITABLE - Care should not vary in quality because of patient characteristics
PATIENT-CENTERED - Care should be responsive to individual preferences, needs, and values

Examples of Pediatric National Initiative Projects - part of the “Physician Quality Reporting Initiative” (PQRI):

Asthma Pharmacologic Therapy - percentage of patients aged 5 to 40 years with diagnosis of mild, moderate, or severe persistent asthma, for whom either the preferred long-term control medication (inhaled corticosteroid) or an acceptable alternative treatment was prescribed

Asthma Assessment - percentage of patients (aged 5 to 40 years) with diagnosis of asthma, evaluated during at least one office visit within 12 months for the frequency (numeric) of daytime and nocturnal asthma symptoms

Appropriate Treatment for Children with Upper Respiratory Infection (URI) - percentage of children aged 3 months to 18 yrs. of age with a diagnosis of upper respiratory infection, for whom an antibiotic prescription was not prescribed at the time (or within 3 days) of the diagnosis

Appropriate Testing for Children with Pharyngitis – determining the percentage of children aged 2-18 years with a diagnosis of pharyngitis, who were prescribed an antibiotic and who received a group A streptococcus (strep) test

Examples of Local Resident Projects

- Immunization rates and missed opportunities
- Medicine reconciliation in charts
- BMI documentation, BMI plotting, and overweight/obese status discussion
- Hypertension follow-up and treatment timing
- Appropriateness of referral/documentation of children/families lacking health insurance
- Newborn Screening Test Results – documentation and discussion with parents
- Breastfeeding problem follow-up
- Discharge summary appropriateness – comprehensive discussion of hospital course, pertinence, and timely forwarding of record to primary care provider
- Diagnosis of otitis media and antibiotic practices
- Sexually Transmitted Infection (STI) screening during adolescent visits
- Emergency Contraception prescribing
- Medical care/screening of refugee children
- Documentation of smoke exposure
- Smoking cessation discussion with parents
- Improving/systematizing autism screening at 24 and 30 month WCC
- Improving developmental screening testing and appropriate Early Childhood Intervention (ECI) referral

**Institute of Health Care Quality’s Model for Improvement – AIM and PDSA cycle**

**AIM**

A (aim) What is it that you want to accomplish? Each aim requires many small tests of change.
I (idea) Description of the proposed test; the existing gap; how to proceed with testing/demonstration; determination of the barriers
M (measure) How will you know a change occurred? What is the desired outcome/goal?
Cycle What changes are needed to make the improvement?

**PDSA** – acronym for one rapid cycle method used in improvement projects

Plan what/who/where/when?; develop a tracking tool
Do carry-out plan; document observations (expected and unexpected)
Study analyze; compare to earlier outcomes/prediction; summarize
Act determine (next) change(s) to be made

An example of an ongoing PDSA is the immunization “TIDE Project”.

**Aim: Improve primary care appointment availability through reducing and standardizing appointment types**

- **DATA**
  - Cycle 1: Define a small number of appointment types
  - Cycle 2: Compare requests to the types for one week
  - Cycle 3: Test the types with 1-3 physicians
  - Cycle 4: Standardize appointment types
  - Cycle 5: Staff education in new standards

- **APSD**
  - Reduction of appointment types will increase appointment availability
  - Improved access
IOM lists 20 priority areas in need of assessment and improvement
(Those highlighted are pertinent to children)

Asthma
Care coordination
Children with special health care needs
Diabetes
End of life with advanced organ system failure
Evidence-based cancer screening
Frailty associated with old age
Hypertension
Immunization
Ischemic heart disease
Major depression
Medication management
Nosocomial infections
Obesity
Pain control in advanced cancer
Pregnancy and childbirth
Self-management/health literacy/Severe and persistent mental illness
Stroke
Tobacco dependence treatment in adults
Secondary Drivers: In the area of finding effective QI curricula as well as role models and mentors, the dearth of clinical champions who bring QI concepts to the bedside can be overcome by actively recruiting and developing promising individuals, especially those with a history of previous experience. To aid in the process of preparing residents, coordinated efforts need to be made to provide resident-specific education and outreach programs relevant to “top-down” and “bottom-up” approaches. The curriculum needs to integrate, in a timely fashion, educational objectives and institutional QI aims. Too much information related to the curriculum overpowers interest and thwarts efforts, while too little information may result in QI efforts that fail to succeed.

To overcome challenges posed by the residency infrastructure, “top-down” initiatives have resulted in an optimal mechanism for resident involvement by recruiting senior residents or ‘delegates’ with an interest in QI. For “bottom-up” QI projects, it is necessary to have an appropriate subject/topic to study and a reasonable time table for completion so that residents are able to see their efforts come to fruition. To generate interest among residents, it is often helpful to reveal to them data referable to their patient practice.

Each primary (or potentially secondary driver) could serve as a focal point for institutional or program-level efforts and help stimulate resident interest in becoming involved in a QI project. Ultimately, outcome study data could be used to measure the effectiveness at the program and/or institutional level. The results could be helpful in gaining insight about institutional strengths and/or areas in need of improvement. The output could result in a portfolio of resident projects and a body of learning about how to achieve educational objectives and institutional improvement.

1 Accreditation Council for Graduate Medical Education and Institute for Healthcare Improvement -90-day project. Involving Residents in Quality Improvement: Contrasting “Top-Down” and “Bottom-Up” Approaches. Ingrid Philibert, PhD, MBA. August 2008.

Some Categorical Conditions/Situations Warranting QI Study

- Prevalent conditions - dental caries, asthma, otitis media
- Conditions with high burden of illness
- Conditions with cost as a major factor
- Conditions managed by practitioners employing different approaches to care
- An approach to the management of a particular condition that could improve the care and/or has the potential to reduce cost
- Clinic system issues – turn-around time for patient visits, lab follow-up, nurse-physician ratio, room availability, patient satisfaction, scheduling of lab and imaging studies, and/or the timely interpretation results
The RRC does not stipulate that the QI project has to be completed in continuity clinic, though it is a logical venue for such studies. ***

**Suggested Intervention Efforts for Residents to Consider When Designing an Improvement Project**

1. Development of a (or the use of a previously developed) clinical guideline/pathway
2. Provider reminders
3. Re-education of providers regarding a condition or guideline
4. Development of patient reminders
5. Development of a case/disease management plan
6. Developing patient education tools – questionnaires, brochures, videos, online sources
7. Modification of a chart template (e.g., checkbox for discussion of parent smoking cessation during a well child check-up; f/u notes regarding a recent bout of otitis media or an asthma exacerbation)

**An Approach to the Development of a QI Project**
Collaborate - brainstorm with several individuals; e.g., a faculty member and/or fellow with one or a group of residents; ongoing mentoring by knowledgeable faculty

1. Consider a problem or quality issue
   a. List several ideas

2. Formulate very specific question(s) to assess the problem (QA).
   What is the AIM? (This could be the most difficult hurdle.)
   a. Resident may want to confront the topic of obesity → need to hone in on ONE particular issue:
      i. Are BMIs charted?
      ii. Are BMI percentiles plotted?
      iii. Are BMI percentiles discussed and documented?
      iv. Is there documentation as to lab studies ordered or for the referral to a nutritionist/dietician or to a weight reduction program?
      v. Was a follow up appointment made?
      vi. What counseling was offered?
      vii. Was weight loss (or maintenance) documented in a timely fashion?
   b. A project or question that is unfocused will be difficult to approach and nearly impossible to answer – (When advising residents, this requires the greatest attention.)
3. Mutually discuss with the resident(s) whether the project is truly achievable in the time allotted.
   a. Many individuals attempt to address more than they can manage.
   c. Review the PDSA cycle → begin with small steps
   d. Like most of us, residents have to multitask. They need to learn and to apply the basic study principals in order to have a meaningful impact on patient care throughout their professional careers. Maintenance of Certification (MOC) depends on it.

2. Develop a chart/data collection tool BEFORE proceeding.
   a. Developing the tool is paramount – as in #2 above, make the question specific (one sentence may suffice). What is the aim of the project?
   b. Residents (and others involved) need to be very specific.
      i. The question is: “Have the parents/mothers of 2-month-old infants been counseled regarding the newborn metabolic screen results?”, or “Do all parents of infants with sickle cell trait know the diagnosis?”
   c. A chart review/specific tool can be developed
      i. Date-of-birth (DOB)
      ii. Sex (if deemed important)
      iii. Race/ethnicity (if deemed important)
      iv. Age/Date of visit
      v. Newborn screen lab result in chart/available? (yes/no)
      vi. Is it filed in the correct place in the chart? (yes/no)
      vii. Does documentation exist as to counseling regarding post-test results? (yes/no)

3. Decide how the data will be collected
   a. Chart review; billing data; discharge diagnoses

4. Collect the data – ancillary support is often needed (Information Technology; office manager; medical records liaison) to retrieve the specified charts or numbers. Resident will perform the review, but he/she needs to have a way to get to the information. This may be easier when it comes to electronic health records, though accessing the appropriate charts will require assistance.
   a. Resident will need to specify which charts he/she would like: - born between January and June, 2010 with a 2-month well child visit; or all patients seen in May less than one year of age, or all Wednesday team patients seen last week, or ‘my patients’ seen in 2010.
   b. Resident probably will need to speak with the person in charge of data retrieval to see how information is coded – as not all information is accessible or searchable electronically in all institutions.
   c. Once the names or medical record numbers are retrieved, charts can be accessed. If the number of patients is insufficient or there are too many
charts to review, modification of the collection criteria (diagnosis, time span, age range) can be expanded or narrowed accordingly.

Analyze the charts/information/data
   d. Total the data and calculate %. For example:
      i. 20% of 1-month well child check-ups (WCC) and 80% of 2-month WCC during the month of March had newborn screen lab results in the chart
      ii. 0% of 1-month and 50% of 2-month WCC visits reflected that the lab results had been noted and documented
      iii. 25% of visits at the 2 month WCC included a discussion of the results with the parent/guardian

5. How might the problem be improved? (QI)
   a. A number of approaches:
      i. The education of file clerks regarding the appropriate filing of newborn lab results
      ii. Do lab personnel know where to send the lab results?
      iii. If the issue is provider documentation, then the improvement needed may be the development of an educational tool for providers or a chart reminder/check box on the front of the chart (or on the 2 month visit note) reminding the physician to discuss newborn metabolic screen results.
   b. Once an improvement plan is developed, the real challenge is getting provider buy-in.

6. Recollect and reanalyze the data to see if the improvement effort(s) had a successful impact.

It is not critical for the resident to be directly involved in all the steps, though they should be involved in the thought process and design. Some may assume responsibility for an ongoing project; i.e. one that has not been completed. Others may choose to take on a project for which a previous single cycle showed some improvement, but best practice was not close to 100% (i.e., the gap needs to be narrowed between ideal and actual practice). Many improvement projects will require multiple small tests of change (many PDSA cycles) to achieve optimal patient care or outcomes.

There should be an opportunity for residents to present and share findings at a specified conference or poster session and to document findings. An example of a documentation template and one evaluation tool are included below.
The lesson to remember is: **Low-quality care typically does not stem from a lack of effective treatments, but from inadequate systems to carry them out.**

**SAMPLE: Quality Improvement Project Write-up Template**

Resident Name: _____________________________      Date: ________________  
Title of QI project _______________________________________________

**AIMs** - describe aim of project - Question of concern (see SMART components below)

**Ideas** - discuss gaps, ideas, barriers (national/state/regional statistics if pertinent) or expected standards of care. Briefly discuss success and feasibility for change in the setting/system being evaluated.

**Measures** - What is the desired goal, what is needed to close the gap, what measure will determine a successful outcome?

**Plan** - What you will do - tools, tasks, predictions. Show data collection or chart review tool, discuss patient group, show data collected.

**Do** - Implement change - discuss process

**Study** - Discuss findings. The outcome(s) of your assessed charts - analysis, how did this compare with predicted outcome(s).

**ACT** - How will you modify your study or what is going to be your next approach for achieving success, based on what you learned from this cycle?

**P-D-S-A 2** - Outcome of reassessed charts after implementation of improvement, i.e., difference between 1\textsuperscript{st} and 2\textsuperscript{nd} set of charts with pertinent discussion/implications.

**Overall** - Conclusions - How has the project or how has the process modified practice or behavior?
SAMPLE: Quality Assessment and Improvement Project Evaluation Form

Resident: _________________________________________
Title of Project: _________________________________________________
Date Project submitted: _________________________________________
Faculty evaluator and Evaluation date: _____________________________

1. Is Aim of improvement project well articulated?
   Yes        No

2. Did you describe performance gap?
   Yes        No

3. Did you describe measures to be used?
   Yes        No

4. Standards for determining success are articulated
   Yes        No

5. Appropriate data collection tool developed
   Yes        No

6. Results Documented
   Yes        No

7. Analysis of results, compared to standards or desired outcome, improvement/gap narrowed (or not)
   Yes        No

8. Summary of the improvement process is presented
   Yes        No

9. Post-change data are presented
   Yes        No

10. Post-change analysis presented and compared to goal/standards/desired
    Yes        No

11. Reasonable conclusions and implications for future are presented
    Yes        No

Comments
**Worksheet: Creating a SMART Aim Statement**

**Overview**
Your team is ready to make a change that requires a collective effort and focus. Essential in this achievement is the ability for all members of the team to understand and align with what is trying to be accomplished. You can develop a precise, concise, and achievable Aim Statement by using a Worksheet for Creating a SMART Aim Statement.

**Working with a team to create the Aim Statement:**
1. Fill the empty boxes on the Worksheet for Creating a SMART Aim Statement with the parts of the statement that you believe satisfies each letter of the SMART acronym: S, M, A, R, T.
2. After you have finished entering each of the criteria, use the checklists below each letter in the acronym to see how solid your entries are.
3. Finally, form the Aim Statement at the bottom using the pertinent SMART elements. Example: Reduce the number of instruments used in XXXXX procedures 40% by the end of month/year

**When you think your Aim Statement is SMART, do this last test:** Ask those outside the team, who nevertheless are associated or affected by the Aim Statement, to describe what the statement means to them. If the description is vague, work with them on how to make it clearer. Then, have the team consider incorporating the suggested input into the statement.
# Worksheet for Creating a **SMART** Aim Statement

| **S**pecific |  
| --- | --- |
|  
| _What is the goal or intent. Precisely and concisely describe what is to be achieved. It MUST focus on achieving only ONE thing._ |

| **M**easurable |  
| --- | --- |
|  
| _There is a direct relation between the increase and the decrease of a measure and the attainment or loss of the goal. Recommend: Start the Aim Statement with Increase/Decrease…then describe the object of what is to be measured._  
| _There are means by which to measure and monitor progress over time (take, collect, and record the measurement)_ |

| **A**ctionable |  
| --- | --- |
|  
| _The team can take action to overcome any known barriers to achieving the proposed measurable results._  
| _The ‘HOW’ of achieving this goal is NOT part of the Aim Statement (this would restrict other plausible solutions)_ |

| **R**ealistic |  
| --- | --- |
|  
| _Given the resources available, it is within the teams ability to achieve, control, or influence the Aim’s attainment. Nothing of significance should compete with the time/attention/ability of the individual or team to achieve the goal._ |

| **T**imely |  
| --- | --- |
|  
| _The goal has a target date. If timeline is beyond 6 months, there are interim milestones. It is recommended however that the goal be achieved by a specified date. (Nothing should compete with the time and attention needed to achieve the goal.)_ |

| **A**im **S**tatement |  
| --- | --- |
|  
| _Now, craft a clear, concise, precise Aim Statement integrating the pertinent elements of the above_ |
Resource: www.mdanderson.org/education
INTRODUCTION

This chapter deals with the measurement of continuity within continuity clinics. It is a matter of common sense that both physicians and patients value the concept of continuity of care. Physicians are more effective and more efficient when seeing a patient for whom they have provided care in the past. Patients/parents find it less frustrating and more satisfying to interact with a physician who has seen them previously, one with whom they are familiar.

As educators and through the Resident Review Committees we have shown a commitment to continuity as an educational tool and objective through the requirement that pediatric residents have a mandated continuity experience.

Why measure continuity? If you are a clinic director and/or preceptor, who aspires to and teaches the concept of continuity, then one must assure that continuity is actually occurring. To do this, you must measure continuity and follow that measurement over time. This chapter builds on Chapter 5 (Data Collection). It presents some of the science and methods behind the measurement of continuity. For better or worse, most of our systems of measurement were designed to capture an episode of care; a visit, a hospitalization. These systems are not well designed to measure continuity of care.

CONTENT

In some ways this chapter is daunting. It contains mathematical symbols that you may not have encountered since college. Persevere, the rewards are great. One of the first rewards will be a better understanding of the importance of continuity and insuring continuity. Another reward is the understanding of what is necessary for measuring continuity, and, if the technical requirements are currently beyond your programs capabilities, it is a goal to achieve.

It addresses the history and rationale for the measurement of continuity, a discussion of various measures and when each might be used, a suggestion of what data should be collected and maintained, and concludes with a listing of the various continuity measures and how each is calculated.

Continuity of care, a medical home for patients, and primary care are aspects of healthcare associated with enhanced quality of patient care. In fact, Christakis has recommended that the value of continuity of care is such that it should not be viewed as a process but rather a valuable outcome to be achieved. The terms “medical home” and “primary care” are concepts, which are understood and agreed upon, if not always consistently operationalized. Much of the discussion of continuity of care has involved the medical home; continuity of care is considered a key component of the medical home. Since 2000, there have been more than 350 published
articles addressing pediatric continuity of care. At least 32 different indices exist for measuring continuity, each in a somewhat different way. Saultz, reviewing the various indices, conceives the hierarchical definition of continuity of care going from informational to longitudinal to interpersonal. Whereas, Jee, et al. characterize the indices as measuring continuity through duration, density, dispersion, sequence, or subjective estimates.

In spite of the inconsistencies in the definition and measurement of continuity, there is evidence that a longitudinal relationship with one physician does enhance aspects of quality of care for patients. These include patient satisfaction, physician and staff satisfaction, increased health maintenance visits, increased immunization rates, fewer sick visits, increased compliance with appointments and medications, increased physician recognition and discussion of emotional and behavioral problems, decreased emergency department visits, and a decrease in the number of laboratory and imaging studies. Continuity of care has the potential to reduce the overall cost of medical care.

Questions have been raised concerning how effective pediatric resident continuity clinics have been in offering a meaningful continuity experience. Garfunkel, et al., reviewed the continuity experience of pediatric residents in a community hospital-based continuity clinic site over a 9-year period from 1984 -1993 and found a significant lack of both resident and patient continuity. More recent studies have addressed resident continuity experience in private practice settings versus academic-based or community clinic-based settings. Rice, et al. revealed that residents in private practice sites had less continuity (defined as seeing a patient more than 2 or 3 times), than those in public or university clinic practices.

Darden et al showed, that with proper support, the resident continuity clinic could compare favorably to that achieved by community pediatricians. It is clear that more time in continuity clinic is associated with increased continuity. Conversely, recent changes to resident duty hours have resulted in less time in continuity clinic and, even with optimal support, less continuity of care.

Continuity of care is measured in a number of ways. When to use the various methods is open to question. Despite the diversity of these measures, all provide remarkable benefit to patient care and education. Though not identical, the seven measures examined (as outlined below), tend to vary in the same direction.

Many measures examine continuity from the perspective of the patient, with the total number of patient visits as the denominator (COC, MMCI, PAT). For the attainment of patient goals related to continuity, this is appropriate. It is not clear however that one measure is superior to any other in its association with patient care outcome.

The COC index has two disadvantages. It is extremely sensitive to the number of providers a patient has seen and it is not a linear measure over a variety of providers and patient visits. The MMCI is more linear but is relatively difficult to calculate. Neither the COC nor the MMCI require that a care provider be identified in the data. Continuity for patients (PAT) is an intuitive measure, easy to understand and to calculate. Its disadvantage is that it requires each patient to have an identified provider within the data.
Other measures have as the denominator the total number of patient visits to the office (UPC, SECON). These tend to be the easiest to calculate as available data often is arranged as visits. The usual provider of care (UPC) measure is conceptually related to an episode of care. This measure is the easiest to calculate. The denominator is the total number of visits to the clinic site, however, it is not conceptually related to either patient or physician outcomes. The sequential continuity index (SECON) is a calculation of the number of consecutive visits during which the patient was seen by the same provider. Again the denominator is the total number of visits to the clinic site.

The three-item continuity scale (TICS) is the only qualitative measure of continuity included in this discussion. It is a subjective measure based upon a parent’s/guardian’s response to a survey.

A proposed measure of continuity is that taken from the perspective of the physician (PHY). It is relatively easy to calculate, but requires that the assigned physician for each patient visit be identified in the data set. This measure seems appropriate when outcomes related to physicians are relevant. It could be used for determining the educational experience of pediatric residents.

How can the data needed for these measures be collected? In reality much already is being collected (visit data and resident logs). Often, a great deal of effort is expended to assure that it is correct (resident assignments) and some, unfortunately, is being discarded (potentially the old resident assignments).

The electronic capture of all patient visits (visit data), the resident who sees the patient, the diagnosis(es), the patient’s age and gender, and the name of the attending physician are necessary. If this is reminiscent as to the patient logs required by the RRC, that is correct. This is the basis for the measurement of continuity; some measures could be calculated from this alone (COC).

In addition to visit data, data about the patient and resident, as well as team or attending assignment, need to be captured and maintained over time. For programs that reassign patients to new residents each year, this information should be available, though often information as to previous resident assignments is not preserved.

The last set of data is that relevant to the resident. When did he/she start into the residency program and at what level? Was there any interruption to or extension of his/her residency training? If one wants to determine continuity with regard to a particular attending or to continuity teams, that information should be captured.

Below are listed the seven measures of continuity noted above. Each has one or more references, giving the reader an opportunity to understand in greater detail its derivation and and calculation. Two good general references are the 2001 article by Darden and a 2000 book chapter by Saultz.

There are a number of conventions used below that could be confusing. The symbol ∑ indicates summation or adding up the same calculation for a particular group. An example could be calculating for each provider the proportion of visits during which an individual saw their own patients and then adding the respective proportion for other providers.
1. Usual Provider of Care (UPC):^14

Calculation of the usual provider of care determines the overall proportion of visits during which a patient was seen by the assigned provider.

\[ C_{upc} = \frac{n_c}{n_t} \]

C_{upc} = Continuity, usual provider of care  
nc = Number of visits in which a patient saw the assigned provider  
nt = Total number of visits to the office

For this measure you need to assign residents to patients and be able to track this over time. When there is a change of an assigned resident provider, the original provider-patient match still remains within the data. At each patient visit, the resident providing care should be identified. If continuity by attending is desired, the same information for the resident should be captured for the attending.

2. Continuity for Physicians (PHY):^15

Continuity for Physicians is the average proportion of patients encountered by a provider that actually were his/her own assigned patients.

\[ C_{phy} = \frac{\sum n_{pi}}{n_{pt} \times P_t} \]

C_{phy} is Continuity for Physicians  
n_{pi} is the number of patients that the physician (p) has seen that are his own  
n_{pt} is the total number of patients that the physician (p) has seen  
P_t is the total number of physicians

For each physician (p) the proportion of visits where they saw their assigned patients, n_{pt}/n_{pt}, is calculated and this proportion is summed for all physicians in the clinic. This sum is divided by the total number of physicians (P_t). For this measure, it is important to assign residents to specific patients and to be able to track encounters between them over time. When there is a change of an assigned resident provider, the original provider-patient match still remains within the data set. At each patient visit the resident providing care should be identified. If continuity by attending is desired, the same information for the resident should be captured for the attending.

3. Continuity for Patients (PAT):^15

Continuity for Patients is the average proportion of visits for each patient in which they were seen by the assigned physician.

\[ C_{pat} = \frac{\sum n_{gi}}{S_t} \]

C_{pat} is Continuity for Patients  
n_{gi} is the number of visits in which a patient saw his assigned physician  
S_t is the total number of visits to the office
\( C_{\text{pat}} \) is continuity for patients
\( n_\text{pat} \) is the number of visits for patient(s) seen by their own physician
\( n_\text{st} \) is the total number of visits that the patient(s) is seen in the clinic
\( S_t \) is the total number of patients

For each patient(s) the proportion of visits where they see their assigned provider, \( n_{st}/n_{st} \), is calculated and this proportion is summed for all patients in the clinic. This sum is divided by the total number of patients \( (S_t) \). For this measure, it is important to assign residents to specific patients and be able to track encounters between them over time. When there is a change of an assigned resident provider, the original provider-patient match still remains within the data set. At each patient visit the resident providing care should be identified. If continuity by attending is desired, the same information for the resident should be captured for the attending.

4. Modified, Modified Continuity Index (MMCI):

\[
C_{\text{mmci}} = \sum \left( \frac{1 - \left( \frac{n_p}{[n_p + .01]} \right)^{n_v}}{1 - \left( \frac{1}{[n_p + .01]} \right)^{n_v}} \right) / P_n
\]

\( C_{\text{mmci}} \) is modified, modified continuity index
\( n_p \) is the number of physicians the patient saw
\( n_v \) is the total number of visits to the practice by a particular patient
\( P_n \) is the total number of patients in the practice

The MMCI is calculated by calculating the numerator for each patient individually, summed over all patients in the practice, and then divided by the total number of patients in the practice.

This measure does not require that a resident be assigned to specific patients. At each patient visit, the resident providing care should be identified. If continuity by attending is desired, the same information for the resident should be captured for the attending.

5. Bice Index or Continuity of Care Index (COC):

\[
C_{\text{coc}} = \sum \frac{\sum n_j^2 - n}{n(n-1)} / P_n
\]

\( C_{\text{coc}} \) is the Bice Index, or Continuity of Care Index
\( n_j \) is the total visits by the patient to provider j
\( n \) is the total number of visits to the practice by the patient
\( P_n \) is the total number of patients in the practice.

The COC is calculated by calculating the numerator for each patient individually, summed over all patients in the practice and then divided by the total number of patients in the practice.
This measure does not require that a resident be assigned to specific patients. At each patient visit, the resident providing care should be identified. If continuity by attending is desired, the same information for the resident should be captured for the attending.

6. The Sequential Continuity Index (SECON)$^{39,40}$

$$\left(\sum_{i=1}^{n-1} S_i\right)/(n - 1)$$

- $n$ is the total number of visits
- $n - 1$ is the number of sequential pairs of visits
- $S_i = 1$ if the same provider is seen for visit pair $i$
- $S_i = 0$ if different provider is seen for visit pair $i$

The SECON is calculated by comparing the provider of care at each visit to the provider of care in the visit preceding. If the preceding visit has the same provider, this pair of visits is coded as “1” otherwise as “0”. All of these comparisons are summed and then divided by the number of pairs of visits (which is 1 minus the total number of visits). The SECON is a measure of continuity in a sequence of visits. It does not require an assigned provider. It values seeing the same provider on the next visit for care.

7. Three-Item Continuity Scale (TICS):$^{18}$

Continuity should be measured by reports from respondents (parents/guardians) as to the extent to which clinic or private physician office visits involved contact with the same physician. The three-item Continuity Scale (with possible scores of 0 to 12) should be used. The following three items are descriptive phrases that help to determine physician continuity:

- “My child hardly ever sees the same doctor when he or she goes for medical care.”
- “If more than one family member needs medical care, we have to go to different doctors.”
- “My child sees the same doctor just about every time he or she goes for medical care.”

This information is captured by patient/parent surveys. Optimally, 30 individual families should be surveyed for each resident.


34. Roberts KB, Starr S, DeWitt TG. The University of Massachusetts Medical Center office-based continuity experience: are we preparing pediatrics residents for primary care practice? *Pediatrics*. 10 1997;100(4):E2.


