SAFER
THE CHAIR’S INITIATIVES OF THE DEPARTMENT OF PEDIATRICS
ROUND 2

The Children’s Hospital of Philadelphia*
Hope lives here.
THE CHAIR’S INITIATIVES

Encouraging Excellence

The Chair’s Initiatives program provides internal grants that support projects throughout Children’s Hospital. Begun by Alan R. Cohen, M.D., Physician in Chief, and Chair, Department of Pediatrics, and Alison Marx, operating officer, Department of Pediatrics, the program develops new projects and nourishes existing efforts, providing funding for staff and support from quality specialists, administrators, information technology and other internal and external resources.

Project teams are held accountable for their results, just as they would be for a rigorous external grant. They must describe a method for reporting measurable outcomes in their application. Regularly scheduled reports are presented to Dr. Cohen and his team during the two years of funding. Ten projects were funded from 2006–2008, six from 2008–2010, and six more are currently under way.

A challenge in healthcare is to continue grant-supported projects when funding concludes. The 16 projects from Rounds 1 and 2 have all continued, funded in a variety of ways. Several are supported in part by the Hospital’s operating budget, a reflection of the quality and reach of the Chair’s Initiatives.

Keeping Them Safe

Since its inception in 2006, the Chair’s Initiatives program has helped 22 teams turn great ideas into reality. Reflecting the Hospital’s commitment to patient safety, we have chosen projects focused on innovation, safety and quality of care.

At The Children’s Hospital of Philadelphia there is no higher priority than keeping patients safe while providing the best care. Chair’s Initiatives teams have made and continue to make significant contributions to efforts to minimize errors and safeguard the well-being of patients.

Participants in the Chair’s Initiatives have included physicians, nurses, computer programmers, researchers, engineers, nurse practitioners and others within many specialties, including gastroenterology, hematology, cardiology, surgery, oncology and emergency medicine. These individuals provide an unflagging willingness to work diligently and collaboratively to move their initiatives forward and to find solutions to complex challenges. Underlying their efforts is a remarkable dedication to their patients.

It has been incredibly gratifying to see every one of our Round 1 and Round 2 projects continue after their two-year cycle of funding concluded. Every day, Chair’s Initiatives teams are helping patients and families throughout this great hospital, and I am very proud of their hard work and dedication.

On behalf of my leadership team, including Alison Marx, M.B.A., operating officer, Department of Pediatrics, and Kathy Shaw, M.D., M.S.C.E., associate chair, Department of Pediatrics, I am pleased to showcase the Round 2 Chair’s Initiatives.

**Anticoagulant Management Program**
(Page 2) Improving monitoring and care for children taking "blood thinners"

**Chemotherapy Tracking Project**
(Page 5) Computerizing records of cancer patients’ drug regimens

**CHOPLink Implementation, Quality and Patient Safety**
(Page 8) Linking clinicians with computer specialists to ensure technology improves care

**Collaborative Clinical Pathways**
(Page 11) Establishing a framework for care guidelines to be created more easily

**Intestinal Rehabilitation Program**
(Page 14) Coordinating and improving care for children with intestinal failure

**Unit-based Patient Safety Walk-rounds**
(Page 17) Providing a forum for safety concerns of families and staff

On the cover: Colin, 6 months, (with his dad, Ian) is a patient of the Anticoagulant Management Program.
Anticoagulants are often associated with harmful errors. Children require these drugs, known as “blood thinners,” for a range of issues: strokes, heart problems, and use of long-term IV catheters or other invasive devices, which can cause clots. Precise dosing is incredibly important to patient safety — too much of the drugs can cause hemorrhaging, and too little can result in clots.

Safe use requires numerous lab tests to gauge how the anticoagulant is working and to make sure the child isn’t bleeding internally. Proper dosing requires ordering the right tests at the right time, and then reviewing them and adjusting dosage. Patients respond differently to anticoagulants, so monitoring them when they first go on the drugs is critical. When patients go home, parents must understand the importance of dosing correctly and continuing tests and appointments.

A group of hematologists and pharmacists saw a need for better monitoring of anticoagulants and began improvements. A Chair’s Initiatives grant allowed them to expand quickly: They brought in other disciplines and formed the Hospital-wide Anticoagulant Management Program.

“\nWhen he was in the hospital they would test his levels every week, making sure he was in therapeutic range, that the dose was correct. Now that he’s home we bring him in once a month to have his levels checked. It has been an extreme comfort for my husband and me. Everyone is helpful and informative, and we feel that our baby is in wonderful hands.\n”

— Sue, whose 6-month-old Colin (on the cover) was born three months premature and developed a blood clot in a chamber of his heart.

Thanks to the efforts of the Anticoagulant Management Team, a vulnerable group of patients is safer.
Oncologists treating children with cancer follow prescribed regimens for doses and timing of chemotherapy. The regimens, established after years of testing, are intended to attain a balance between fighting the cancer and minimizing toxic effects. Oncologists fine-tune the regimens based on the child’s reactions to the drugs. The reactions, in turn, often require additional medications. It’s important to keep a careful record of all drugs received. For years these records, called “roadmaps,” were on paper, updated manually by each doctor involved in care. The roadmaps were sometimes incomplete and difficult to read or understand, and they didn’t always follow the patient through different settings. For example, when a patient receiving chemotherapy as an outpatient was unexpectedly hospitalized, the inpatient oncologist might not have the up-to-date record.

CHOP was switching to a new system for electronic medical records. As this larger paper-to-computer transition occurred, an oncologist recognized an opportunity to analyze the current “roadmap” system, with the goal for improved methods in the electronic realm. With Chair’s Initiatives funding, a team created the Chemotherapy Tracking Project.

**Challenge**

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Accomplishments

- Completed review of 100 paper medical records and identified areas to focus on for improvement; for example, inpatient chemotherapy was recorded more completely than outpatient chemotherapy.
- Created comprehensive chemotherapy ordering and tracking process for CHOP’s new computer system.
- Surveyed oncologists, nurse practitioners and others to assess their priorities and get their ideas for the electronic roadmap.
- Created a prototype of an electronic roadmap.

Charles Bailey, M.D., Ph.D.
Bobbie Bayton, C.R.A.
Colleen Callahan, C.R.N.P.
Christopher Forrest M.D., Ph.D.

Megan Henning, R.N.
Saira Khan, M.S.
Shannon Lewis, R.Ph.
Anne Reilly, M.D.
Beth Storey, R.N.
Stephanie Powell, R.N.
Cathy Timko, C.R.N.P.
Jo Minton
Geraldine Uy

Team

Work on the Chemotherapy Tracking System continues. The project will contribute to improved computer tracking systems, keeping pediatric cancer patients safer.
CHOP has switched to a new computer system to manage electronic medical records and other patient care functions. This has been a complicated undertaking at CHOP, which has 28,000 inpatient admissions and more than one million outpatient visits annually. As the system was phased in (the effort is called CHOPLink), doctors, nurse practitioners and other clinicians began noticing areas for improvement. For example, during visits they were spending too much time clicking through screens to enter information into the electronic medical record, taking focus away from the patient. Menus for ordering medications were not refreshed with new FDA-approved drugs. The process for updating patients’ medication lists was confusing, leading to potentially dangerous inaccuracies. These and other concerns affected patient safety and quality of care.

With Chair’s Initiatives funding, clinicians with experience in programming and other areas of information technology (IT) formed a team to help improve the new system. Calling itself the SWATT Team (Specialists with Advanced Technical Training), the group grew, attracting more clinicians as well as IT specialists from CHOP.

**Challenge**

- Visited other institutions with the same computer system (Epic) to analyze what was working and not.
- Surveyed CHOP clinicians to identify concerns and suggestions about the new system.
- Created an enhanced, standardized and family friendly “after-visit summary,” a document parents receive at the end of every visit. Populated from the new computer system, it lists plan for care, medications, upcoming appointments and more.
- Served as a resource to the Hospital’s IT specialists in identifying and prioritizing fixes.
- Created a “Tips and Tricks” sheet to explain common areas of confusion.
- Began providing proactive advice to the Hospital’s computer specialists as they put new pieces of the system into place.
- Prioritized, piloted and guided development of outpatient letter-faxing capabilities and enhanced progress notes.

**Team**

- Scott Akeley
- Jeffrey Bryers
- Ellen Capone
- Bimal Desai, M.D.
- David Friedman, M.D.
- Trude Haecker, M.D.
- Deborah Joers
- Sara Kinsman, M.D., Ph.D.
- David Langdon, M.D.
- Eli Lourie, M.D.
- Anthony Luberti, M.D.
- Barbara Malloy
- Jeffrey Martinez
- Alison Marx
- David Piccoli, M.D.
- Natalie Plachter, M.D.
- Douglas Powell
- Kathy Shaw, M.D., M.S.C.E.
- David Sherry, M.D.
- Jonathan Spiegel, M.D., Ph.D.
- Anna Spraycar
- Raman Sreedharan, M.D.
- April Taylor
- James Treat, M.D.
- Barbara Ulircuis
- Donald Younkin, M.D.
- Joseph Zorc, M.D.
- Kathleen Zsolway, D.O.

The SWATT Team has become a crucial bridge between patient care and information technology. Together, people from both sides are making the computer system better and patient care safer.

“*When your child has a disease that requires multiple specialists, you deal with so much information. We have appointments at least once a month. We have prescription changes and dietary changes. It’s great to have a summary of past, present and future to refresh your memory and help you stay on track.*”

— Jane, whose daughter, Joyce, sees gastroenterologists, hematologists and endocrinologists at CHOP, commenting on the after-visit summary.
When making decisions about care, doctors and nurses face a huge array of options. Which tests should I order? Which antibiotic is best to prescribe? Which specialists should I consult? “Clinical pathways” are written standards to guide decisions. They detail essential steps for specific problems. They existed for years on paper and are now computer-based. Pathways are particularly useful in emergency rooms, where decisions must be made quickly and about a wide variety of ailments. Creating pathways can be arduous, requiring review of literature and data on best practices, and consensus from numerous physicians, nurses and others.

CHOP Emergency Department (ED) physicians have been leaders in creating widely used pathways. Recognizing the power of pathways to improve care, an ED team wanted to establish a framework, or process, to expedite pathway creation including numerous specialists. They also wanted to make pathways even better by finding a way to track their effect on care.

With Chair’s Initiatives funding, the Collaborative Clinical Pathways team was formed. The team used “febrile young infant” as the model “super pathway.”
Accomplishments

- Convened multidisciplinary team and created pathway for febrile young infant. (Infant less than 56 days old with fever above 100.4°Fahrenheit.)
- Set "performance measures," metrics to show whether the pathway is improving care.
- Developed the first "scorecard" to track performance measures. For example, for infant fever, the scorecard tracks time-span from arrival until the baby receives antibiotics.
- Wrote a 15-page guide to creating pathways.

- Began linking "order sets" to pathways to simplify ordering of medicine and labs.
- Created super pathway for inpatient asthma, and established teams for 11 other conditions, showing increased ease of creating teams and beginning work.
- Created computer modules to educate residents and nurses about pathways.
- Began moving pathways to the Internet for use by partner hospitals.

Team

Louis Bell, M.D.
Susan Coffin, M.D., M.P.H.
Stephen Crawford
Joe Filipollo
Cynthia Jacobstein, M.D.
Ron Keren, M.D., M.P.H.
Jane Lavelle, M.D
Mark Magnusson, M.D., Ph.D.
John Martin
Lina Motta
Maureen McCloskey, R.N.
Elizabeth Moxey
Anna Simon, R.N.
Tara Trimarchi, R.N.
Don Yanaitis
Theo Zaoutis, M.D., M.S.C.E.
Joseph Zorc, M.D.

On the new “Clinical Pathways” site on the CHOP Intranet, “febrile young infant” is the standard provided for teams building pathways. The site has 60 completed pathways, a library that is growing.

"As a resident, clinical pathways augment my educational experience by providing easily accessible guidelines applicable to the common problems we see."

– Jim Dodington, M.D., resident, Emergency Department

Short-bowel syndrome is a rare condition in which part of the intestine has been removed because of injury, genetic disorders or necrotizing enterocolitis (NEC). NEC, in which intestinal tissue dies after infection or loss of blood flow, is most common in premature and sick infants.

Because of its large neonatal intensive care unit, CHOP has numerous short-bowel patients. Many are fed through a central line (a long-term IV delivering nutrients to the bloodstream), which increases risk of serious infections and can cause liver disease. A primary goal for these patients is to transition from a central line to a nose or stomach feeding tube and/or regular eating. The right medicines and diet can improve the intestine’s ability to absorb nutrients, resulting in a healthier child.

This fragile group requires care from numerous departments. Communication among specialists was inconsistent and follow-up after discharge fragmented. A team that included gastroenterologists, surgeons, neonatologists and dietitians felt they could improve care.

With a Chair’s Initiatives grant, they formed the Intestinal Rehabilitation Program.

**Accomplishments**

- Created a nurse coordinator role and dedicated social worker time for the program.
- Held a short-bowel education day for CHOP nurses, fellows and dietitians, and developed family education materials.
- Obtained FDA “expanded access investigational new drug” approval for Omegaven®, a fat emulsion. Many children fed through central lines develop liver disease. Preliminary studies show Omegaven may limit liver disease when used in feedings.

**Team**

- Christina Bales, M.D.
- Allison Ballantine, M.D., M.Ed.
- Joy Collins, M.D.
- Rose Graham-Maar, M.D., M.S.C.E.
- Maria Mascarenhas, M.B.B.S.
- Mike Posencheg, M.D.
- Meryl Reichbach, M.S.W.
- Stacey Ruffin
- Brenda Waber, R.D., C.S.P., C.N.S.D., L.D.N.
- Sarah Weston, R.D.
- Sarah Weston, R.D.
- Brenda Waber, R.D., C.S.P., C.N.S.D., L.D.N.
- Maria Mascarenhas, M.B.B.S.

**Challenge**

- Established a team that neonatologists and others call for inpatient consults to advise on feeding and other matters. After the initial consult, the team visits the bedside weekly. Consults have more than doubled in two years to as many as 70 per month.
- Established an outpatient clinic. Patients visit as often as once a month, seeing a gastroenterologist, nurse, dietitian and, when needed, social worker. Previously there was no coordinated outpatient care. Now the team sees as many as 30 children per month.
- Established a database to track outcomes and facilitate research.

**With Chair’s Initiatives funding, the quality and safety of care for these fragile patients has been greatly improved.**

Gastroenterologist Christina Bales, M.D., director of the Intestinal Rehabilitation Program, with Saudeeyah, 2

Gastroenterology patient Saudeeyah is one of many children helped by the Intestinal Rehabilitation Program.
The sign on my son’s door says everyone who enters must wear a gown and mask, but some people aren’t.

“I’m a nurse, and I worry we’re not weighing patients enough and that could result in medication dosing errors.”

“Inpatient medicine is packaged without instructions, and sometimes families take it home at discharge — is that OK?”

At any hospital, there are concerns that patients, families, and even staff are hesitant to voice. Finding and addressing these concerns is crucial to keeping patients safe. But it can be hard to speak up when you are afraid you’re the only one who is concerned or you’re worried how someone may react.

CHOP aims to be the safest pediatric hospital in the nation by 2015. Central to this goal is an effort to create a culture where people feel comfortable voicing concerns. One of the initiatives put in place to help foster communication is Unit-based Patient Safety Walk-rounds. Walk-rounds provide a safe venue for speaking up about concerns as well as sharing best practices for safety. One or two times per month, teams of nurses, physicians and others walk their units, talking to staff and families and collecting information on topics such as, “If you could fix one thing on our unit to make it a safer place for patients, what would it be?”

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Unit-based Patient Safety Walk-rounds were first piloted in CHOP’s Emergency Department. The Chair’s Initiative grant provided funding to expand Unit-based Patient Safety Walk-rounds to other units.
Walk-rounds brought to light numerous issues. A few examples of resulting changes:

- Staff received education on compliance with “precautions” protocols requiring masks, gowns and other measures when entering rooms of patients at risk for infections.
- Hospital-wide education was developed on importance of weighing patients regularly.
- Families may no longer take home medicines from their stay. New workflows among pharmacists, physicians and nurses help ensure every family has prescriptions at discharge so no child goes without the medicine he or she needs.

Multi-disciplinary anaphylaxis simulations were developed to help staff care for patients with allergies and other adverse reactions.

Safety walk-rounds are now in 10 of the Hospital’s 15 units.

More than 500 employees have served on walk-rounds teams, including nurses, doctors, environmental services employees, clerks, social workers and more.

A poster explaining the benefits of walk-rounds was presented at National Patient Safety Foundation Patient Safety Congress and Institute for Healthcare Improvement National Forum.

Safety walk-rounds have become an integral tool for identifying safety issues and have helped change the culture to one where people feel more comfortable speaking up.

“Patient safety walk-rounds created a venue for our unit to identify and discuss safety concerns as well as start working on solutions.”

– Jessica Hills, M.D., medical director, Medical Hospitalist Team

(from left) Jessica Hills, M.D., Jackie Ravenell, senior nursing aid, and Kathy Alessandroni, R.N., talk to 5-year-old Ethan and his dad during safety walk-rounds.

Access Nurse Advisor and Care Coordination
Nursing roles, systems and tools are created to support patients, families and providers in coordinating both access and care.

ADHD in Primary Care
A team creates computer tools, conferences and other supports to help primary care pediatricians learn and manage patients with attention deficit hyperactivity disorder.

Automated Appointment Reminders
A computerized system is implemented to place standardized reminder calls across specialties to help families remember appointments and support continuity of care.

Center for Bone Health
A team provides specialized care for children with poor bone health and helps establish international care guidelines.

Center for Pediatric Eosinophilic Disorders
A team provides specialized care for rare allergic disorders, attracting patients from across the United States and becoming a model for other hospitals.

Database Development
A team develops databases and Web-based applications to support physicians in research and care.

Multidisciplinary Cancer Survivorship Program
A team creates a monthly clinic where cancer survivors see oncologists, endocrinologists, cardiologists and other specialists, resulting in better care coordination for their many needs.

Office of Fellowship Programs
A team coordinates and streamlines application, evaluation, curriculum development and accreditation processes for all fellowship programs in the Department of Pediatrics.

Pediatric Knowledgebase
A team creates a Web-based application that combines data about drugs with data about individual patients to help improve outcomes.

Sudden Cardiac Death Prevention
A cardiologist and staff provide screenings for undiagnosed heart irregularities in children and teens, and training in CPR and automated external defibrillator use for schools.

Round 3 (2011–2013)

A Shared Decision-making Portal for Pediatric Chronic Illness
For conditions such as asthma, communication between families and clinicians about goals, concerns, and the child's condition and progress is key. This team is creating a computer portal where both sides can share information, track progress and make decisions about care.

Assuring Quality and Safety at CHOP Community Pediatric Programs
The CHOP Care Network includes affiliations with numerous local hospitals. This team is designing and implementing a quality monitoring system to ensure that all CHOP-affiliated sites offer the same quality of care.

Improving Hospital Care for and Service Delivery to Individuals with Autism Spectrum Disorders
Children with autism have different reactions to care and require different approaches. This team is piloting strategies for promoting patient comfort and minimizing safety concerns during routine procedures such as sedation before a CT scan.

Minds Matter: Improving Pediatric Concussion Management
Early recognition of concussion signs and symptoms and early implementation of cognitive and physical rest are key to management of acute concussion. This team is analyzing current practice across the institution and recommending improvements in primary care, emergency care, sports medicine, trauma and other areas.

Reducing the Incidence of Outpatient CLABSIs (Central Line Associated Bloodstream Infections)
Long-term IV lines called central lines, used to give patients medication and nutrients, bring increased risk of dangerous bloodstream infections. This team is working to translate safety improvements CHOP has made on the inpatient side into the outpatient realm.

Transitioning from Pediatric to Adult Services: A Primary Care Based Model
Good primary care doctors are important to young adults with complicated healthcare needs, but many don't make it a priority to find one after they outgrow their pediatrician. This team is designing tools to help patients find and maintain primary care providers.

A Model for Other Hospitals:
Alison Marx, April Taylor and Jane Lavelle, M.D., gave a presentation on the value of the Chair's Initiatives, “Initiating Improvement: Quality and Patient Safety,” at the National Association of Children's Hospitals and Related Institutions' Creating Connections Conference in March 2010 in San Diego.

The Chair’s Initiatives Committee includes:
Sara Barton, Tiruayer Battle, Laura Bedrossian, Brandon Calderon, Maryann Chikatowsky, Lisa Guglielmi, Debbie Guha, Alison Marx, Kathy Shaw, Anna Spraycar, April Taylor and Thomas Yates.
The Chair’s Initiatives program funds physicians, nurses, computer specialists and others who focus their knowledge and team-building skills on an area for improvement at Children’s Hospital.

The program represents an excellent opportunity for donors interested in helping incredibly bright, motivated teams quickly bring change that truly benefits patients and families. For more information about how you can make a gift, call The Children’s Hospital of Philadelphia Foundation at 267-426-5332 or visit GiftsofChildhood.org.

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Founded in 1855, The Children’s Hospital of Philadelphia is the birthplace of pediatric medicine in America. Throughout its history, a passionate spirit of innovation has driven this renowned institution to pursue scientific discovery, establish the highest standards of patient care and train future leaders in pediatrics. For a century and a half, Children’s Hospital has served as a haven of hope for children and families worldwide.

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