Profiles of High-Performing Patient- and Family-Centered Academic Medical Centers

University of Pittsburgh Medical Center
Pittsburgh, Pennsylvania

prepared for
Picker Institute

by
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About the Profiles

This profile is one in a series of six case study reports funded by The Picker Institute that document examples of how academic medical centers can achieve high levels of patient- and family-centered care (PFCC). Because academic medical centers face particular challenges of balancing patient care with their teaching and research missions, lessons learned through case studies of centers that have successfully implemented patient- and family- centered care can benefit other academic as well as non-academic health care systems.

The six centers were selected for study on the basis of several criteria, including a mix of geographic location, safety and non-safety net hospitals, expert opinion on high-performing centers, actual performance on available metrics such as H-CAHPS scores, and varied approaches to achieving patient- and family-centered care documented in previous studies. Data were collected primarily through site visits to each center that included a tour of facilities and detailed interviews with senior leadership, board members, medical department chiefs, key staff responsible for patient- and family-centered programs and initiatives, front line staff, and patient and family advisory council members. Extensive documentation was gathered before, during, and after the site visits to supplement the information and perspectives obtained through interviews.

The profiles resulting from these case studies are each organized according to a common set of topics that emerged as cross-cutting themes common to successful implementation of patient- and family-centered care in these organizations. Each individual profile is designed to provide real-world, operational examples of how these core elements of patient- and family-centered care are brought to life in practice. Samples of available documents and tools related to these core elements are provided as attachments. A separate summary analysis of key factors contributing to patient- and family-centered care across all six centers also will be compiled and made available as part of this project.

List of Academic Medical Centers Profiled

- Harborview Medical Center (Seattle, Washington)
- Medical College of Georgia (Augusta, Georgia)
- State University of New York (SUNY) Upstate (Syracuse, New York)
- University of Colorado Hospital (Aurora, Colorado)
- University of Pittsburgh Medical Center (Pittsburgh, Pennsylvania)
- Vanderbilt Medical Center (Nashville, Tennessee)
UPMC Profile at a Glance

The University of Pittsburgh Medical Center (UPMC) is a large, integrated health care system comprising 20 hospitals and 400 ambulatory sites in Western Pennsylvania. Ranked as one of “America’s Best Hospitals” by U.S. News & World Report, UPMC has a long tradition of excellence in clinical care, education, and biomedical and health services research. As the region’s largest employer, UPMC is the dominant provider of health care services to Pittsburgh residents and exerts significant economic influence in the area. Its size, financial stability, and research strength have contributed to a growing line of biomedical products and services nationally and abroad.

The UPMC culture of innovation and entrepreneurial activity has provided a fertile environment for the development and spread of PFCC at multiple levels throughout the system. At the grass roots level, the evolution of PFCC has been guided by the passionate commitment of Anthony M. (Tony) DiGioia III, MD, a practicing orthopaedic surgeon who heads the Orthopaedics Program at Magee-Womens Hospital of UPMC. Drawing from his early training in engineering, Dr. DiGioia has developed a specific model of implementing PFCC focused on organizing hospital resources and processes "around the needs of patients and families rather than around the various specialized departments."

At the system level, senior leaders including Elizabeth Concordia, UPMC Executive Vice President, support multiple approaches for reaching the corporate vision of providing "the right care, at the right time, the right way, every time". The focus of Dr. DiGioia on developing and implementing PFCC concepts at the grass roots level is seen as one of many approaches within this broader vision of improving quality and patient care at the UPMC system level. An important system-wide resource for PFCC projects and other patient-centered initiatives is the Center for Quality Improvement and Innovation. The Center is a corporate level operation providing leadership, education, and support infrastructure to increase the pace of quality improvement and the dissemination of best practices throughout the health system.

The PFCC methodology promoted by Dr. DiGioia consists of several steps, starting with the selection of a care experience, followed by the creation of a PFCC care experience guiding council including a clinical leader as well as a senior administrative leader. The next step consists of a systematic assessment of current processes to identify gaps in the patient and family experience and opportunities for improvement. The data gathering and analysis steps employ several innovative tools, including a patient/family shadowing and mentor process that maps the entire patient experience from beginning to end. The shadowing results are combined with time studies, patient and staff surveys, focus group input, and other data to prioritize problems. A project working group is then assembled according to the patient and family flow map. Working group members include representatives from any service area or person that comes in contact with a
patient or family member. This group becomes the "creative problem solving engine" that derives its shared vision by collectively writing a story of the ideal patient and family experience through the eyes of the patient. The working group meets weekly as a whole and more often in subgroups to target problems, test solutions, evaluate results, revise solutions as needed, and test again. The PFCC methodology is critical to establishing a continuous cycle of learning and innovation aimed at redesigning processes to improve the patient and family experience.

The PFCC methodology was successfully piloted in the Magee orthopaedics program and is now being "exported" to other units and hospitals in the UPMC system. Senior leadership at the system level support Dr. DiGioia in his efforts and work with him to strategically select units and hospitals that are especially ready for or in need of PFCC adoption. Examples of such "beta" sites are the Trauma Unit and the Day of Surgery Department at UPMC Presbyterian Hospital. Both units have implemented the PFCC methods with dramatic results in improving the patient and family experience, as measured through surveys, and increasing organizational efficiencies, such as reducing hospital length of stay or wait times in the operating room. The Innovation Center established by Dr. DiGioia at Magee-Womens now serves as the "epicenter" of PFCC and the incubator of new tools and strategies for supporting the spread of PFCC projects throughout the UPMC system.

According to Dr. DiGioia, the PFCC methodology is an evolving method built on the theory of "disruptive innovation", popularized by the Harvard management guru, Clayton Christensen. Although top leaders must be involved and supportive, the real work of change is by its nature disruptive and at times rebellious; for change to occur, staff at the grass roots level must be given the latitude to innovate and empowered to make change happen.

At UPMC there is a conscious effort to keep the design and implementation of PFCC projects decentralized. According to Ketul Patel, VP of Operations at Magee-Womens Hospital, "people support what they help to create". Like most disruptive innovations, PFCC is most easily applied in start-up environments, such as Dr. DiGioia’s "hospital within a hospital" experiment with the Orthopaedic Program at Magee. However, by planting enough strategically placed initiatives that show success, they may begin to coalesce over time into a larger institutional and cultural change. Success will breed further success as those observing the benefits of change through PFCC begin to emulate the process. With continued leadership support at the highest levels, the "passion for innovation" at UPMC is likely to lead to further expansion of PFCC concepts throughout the system.
Background on UPMC

The University of Pittsburgh Medical Center (UPMC) is a large, integrated health system and academic medical center headquartered in Pittsburgh, Pennsylvania. The UPMC system comprises 20 tertiary, specialty, and community hospitals, 400 outpatient sites and doctors’ offices, and retirement and long-term care facilities. Its affiliated UPMC Health Plan has nearly 1.3 million enrollees across a range of commercial, Medicare, SCHIP, and Medical Assistance products. As the region’s largest employer, UPMC has 50,000 employees and more than $7 billion in revenue.

UPMC is ranked among the 19 hospitals recognized by U.S. News & World Report as “America’s Best Hospitals” in 2008. Its mission is "to provide outstanding patient care to shape tomorrow’s health system through clinical innovation, biomedical and health services research, and education.” Innovation is a central and recurring theme at UPMC, and has influenced a significant investment in information technology to link and integrate electronic medical records across its multiple hospitals and care settings. The UPMC "passion for innovation" also infuses its clinical care, research, and business enterprise development.

Because of its size and dominant presence in Western Pennsylvania, UPMC faces virtually no competition from other health care providers and has become a source of economic growth and stability for the region. The system has enjoyed positive operating margins for over 20 years, and has used its strong financial health to leverage new business and product lines focused on biotechnology. It is a source of considerable charitable giving in the community, providing $139 million in uncompensated care for Pittsburgh’s poorest residents. It is also the one of the nation’s most active research centers, ranking 6th in NIH research funding.

Evolution of PFCC at UPMC

The evolution and spread of PFCC at UPMC has followed two major pathways that are highly synergistic with each other. The first pathway is centered at the grass roots level and follows a carefully engineered process for developing, implementing and evaluating PFCC from the bottom up. The second major pathway is located at the system level, and consists of multiple, complementary approaches to improving the quality of patient care that are supported and nurtured by senior corporate leadership. A core unifying theme common to both pathways is innovation and culture change.

The grass roots, bottom-up pathway began with the personal and professional journey of Anthony M. (Tony) DiGioia III, a practicing orthopaedic surgeon who heads the Renaissance Orthopaedics program at Magee-Womens Hospital of UPMC. Inspired by his namesake father, an award-winning CEO of a prestigious Pittsburgh engineering firm, Dr. DiGioia received his undergraduate and master’s training in engineering, but
after a broken knee injury decided to apply his engineering education to a medical
career focused on innovative approaches to treating bone and joint conditions. With a
medical degree from Harvard, he completed his internship and residency at UPMC.
Following his early work in orthopaedics at several local hospitals, he arrived at Magee-
Womens Hospital of UPMC in 2006, where he was given the opportunity to freely
pursue his vision of focusing on the entire patient experience in the treatment of bone
and joint conditions.

Later sections of this profile focus on Dr. Di Gioia’s efforts to pioneer his approach to
PFCC in the Orthopaedic Program and subsequently to export this successful model to
other departments and services at UOMC. The following section examines the second
major pathway for PFCC at UPMC, which is found at the system level and includes the
various initiatives of senior leadership that interact with and support the grass roots
level efforts in the context of the overall UPMC approach to quality and innovation.

**Leadership and Organizational Support**

At the system level, senior leaders support many approaches for reaching the UPMC
vision of providing "the right care, at the right time, the right way, every time". The
focus of Dr. Di Gioia on developing and implementing PFCC concepts at the grass roots
level is seen as one of multiple approaches within a broader vision of improving the
quality and experience of patient care throughout the UPMC system. There is no single
solution but rather many paths to the same goal, all supported by top leadership.

**Senior Leader Commitment**

Elizabeth Concordia, UPMC Executive Vice President, who oversees all hospital
operations, meets one-on-one with Dr. Di Gioia on a regular basis to review progress and
to identify opportunities for expanding his PFCC methods to other areas of the
organization. Criteria for selecting a new unit or program include clear evidence of
need, the presence of stable leadership, and at least one physician champion who can
provide the role modeling and credibility needed to bring other physicians along.
According to Ms. Concordia, "all the stars need to be lined up" for a successful PFCC
initiative. An example, discussed later, is the effort to introduce PFCC into the Level I
Trauma Unit at UPMC Presbyterian Shadyside. In this case, the need for improving the
experience of trauma patients and their families was clearly identified, a physician and
nurse leader were ready to lead the effort, and the Trauma Unit staff was highly
motivated to change the design of operations. Ms. Concordia believes that a big success
in an area such as trauma care will lead to success in other areas and promote
sustainability throughout the organization.

The leadership at UPMC supports individual PFCC projects by making financial
resources readily available as well as through their personal participation in project
working groups. Each PFCC working group is given authority to spend up to $10K for whatever purpose they decide without any further administrative review. Although most PFCC projects are not resource-intensive, and groups tend to be conservative in their use of these funds, having access to these pre-approved funds is empowering to the groups and confers further legitimacy on their efforts. Equally important is the personal involvement of key leaders in the working group process. For example, Leslie Davis, the CEO of Magee-Womens Hospital, regularly participates in the Orthopaedic Program’s PFCC working group. Similarly, Jim Terwilliger, VP of Operations at UPMC Presbyterian Shadyside, is a regular and active participant in that hospital’s Day of Surgery PFCC working group (discussed later). Even Ms. Concordia makes a point of periodically attending some of the PFCC working group meetings, and was herself the originator of the “Ask Once” initiative, aimed at redesigning the patient experience with ambulatory appointments and inpatient admissions so that the patient is asked only once for patient-specific information.

Center for Quality Improvement and Innovation

An important system-wide resource for PFCC projects and other patient-centered initiatives is the UPMC Center for Quality Improvement and Innovation. The Center is a corporate level operation designed to provide “quality improvement leadership, education, and support infrastructure to health care professionals across the system, in pursuit of excellence in care delivery.” The Center’s core mission is to help ensure that UPMC provides the best possible patient care by increasing the pace of improvements in quality and disseminating best practices throughout the health system.

The Center is led by Tami Merryman, Chief Quality Officer at UPMC, and David Sharbaugh, the Center’s Senior Director. As a former CNO at UPMC Shadyside, Ms. Merryman brings years of practical hospital experience to her current role in stimulating innovative approaches to quality improvement throughout the system. She and Mr. Sharbaugh share a belief that successful improvements must be guided by principles of simplicity, common sense, and taking things away that get in the way of good process. The idea of “taking things away” is likened to “lessening the tool belt” to reduce unnecessary clutter or burden on patients and caregivers alike. For example, while information technology can be a useful tool, in general the electronic medical record has not yet achieved its full promise because the fundamental work flow has not been addressed. The Center is thus focused on efforts to simplify and improve the underlying work processes of nurses, staff, and physicians, all aimed at “doing what’s right for the patient.”

One example of a successful, simplified process improvement is the "Condition H" program. Condition H (where the “H” stands for “help”) is a rapid response program that enables the patient or a family member to call for immediate assistance when they notice a clinically significant condition or event that is not being addressed by the care
team. Inspired by the case of a woman in an east coast hospital that lost her 18-month old daughter as the result of breakdowns in hospital communication, Ms. Merryman initiated the Condition H program as a means of empowering patients and families to focus medical attention quickly on potential problems. Traditionally, condition codes are designed to be activated by health care professionals. Condition H broadens the concept by including patients and visitors as part of the care team by alerting caregivers to clinical changes.

The Center for Quality Improvement and Innovation provides expertise and leadership to support other initiatives for improving care delivery processes, such as the “patient-controlled liberalized diet” that gives patients control of food choices while in the hospital and access to nutritional education, and patient flow improvement efforts aimed at increasing the efficiency and timeliness of patients’ progress through emergency departments, inpatient units, operating rooms, and procedural areas of UPMC on their way to transfer or discharge. The Center also sponsors system-wide educational events and learning communities, as well as a special intranet website providing information regarding quality events, innovations across the system, and access to quality dashboards with performance metrics.

**The Orthopaedic Program at Magee-Womens Hospital**

The Orthopaedic Program at Magee-Womens Hospital is housed within a state-of-the-art facility where Dr. DiGioia and his staff provide the complete continuum of care, from diagnosis to surgery to inpatient recovery and rehabilitation to ongoing patient education and support. The entire program is guided by a philosophy of care that puts the patient first and continuously strives to develop innovations in surgical and medical techniques that result in value from the patient’s perspective. This philosophy has been informed to a large extent by Dr. DiGioia’s background in engineering, which he says, “teaches you how to solve problems…engineers always look at the whole picture, the whole process.” At Magee-Womens, Dr. DiGioia was able to design the program from the bottom up, as a “hospital within a hospital”, rather than being forced to fit his approach to PFCC to existing hospital systems and routines.

The program is directed by Gigi Conti-Crowley, Dr. DiGioia’s nurse and clinical partner for over 20 years, who leads a specialized care team of nurses, technicians, and data analysts supporting Dr. DiGioia. The program features an efficient, one-stop pre-operative visit scheduled approximately 3 weeks before surgery. The streamlined pre-test, which takes less than 2 hours to complete, includes all necessary clinical testing and screening, peri-operative education, discharge planning with a social worker, and the opportunity to meet with other patients and families that will be having surgery at the same time. A coach is also selected at this time, who is a family member or friend that will help with postsurgical recovery and rehabilitation, and function as a single point of communication for the patient and care team. The entire pre and post surgery process is
built around the patient’s needs, and emphasizes a team approach among patients, caregivers, and staff. The physical environment of the inpatient unit reinforces the user-friendly philosophy of the program, incorporating a home-like atmosphere in patient rooms and common areas, and featuring state-of-the-art gym and fitness facilities and other amenities. (See Appendix G for photos)

A working group with representation of all personnel that influence the patient care experience meets weekly to review performance metrics and identify opportunities for improvement. Metrics include patient satisfaction, clinical outcomes, and organizational efficiencies. In 2007, the program completed over 500 knee surgeries with an average length of stay (ALOS) of 2.8 days (compared to the national rate of 3.9 days) and over 300 hip replacements with an ALOS of 2.6 (compared to 5.0 nationally). Over 96% of patients were discharged directly to their homes, compared to national rates under 30%. Patient experience as measured by the CAHPS Hospital Survey (H-CAHPS) ranks in the upper percentiles for most areas (see Appendix B). These and other metrics, such as infection rates and pain measures, are used to inform rapid-cycle improvement projects that encourage a culture of change and promote risk-taking in devising improved processes.

In addition to the working group’s routine review of performance, a Patient and Family Advisory Council (PFAC) composed of patients, family members, staff and physicians meets monthly to discuss ways of improving the patient and family experience throughout the entire Orthopaedic Program. The PFAC has provided guidance on such issues as the design of public and family space and patient education materials. Other projects include a newsletter, weblog for current and former patients, and "words of inspiration" cards for future patients. An annual patient reunion is held at various locations around Pittsburgh as an informal get-together for the program’s patients to renew contacts and celebrate their successes.

The success of the Orthopaedic Program at Magee-Womens Hospital led Dr. DiGioia to establish the Innovation Center as a vehicle for expanding PFCC concepts to other programs and departments at Magee and to other hospitals within the UPMC system. The organization, methodology and projects of the Innovation Center are described in a later section.

**The Innovation Center and PFCC Methodology**

From its beginnings in the Orthopaedic Program at Magee Womens Hospital, the PFCC approach pioneered by Dr. DiGioia has evolved to become the focus of its own Innovation Center which now serves as the "epicenter" of PFCC and the incubator of new tools and strategies for supporting the spread of PFCC projects throughout the UPMC system. The Innovation Center (IC) consists of 11 full-time staff, including Stephen DiGioia, Director of Technology Development; Patty Embree, Senior Director
of PFCC Project Management; Branko Jaramaz, Senior Director of Simulation and Interactive Media; and Nick Vizzoca, Director of Facility Design and Research. Dr. DiGioia serves as the center’s medical director. The IC is structured as a business unit of Magee-Womens Hospital, and is accountable to Ketul Patel, VP of Operations.

The Innovation Center works closely with the Orthopaedic Program, other clinical departments at Magee, and increasingly with other UPMC hospitals, as well as the Center for Clinical Quality and Innovation, to “export” the PFCC methodology to strategically selected units, based on the criteria noted earlier. The Innovation Center describes itself as an applied research center focused on “merging the art and science of performance in health care while utilizing a PFCC methodology.” The Center facilitates and supports PFCC working groups modeled after the successful Orthopaedic Program at Magee, and has developed numerous "low technology" tools, often adapted from other industries, intended to help measure and then re-engineer the patient care experience "so that...hospital resources and personnel are organized around the needs of the patients and families rather than around the various specialized departments.”

**PFCC Project Methodology**

According to a "how-to" guidebook developed by the Innovation Center, PFCC “is a methodology and system approach to designing for the exceptional patient experience.” With a focus on putting the needs of patients and families first, instead of professionals, guiding principles for implementing PFCC include:

- Look at everything through the eyes of your patients and families
- Seek low tech solutions, simplify and streamline processes to eliminate unnecessary complexity
- Move services to the patient and not the other way around
- Minimize hand-offs inside and outside the hospital
- Have the right level of staff expertise matched to do the right level of job
- Empower staff to support accountability at lower levels and ideally at the point of care
- Develop metrics to measure how you are doing
- Try solutions, implement, evaluate and try again
- Don’t be afraid to fail – you will learn from the experience

Based on these principles, the IC has developed the following six steps for carrying out a PFCC project:

**Step 1: Select a Care Experience**

The first step is to select a specific care experience that is strategically ready for and/or amenable to a PFCC intervention project.
Step 2: Establish a PFCC Care Experience Guiding Council

The guiding council should include a PFCC clinical leader as well as a senior administrative leader at the VP or COO level to serve as champions for the project.

Step 3: Assessment of Current State and Identification of Improvement Opportunities

This step involves a careful mapping of the patient and family experience and flow from the beginning to the end of the selected cycle of care. The IC has developed a unique Patient and Family Shadowing (PFS) process to map the entire patient experience from the first to the last step. The shadow process is often conducted by IC student interns, called PFS mentors, who walk through the experience with the patient, and observe and document every step of the way. The mentors observe and document everything the patient encounters, including signage, directions, staff interactions, care processes, etc. The mentors use flow maps, time studies, and observational data collected from the patients, family members, and staff to develop a detailed report. The report becomes the basis for prioritizing improvement opportunities to be addressed by the PFCC working group. The assessment step should also draw on a variety of other possible tools to gather data to identify gaps in the patient experience, such as patient surveys, staff surveys and interviews, patient and family focus groups, patient and family journals, document collection and review, flow and time studies, input from Patient and Family Advisory Councils, etc.

Step 4: Develop a PFCC Working Group

The working group should be assembled according to the patient and family flow map. Representatives should be included from any service area or person that comes in contact with a patient or family member. This group becomes the "creative problem solving engine."

Step 5: Create a Shared Vision by Writing a Story of the Ideal PFCC Experience

One of the most powerful ways to unite the leaders and members of the working group in a shared vision of their goals is to jointly write a story that describes the ideal patient and family care experience from the point of view of the patient. The more detailed and explicit the story, the more effective it will be in identifying aspects that need to be changed, with possible solutions.

Step 6: Weekly Work Group Meetings

The work group should meet every week and include the PFCC Leadership Team. Meetings are designed to review progress in targeting problems, testing solutions, evaluating results, revising solutions as needed, and testing again. It is critical to
establish a cycle of learning and innovation without fear of failure in order to change the culture.

**Example PFCC Projects**

Based on the "flagship" experience with the Orthopaedic Program at Magee-Womens Hospital, the PFCC project methodology has been successfully exported to other hospitals and departments. Examples of two of these projects are briefly summarized below.

**Day of Surgery at UPMC Presbyterian**

The Day of Surgery (DOS) Department at UPMC Presbyterian established a PFCC working group in early 2006. The core leadership of the group, still ongoing, includes Suzanne Rocks, RN as the designated PFCC champion, James Terwilliger, VP of Operations, and Dr. DiGioia as the group facilitator. Members of the working group comprise nearly 40 individuals that in some way touch the patient and family same-day surgery experience, including surgeons, nurses, and representatives from patient relations, purchasing, parking and security, finance, quality improvement, human resources, scheduling, facilities planning, anesthesia, pharmacy, operating room, transportation, and corporate communications.

Using the Patient and Family Shadowing (PFS) process, a detailed mapping of the patient experience led to several important process and facility changes. In Phase I, the group created a new patient information packet, including a printed brochure and DVD, to provide consistent and up-to-date information to patients on what they can expect on the day of their surgery. Another subgroup redesigned signage and wayfinding, directing patients to a dedicated parking garage adjacent to the surgical center, extending parking attendant hours, and adding valet parking. The entry way was improved with the addition of Pittsburgh art themes, and the waiting area was transformed to create a family-friendly, comfortable environment that is more responsive to the emotional needs of patients and families. (See Appendix D for photos)

Phase II of the DOS working group included a subgroup that developed concierge and navigator services such as online directions and maps for patients coming to the hospital, an improved paging system for patients in the family lounge, and a new display screen to help family and friends keep track of the patient’s progress on the day of surgery. Another subgroup redesigned the preoperative testing experience conducted at various UPMC sites to provide patients with a clear "itinerary" of the process and to improve the efficiency of the visit. Phase III of the PFCC working group for DOS includes projects to improve operating room scheduling, the process of moving into the holding area prior to surgery, and the discharge experience.
Based on pre- and post-surveys of patients, the PFCC projects to improve the Day of Surgery experience have had dramatic positive results. There was an overall 12% increase in “excellent” responses across 20 categories of questions. As shown in Appendix C, patient ratings of their holding area experience, nursing care, information received during their stay improved by over 20%. Staff satisfaction with the process has also been high, as reflected in the following comments:

- “We felt empowered to accomplish almost anything.”
- “It’s amazing what we have accomplished in only eight short months.”
- “Meeting weekly keeps the drive and momentum of the group going.”
- “We have made a real difference in the patient and family experience.”
- “This cross functional team has helped me to build relationships across the organizational structure which has aided in my day-to-day operations as a director.”

Examples of working group project tracking notes are included in Appendix E.

**Level I Trauma Experience at UPMC Presbyterian**

The PFCC working group on the Trauma Experience at UPMC Presbyterian began meeting in January 2008. PFCC champions of this group include Dr. David Bertoty, Clinical Director of Emergency and Trauma Services, and Dierdre Nicholas, Trauma Nurse Coordinator. Dr. DiGioia and staff of the Innovation Center help facilitate the group, which includes a very large number of representatives from all areas affecting the trauma patient experience, similar to the DOS workgroup, from attending physicians and nurses to social service coordinators, case managers, pain service technicians, radiologists, physical therapists, OR personnel, security, and referral specialists. The PFS shadowing process and patient flow mapping identified numerous opportunities for improvement, starting from the initial call in the field to the point of the patient’s discharge. The workgroup currently has about 10 active projects underway, each coordinated by its own subgroup. All of the subgroup members meet every week to review their progress and celebrate their successes.

One notable first project of this group focused on decreasing the amount of time a patient must have a cervical collar in place. Over 90 percent of trauma patients are automatically placed in a cervical collar to prevent possible neck and spinal injury. The mapping and shadowing process showed that the clearance process for removing the collar could take up to 40 hours. After applying the PFCC model, which involved meetings between the Trauma team and Radiology representatives, a new process was developed for identifying “priority C-spine reads” that resulted in a decrease in cervical spine clearance to an average of only 12 hours. The decrease in time for clearing the cervical spine and removing the collar has improved the patient experience and increased efficiencies in care delivery.
Other projects stemming from the shadowing and patient flow mapping process include improving signage and "what to expect" information for family entering the Trauma Center, a Trauma Liaison position to coordinate family members reuniting with patients, comfort and information bags for families of trauma patients, family support groups for ICU patients, new bags for identifying and handling patient belongings, improved amenities in family lounges, and a total redesign of the discharge experience to improve communications and coordination. An overarching project has been to create a narrative description of the "ideal patient and family experience" with UPMC Trauma Services to serve as a vision of a redesigned care process aimed at optimizing the experience from the patient and family perspective. (See Appendix F for sample patient flow diagrams)

**Additional PFCC Projects and Working Groups**

The PFCC methodology has been applied to other departments and service lines at UPMC, following many of the same techniques and tools described in the above examples. The Bariatric Program at Magee-Womens initiated a patient and shadowing process in 2007 and is currently working on the design of the ideal patient experience. Similarly, the Breast Cancer Program at Magee has used shadowing to improve patient flow and decrease waiting time in radiology. Other PFCC projects are underway in the Labor and Delivery Unit and more generally throughout the hospital to address wayfinding improvements. At the corporate level, the UPMC Human Resources Department is using PFCC tools such as shadowing to identify ways of improving the new staff orientation experience for the 5,000 new employees it hires each year. The wide diversity of applications suggests the flexibility and adaptability of the PFCC methodology to a variety of needs and situations.

**PFCC Education and Dissemination**

The expansion of the PFCC model within and beyond the UPMC system is supported by the work of the AMD3 Foundation, a non-profit organization established by Dr. DiGioia in 2003. The mission of the AMD3 Foundation is to promote education, research and other related charitable activities in patient and family centered care while advancing the art and science of performance in order to improve the delivery of care. Under the direction of Alana Kulesa and a small staff, the foundation sponsors three major educational programs:

**Bone and Joint Health Series**

This series provides continuing education for patients and families on the treatment and prevention of bone disease, including updates on the latest products and services. Participants hear presentations on bone and joint health and have their questions
answered directly by experts. The goal is to improve communication and knowledge so that patients and their physicians together can make informed choices regarding disease treatment and maintenance. The series is held four times each year, with two held on campus in the auditorium of Magee-Womens Hospital and two in the Pittsburgh area suburbs to make them accessible to where patients live. Attendance ranges from 125 to 200 patients at each session.

**PFCC Workshop Series**

The Patient and Family Centered Care Workshop Series is designed for all medical professionals that have the potential to affect the patient’s care experience. Two sessions are offered each year, featuring lessons learned from experts in the field and from other service industries. The AMD3 Foundation supports attendees with awards to cover the cost of their participation. Continuing Medical Education (CME) credit and Nursing Contact Hours are provided to eligible participants. Past program topics include: “Lessons to be Learned from Other Service Industries: Disney and Games,” “Designing the 21st Century Hospital and the Delivery of Care: People, Processes and Facilities,” “Designing Patient and Family Centered Programs, Offices and Hospitals,” “Putting Patients First: Patient and Family Centered Collaborative Care Changing the Culture at Your Institution” and “Patient Focused Care.”

**Innovator’s Conference**

Since 2007, the AMD3 Foundation has also brought together health care professionals, business leaders, leading researchers, educators and community members at the annual Innovator’s Conference presented as part of the Patient and Family Centered Care Series to explore new ideas, new technologies, new processes and new ways of thinking. In 2007, “The Next Generation of Medical and Surgical Techniques, Technologies and Processes to Improve Health Care Delivery” featured Robert K. Crone, MD, President and CEO of Harvard Medical International and Dean for International Programs at the Harvard Medical School. Other keynotes included John W. Manzetti, president and CEO of the Pittsburgh Life Sciences Greenhouse; Richard L. Reece, MD, editor-in-chief of Physician Practice Options; and David S. Smith, attorney at Pepper Hamilton LLP.


In addition to the program series, Dr. DiGioia writes a regular blog to advance PFCC concepts and encourage dialogue and networking with patients and professionals both locally and worldwide.
Future Directions

According to Dr. DiGioia, the PFCC methodology is an evolving method built on the theory of "disruptive innovation", popularized by the Harvard management guru, Clayton Christensen. Although top leaders must be involved and supportive, the real work of change is by its nature disruptive and at times rebellious; for change to occur, staff at the grass roots level must be given the latitude to innovate and empowered to make change happen.

At UPMC there is a conscious effort to keep the design and implementation of PFCC projects decentralized. According to Ketul Patel, VP of Operations at Magee-Womens Hospital, "people support what they help to create". Like most disruptive innovations, PFCC is most easily applied in start-up environments, such as Dr. DiGioia's "hospital within a hospital" experiment with the Orthopaedic Program at Magee. However, by planting enough strategically placed initiatives that show success, they may begin to coalesce over time into a larger institutional change. Success will breed further success as those observing the benefits of change through PFCC begin to emulate the process. Dr. DiGioia's success with the Orthopaedic Program has bred "PFCC envy" among some of his professional peers who have observed the positive effects on staff, patients and overall business and clinical outcomes. With continued leadership support at the highest levels, the "passion for innovation" at UPMC is likely to lead to further expansion of PFCC concepts throughout the system.
Appendix A
List of Advisory Panel Members

- Paul Cleary, PhD, Dean of Public Health, Department of Epidemiology and Public Health, Yale School of Medicine

- Christine Crofton, PhD, CAHPS Project Officer, Agency for Healthcare Research and Quality

- Susan Edgman-Levitan, PA, Executive Director, John D. Stoeckle Center for Primary Care Innovation, Massachusetts General Hospital

- Donna Farley, PhD, Senior Health Policy Analyst, RAND

- Sir Donald Irvine, CBE, MD, FRCGP, FRCP, Chair, Picker Institute Europe (Member, Picker Institute Board and Project Oversight Committee)

- Beverley Johnson, President and CEO, Institute for Family-Centered Care

- Patricia Sodomka, Senior VP, Patient/Family Centered Care, Medical College of Georgia

- Kathy Vermoch, Project Manager, Operations Improvement, University HealthSystem Consortium

- Gail Warden, President Emeritus, Henry Ford Health System (Member, Picker Institute Board and Project Oversight Committee)
**Appendix B**

H-CAHPS Scores for Orthopaedic Program (Unit 4100) at Magee-Womens Hospital (10/1/06–9/30/07)

<table>
<thead>
<tr>
<th></th>
<th>4100 Avg</th>
<th>State Avg</th>
<th>National Avg</th>
<th>Nat'l % Rank</th>
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<tbody>
<tr>
<td>Overall Rating (% 9 &amp; 10)</td>
<td>76</td>
<td>61</td>
<td>63</td>
<td>97</td>
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<tr>
<td>Would recommend (% Definitely Yes)</td>
<td>79</td>
<td>64</td>
<td>67</td>
<td>91</td>
</tr>
<tr>
<td>Comm with Nurses (%Always)</td>
<td>82</td>
<td>73</td>
<td>73</td>
<td>98</td>
</tr>
<tr>
<td>Comm with Doctor (%Always)</td>
<td>90</td>
<td>78</td>
<td>79</td>
<td>99</td>
</tr>
<tr>
<td>Responsiveness of staff (%Always)</td>
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<td>60</td>
<td>60</td>
<td>92</td>
</tr>
<tr>
<td>Cleanliness of Rm/bath (%Always)</td>
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<td>67</td>
<td>68</td>
<td>44</td>
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<td>Quietness at night (%Always)</td>
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<td>47</td>
<td>54</td>
<td>94</td>
</tr>
<tr>
<td>Pain management (%Always)</td>
<td>71</td>
<td>67</td>
<td>67</td>
<td>68</td>
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<tr>
<td>Medicine Comm (%Always)</td>
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<td>56</td>
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<td>80</td>
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<tr>
<td>Discharge Information (%Yes)</td>
<td>93</td>
<td>79</td>
<td>79</td>
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Appendix C
Pre- and Post-Patient Survey Scores in the DOS Department (Feb 2007 compared to July 2008)

How would you rate your Healing area experience? (Where you met your anesthesiologist prior to going into the operating room):

<table>
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<th>Jul 2007</th>
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Do you feel you were kept informed during your stay? How would you rate the information you received:

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How would you rate the nursing?

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Appendix D
PFCC Portal Improvements in the Day of Surgery Department

[see separate attachment]
Appendix E
Example PFCC Project Tracking Notes (DOS Department)

[see separate attachment]
Appendix F
Example Trauma Patient Flow Diagrams

[see separate attachment]
Appendix G
Photos of the Built Environment

[see separate files for photos]