EISNER PEDIATRIC & FAMILY MEDICAL CENTER

Born Healthy:

Managing Quality in Perinatal Care Delivery Systems

Final Project Report
First 5 LA Community Opportunities Fund
September 1, 2010 – August 31, 2012

FIRST 5 LA
Champions For Our Children

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August 31, 2012

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EXECUTIVE SUMMARY

> The United States provides the world's most expensive maternity care but has worse pregnancy outcomes than almost every other industrialized country. (Rooks, 1997, p. 385)

In October 2010, Eisner Pediatric & Family Medical Center (EPFMC) launched a two-year perinatal quality management project funded by a $149,030, two-year grant from First 5 LA's Community Opportunities Fund. The project was designed to provide EPFMC with the tools, knowledge, and infrastructure needed to improve data collection, analysis, and reporting functions for pregnancy-related care and education.

Although intended primarily to support the design of HIT-enabled data management strategies and the implementation of i2iTracks (a patient management software package), the project brought a group of stakeholders into critical conversations about the role of IT in healthcare. What kinds of data must, should, and can be collected? What about utility and feasibility issues associated with data handling, storage, and retrieval? Finally, how can practitioners analyze and use data to improve practice and manage performance?

About This Report

We begin with a look at birth rates since 2007. Noting that fertility rates fell more rapidly from 2007 through 2009 than for any two-year period in more than 30 years, the resulting drop in live births reflects the perceived and actual challenges of raising children in difficult economic times: Nationally, there has been a greater than eight percent decrease in births since the all-time high of 4,316,233 in 2007.

Despite the half-decade's downward trend in birth and fertility rates, EPFMC has successfully maintained or grown its provision of high quality prenatal and maternity services. In light of the the excellent outcomes achieved and the professional recognition given its providers, consideration should be given to increasing the visibility of the Center's women-focused medical services and health education.

The balance of the report is divided into two sections.

1. Section 1, ***First 5 LA: What Happened?***, reviews the portfolio of activities and formative assessments undertaken during the two-year grant period. From logistics to learning themes to reflecting on challenges, we unpack the project start-to-finish.
2. Section 2, ***What Did We Learn?***, uses the lens of a summative evaluation to examine five critical outcomes: Low birthweight births, provision of timely and adequate prenatal care, NICU admissions, preterm births rates, and Cesarean deliveries.

All outcomes were assessed relative to local, regional, state, and national benchmarks and performance targets (if available), and, as will be seen, were met or exceeded during the grant period. As reported in previous reviews and evaluations, EPFMC continues to excel across multiple measures of both processes and outcomes.

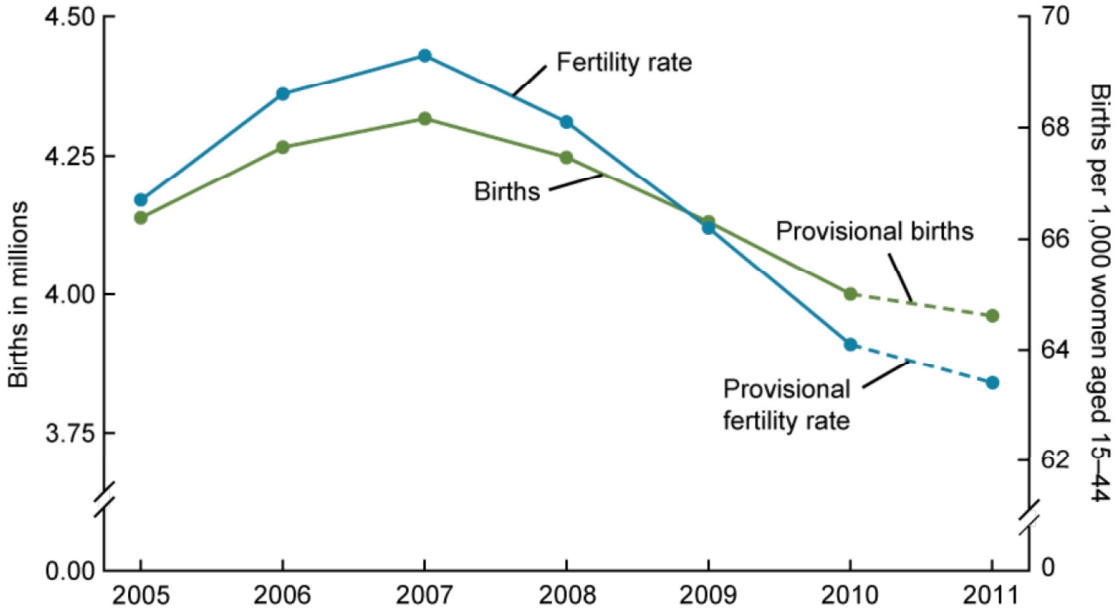
> An important indicator of the health of a population is its infant morbidity and mortality rates.
>
> *– Murata, McGlynn, Siu, & Brook, 1992, p. 1*

INTRODUCTION
Provision of Care in a Time of Falling Birth Rates

In 2011, EPFMC conducted an in-depth investigation of then-current birth rates and the agency's perinatal service delivery volume. We found that, contrary to the downward trajectory of birth rates in not only our service area but throughout the country, the Center had effectively maintained its "numbers" during the study period – 2007 through 2010.

What does the birthrate trend look like a year later? We again used UDS reports (EPFMC, California [http://bit.ly/Qy4Tso], and National [http://bit.ly/SZkNiR]), California Birth Profiles by Zip Code (http://1.usa.gov/N4gO0b), and National Vital Statistics Reports (http://1.usa.gov/isdIsv) to gain a better understanding of the agency's productivity and penetration in our primary service area.

First, the number of births in the United States in 2011 was lower than that recorded in 2010. Although the trend slowed, the rate declined a further one percent from its peak in 2007 – 8.2 percent fewer births in just four years. (Figure A).



NOTES: The number of births and fertility rate for 2011 are based on 12 months of provisional counts ending with December 2011. Rates are based on intercensal population estimates derived from the 2000 and 2010 censuses. Rates for 2005–2009 have been revised and may differ from rates previously published.
SOURCE: CDC/NCHS, National Vital Statistics System.

Figure A. Births and fertility rates: United States, final 2005-2009, preliminary 2010, and provisional 2011 (Hamilton & Sutton, 2012).

At the state level, the decline has been even more dramatic. In 2010, we reported a nearly seven percent drop in births from 2007 to 2009, a figure similar to that seen nationally. However, California birth rates fell an additional 2.8 percent in 2010 (no provisional numbers are available for 2011) – a decrease of nearly 10 percent in four years, illustrated in Figure B.

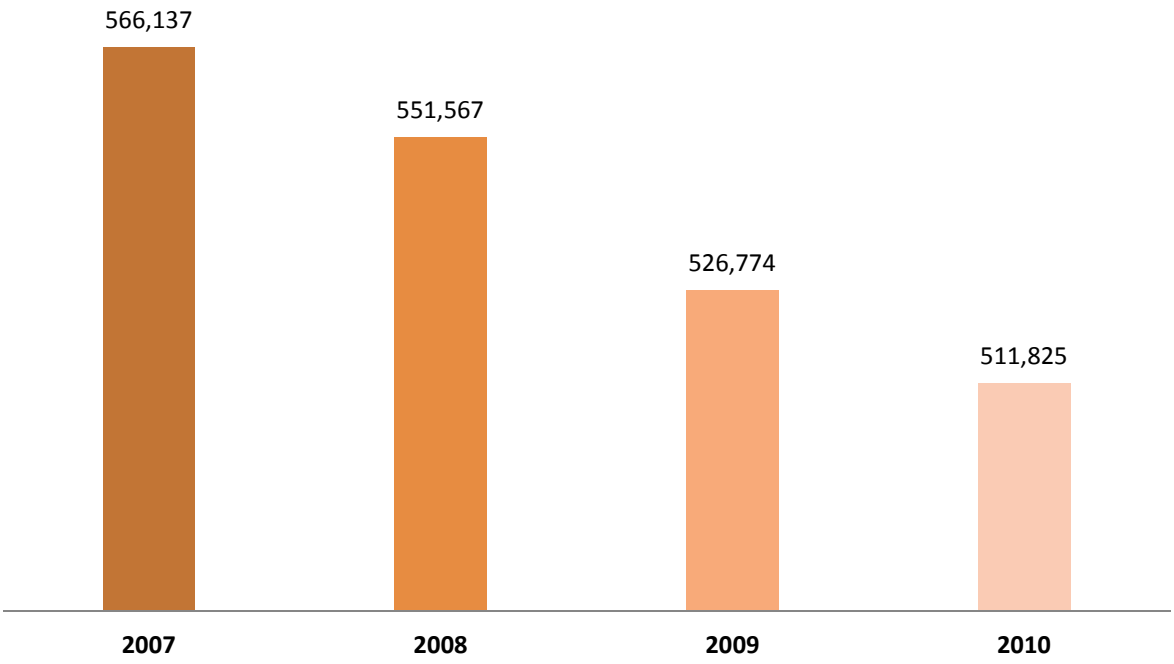


Figure B. Total California Births, 2007-2010

Focusing next on EPFMC's primary service area (defined for this analysis as the self-reported home zip codes for 80 percent of the agency's clients), we see that in 2010 (most recent data available), there were nearly 2,000 fewer babies born in those 24 neighborhoods than in 2009. Overall, the area has seen four consecutive years of decline – 13 percent since the high of 24,686 in 2007 (Figure C).

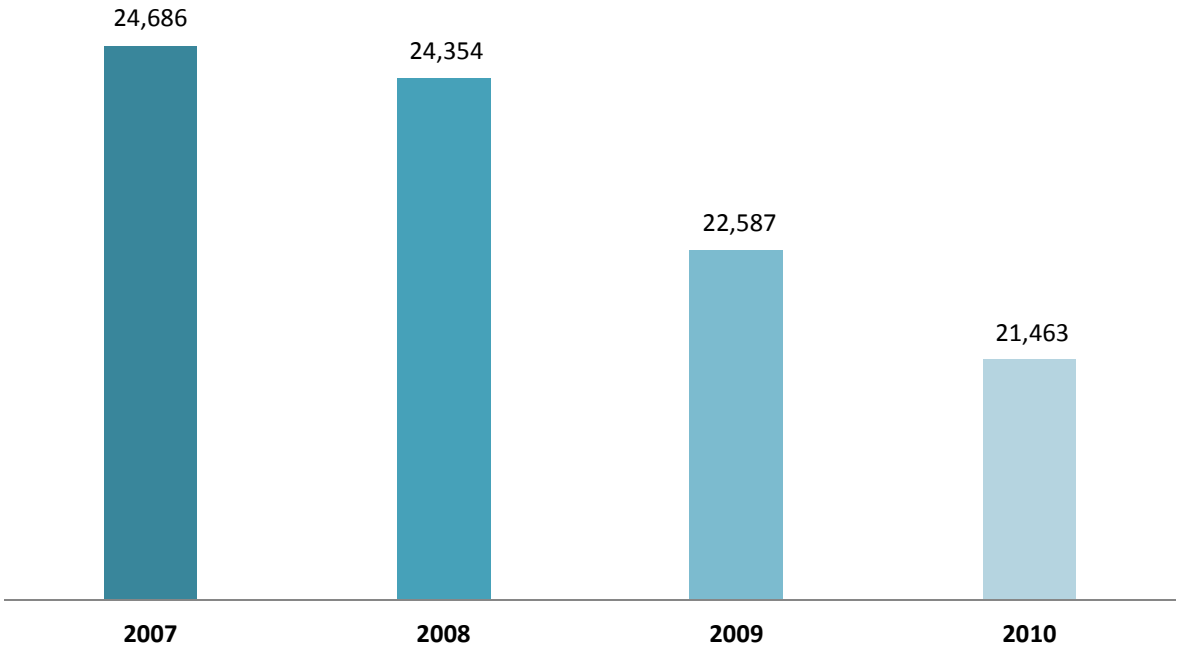
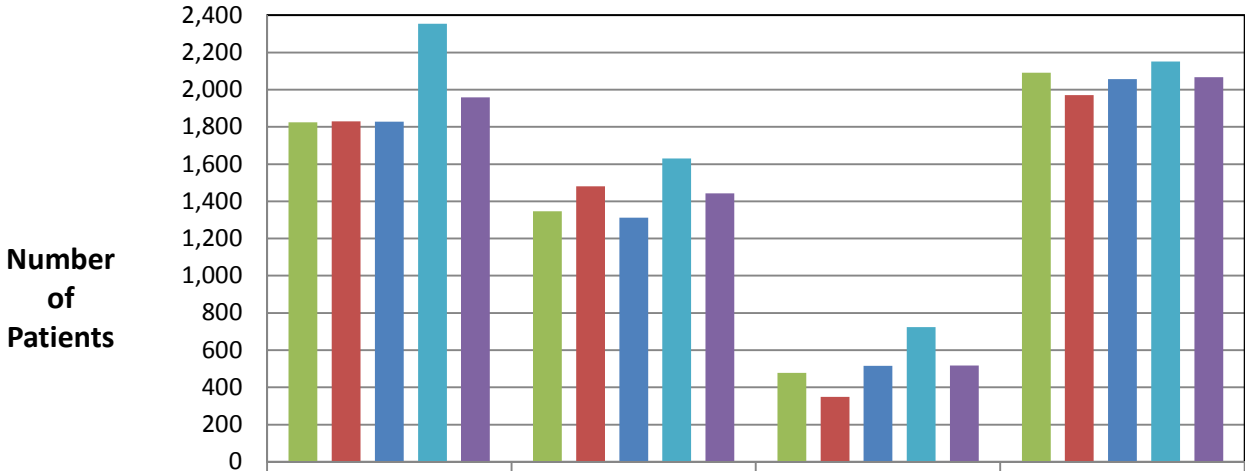


Figure C. Total EPFMC Primary Service Area Births, 2007-2010

Finally, we turn our attention to the number of perinatal patients served and amount of maternity care offered by EPFMC. As shown in Figure D, despite the noted decline in birth rates at every geographical level, the Center has not only maintained but actually *increased* its provision of perinatal and maternity care since 2008.



	Total Prenatal Patients	Total Initiating PNC at EPFMC	Total Initiating PNC Elsewhere	Total Deliveries Performed by Grantee
2008 UDS	1,824	1,347	477	2,092
2009 UDS	1,830	1,480	349	1,970
2010 UDS	1,828	1,312	516	2,057
2011 UDS	2,354	1,630	724	2,151
4-Year Mean	1,959	1,442	517	2,068

Figure D. YOY Comparison of EPFMC Perinatal Patients, 2008-2011

These data indicate that EPFMC is capturing a slowly increasing – or at least a non-decreasing – share of women seeking prenatal and maternity care in its primary service area, as well as of women visiting the agency for other female-focused health/reproductive services and education. Several steps could be taken to grow that share, including but not limited to:

- Maximizing efforts in neighborhoods where EPFMC's presence is already strong (*Promotores de Salud*, consumer-driven advocacy, school-based clinics, etc.)
- Continuing to increase EPFMC prenatal care patient numbers through:
  - CNM program
  - Centering pregnancy program
  - High-risk Special Care Clinic
  - VBAC requests and referrals
- Increasing referrals from MOUs
- Increasing CHMC contracts with OB providers
- Increasing non-pregnancy related services: ER, NSTs, surgeries, inpatient/ outpatient gynecological care, etc.

First 5 LA: WHAT HAPPENED?
The Story of the Project

With "Babies are Born Healthy" as the global goal established by First 5 LA, EPFMC's capacity-building project was **to design, implement, manage, and evaluate an HIT-enabled Perinatal Quality Management System**. There were three "strands" to the project, each with distinct tasks and benchmarks. "As implemented," the workplan included:

- **Project Strand 1. Perinatal QMS Development and Management**
  - Months 1-10 (Completed June 30, 2011)
    - Develop the Perinatal QMS Toolset to be used by stakeholders to assess and evaluate four dimensions of quality for the Center's portfolio of pregnancy care and education programs: Provider and patient satisfaction, processes of care, and health outcomes.
  - Months 11-22 (Completed June 30, 2012)
    - Develop, pilot, and deploy evidence-based instruments and analytical tools to collect and analyze data on dimensions of quality.
  - Months 23-24 (Current report): Produce and distribute report document.
- **Project Strand 2. HIT Implementation and Integration**
  - Months 1-10 (Completed June 30, 2011; ongoing training through Year 2)
    - Implement i2iTracks Perinatal Module to be used by staff and providers to collect data on processes of care and health outcomes.
    - Recruit, hire, and train a Perinatal Data Manager.
    - Train all appropriate agency staff and providers to use the Perinatal Module (through Year 2).
- **Project Strand 3. Monitoring, Assessment, and Evaluation**
  - Months 9-10 (Completed June 30, 2011): Prepare process and implementation overview and conduct SWOT assessment of project to-date.
  - Month 18 (Completed January 31, 2012): Interim progress brief.
  - Months 19-24 (Current report, completed August 31, 2012): Mixed-methods assessment and evaluation of perinatal outcomes and processes

Both the proposed workplan and timeline (submitted to First 5 as part of the grant application) were modified from "as designed" based on emergent opportunities and/or obstacles encountered during the contract period. In the following sections, we discuss in more detail the strategies and solutions undertaken in each project year.

Year 1

In Year 1 (September 2010 through June 2011), the consulting project coordinator, Kamella Tate Associates, LLC, worked with EPFMC's director of development Cheryl Trinidad and senior perinatal care providers to plan, coordinate, and support a variety of grant-funded activities. These included but were not limited to: Procuring the i2iTracks Perinatal Module and training appropriate staff; generating grant tracking processes and invoices; preparing reports and contract materials; conceiving and creating the PQMS Toolset; and conducting a year-end process evaluation.

Activities

- Start-up meetings were held with key stakeholders – the "Perinatal Work Group" – staff and providers who would be participating in and directing funded activities.
- A draft workplan was generated and a pack (5) of i2iTrack licenses was purchased.
- A new, grant-funded position was filled: Sybil Strelioff-Lem, R.N., was promoted internally to fill the position of Perinatal Data Manager and to receive advanced training as a "super user" of the i2iTracks Perinatal Module. Ms. Strelioff-Lem is an advanced practice nurse with over 15 years of experience as a provider and administrator for gender-based health programs.
- Training: An i2iTracks trainer conducted two full days of training on the Perinatal Module (January 31 and February 2, 2011).
    - Participants: Sybil Strelioff-Lem, R.N., Perinatal Data Manager; Candy Rabago, QI Coordinator and i2iTracks Manager/Trainer; Laila Al-Maryati, M.D., WHC Medical Director; Betsy Jenkins, M.P.H, C.N.M, Director, CNM Program; Becky Murphy, B.S.N, R.N., Director of Clinical Operations; Orlinda Parris, WHC Nurse Manager; Rita Sanchez, Medical Assistant; Jessie Yuan, M.D., Family Physician; and Frank Hernandez, AC Nurse Manager.
    - Project coordinator Kamella Tate also received 1.5 hours of phone coaching on June 26.
- Dr. Tate presented to staff and providers at the WHC quarterly meeting on February 3, where she discussed quality indicators, instruments, benchmarks, the Toolset, etc., and shared findings from a large-scale evaluation of perinatal outcomes and service delivery functions conducted in 2010.
- Planning and implementation meetings and phone and electronic communications were ongoing; these incorporated critical conversations about questions, fields, and indicators needed for the configuration of i2iTracks.

Assessment

SWOT analysis. A SWOT analysis of Year 1 revealed solid assets and solvable challenges associated with both the project and the agency. Strengths and opportunities noted in the assessment included a skilled and knowledgeable staff, strong organizational culture, high quality health outcomes, and processes of care, and innovative patient services. Weaknesses and threats consisted of issues such as a lack of data management capacity, challenges with inter-agency communications, and a generally low understanding of what successful fund development efforts require in an extremely challenging economy for nonprofits.

Although the threats posed by the economic and funding issues revealed in the SWOT analysis (Table 1), they hold within them the opportunities that come with change, adaptation, innovation, and what might be thought of as a "new prosperity." Similarly, project and organizational weaknesses we have noted are not terminal or even ruinous; they are more than balanced by the strengths in the staff and structures that together comprise "pregnancy-related care" at EPFMC. Overall, Year 1 of the project was both effective in process and accomplished in outcome, and resulted in tangible benefits for both the agency and its roster of perinatal care providers and educators.

Strengths	Weaknesses
• Knowledge, commitment, skills • Pre-project survey process • Agency culture: Shared goals, organizational context, trust • High quality processes/outcomes • Diverse portfolio of innovative services	• Low capacity for data analysis and reporting • Is evaluation viewed and valued as a core strategy? • Understanding of development • Responsiveness and communication
Opportunities	**Threats**
• Mid-level providers are key to ACA implementation • Evaluation tools more widely available • Community leader: EPFMC is highly respected and credible • Funders' emphasis on evaluation	• Competition • Weak/weakening economy • Language about evaluation in nonprofit community needs to match practice/ strategic actions • Resistance; attitudes hard to change

Table 1. SWOT Analysis of Pregnancy-Related Care and Education Services

Processes of care and health outcomes. At the end of Year 1, we took an early, formative look at two key indicators of quality – early entry into prenatal care and low birthweight birth rates – using data from EPFMC's 2010 UDS report (CY, data collected and retrieved using i2iTracks). For both indicators, considering only those patients who received conception-to-birth pregnancy care from EPFMC providers, the agency exceeded both benchmarks and performance targets.

- Eight-seven percent of EPFMC's patients started prenatal care in their first trimester, exceeding rates obtained by other FQHCs in both California and the US, as well as by reporting providers in the city of Los Angeles. It also exceeded the 2012 target set by HRSA for FQHCs nationwide and the Healthy People 2020 goal for initiation of prenatal care in the first trimester.
- EPFMC's OB Panel at California Hospital Medical Center performed 2,057 deliveries (MOUs, CHMC all, and EPFMC/WHC). Including MOUs, 972 of those patients received some or all of their prenatal care at EPFMC (980 babies; all risk factors).
    - Of these, 6.33% were LBW – a rate that betters those reported by FQHCs in California and nationwide, by the National Vital Statistics System for all of the US, and by reporting providers in the city of Los Angeles. It is also significantly better than the Healthy People 2020 target of 7.80%.

Learning and Progress

In Year 1, it became apparent that close project monitoring would be essential to its success both strategically and operationally. Staff and providers needed regular prodding to stay focused on activities and goals. This was most evident in the training process: Although the project coordinator and EPFMC development director were told the PDM would be trained to the level of a "Super User" of i2iTracks, this did not happen in a timely manner and additional training was scheduled for the start of Year 2.

On the other hand, the grant renewal process was used effectively by participants to revise outcome goals and workplans to better match what actually happens "on the ground" at EPFMC. More specifically, inter-agency communications were not as fruitful as planned – setting in-person meetings was a challenge, and provider schedules made their input and participation unpredictable. In order to both encourage and engage staff, we adapted the workplan so that communication and distribution of materials would be done via email.

Despite the confusion over the level of i2iTracks expertise needed by the Perinatal Data Manager, by the end of Year 1 the project was on-track with the original timeline and workplan. During the 10-month period, solid progress was made toward three intermediate outcome goals. By June 30, 2011:

1. Appropriate staff members were trained and able to use HIT-supported data management tools.
2. Perinatal providers reported an improved understanding of the importance of data management activities and strategies.
3. Perinatal providers and other EPFMC staff and managers were using data in clinical and operational decision-making, evaluation and reporting, and performance improvement processes.

Year 2

In the project's second year (14 months, July 2011 through August 2012), participants worked to build on the knowledge and skills they gained in Year 1 while addressing a variety of concerns, questions, and ideas that had surfaced during the previous 10 months. While not a comprehensive list, both informal and structured discussions tended to focus on topics such as:

- Compatibility with NextGen, EPFMC's new patient management system
- Embedded fields versus ad hoc notes and expansion fields
- Collection and reporting protocols
- Access, training, and communication challenges
- Using data for program monitoring and quality management

Activities

Months 11-16. Project activities in the first six months of Year 2 were undertaken in response to knowledge gained from the Year 1 SWOT evaluation, discussed above (Table 1). The evaluation revealed implementation issues that were addressed in a revised Year 2 workplan. Two of the most pressing were that

- The Perinatal Data Manager had not been trained to the required level of "Super User" for the i2iTracks Perinatal Module.
- The Women's Health Center leadership felt their needs were not being met in the data management processes being implemented throughout the agency.

An additional training day and two phone coaching sessions were scheduled to address both issues. The former, an all-day workshop conducted in EPFMC's computer-equipped training center, took place on August 10; project coordinator Kamella Tate used the latter to prepare the trainer and address some of the issues that had come up with the software.

Five EPFMC staff attended the full-day session, including WHC Medical Director and Nurse-Midwife Director, the Perinatal Data Manager, and EPFMC's i2iTracks Manager.

Months 17-24. The last 8 months of Year 2 was a period of consolidation. Staff standardized data collection processes and procedures, identifying and solving operational "glitches" associated with tasks such as chart retrieval and electronic data transfers. Pilot and evaluation data draws were performed successfully, and reporting and access protocols were devised and tested.

1. **Milestone achieved:** Data for the organization's annual UDS report came from the i2iTracks perinatal module, a process that greatly facilitated completion of sections on prenatal processes of care and health outcomes.
2. **Milestone achieved:** By June 30, 2012, i2iTracks Perinatal Module was fully integrated into patient tracking, monitoring, and reporting processes.
3. **Milestone achieved:** By August 31, 2012, a summative evaluation of quality of perinatal care processes and outcomes was completed.

Finally, with the HIT system firmly in place and staff using it competently and confidently, the Perinatal Work Group held two roundtable discussions about effectiveness, capacity limitations, data use, performance improvement, emergent needs and questions, and "what's next" for perinatal quality management.

Assessment

Formal assessment and evaluation activities were initiated in March 2012. The workplan targeted two areas of interest: **Quality of perinatal care processes and outcomes** and **organizational learning** associated with performance management.

Quality of perinatal care processes and outcomes. Using the PQMS ToolSet, benchmarks and targets were identified and comparison datasets generated. Test data were drawn from i2iTracks, and new coding protocols designed for the four indicators discussed in EPFMC's COF application: Prenatal care initiation, birthweights, NICU admissions, and preterm births. An additional indicator of interest to practitioners – Cesarean deliveries – was also identified for analysis.

Organizational learning. Formative assessment of organizational learning, (i.e., practitioners' new knowledge, skills, and attitudes) was iterative and ongoing. In the second half of Year 2, two group interviews of key staff were conducted and field notes used to record responses and observations.

Learning and Outcomes

The most significant lesson learned during Year 2 – and perhaps of the entire project – is that fostering a culture of accountability and building evaluation capacity depend on the presence of a number of conditions.

1. Highest priority: Visible and credible commitment from organizational leaders. Through their words and behaviors, leaders tell subordinates what is valued in an institution. If s/he asks for and refers to credible evidence for strategic planning and decision making, data-driven quality management will become the norm.

2. Foundational knowledge of evaluation methods: How to collect data and what to do with it once you have it.
3. Professional development opportunities for staff to improve to their applied research and evaluation skills and to collaborate on developing program assessments.
4. A performance monitoring strategy that includes programmatic theories of change and measurement pathways.
5. Evaluative thinking needs to be embedded into the project design process and data management practices prioritized throughout the organization. In such a culture, data are used not just to demonstrate success, but more importantly to improve programs and increase the impact and value of benefits to stakeholders.

Furthermore, *collecting* data must be coupled with *using* data. The healthcare system in America – as in education and other social service sectors – is awash with data. Data sitting on servers, in reports, in notebooks and file drawers. EPFMC is considerably ahead of the curve in having put key infrastructure in place and providing high quality staff training; however, the agency still wrestles (along with its peers) from this overload of unused data. It is difficult for practitioners to provide excellent patient care *while also* researching comparison groups, measuring outcomes, performing statistical analyses, conducting phone interviews, managing surveys, and writing reports and white papers – all without the ongoing assistance of a measurement expert or dedicated "more knowledgeable other."

> **The need in the nonprofit sector for practice-based research and improved evaluation capacity is clear, but how that need will be filled, by whom, and using what revenues remains poorly defined and under-resourced.**

Beyond gaining proficiency with i2iTracks and increasing staff knowledge of data collection and management processes, group interviews conducted in Year 2 revealed that the COF project raised a number of questions about indicators of quality and performance; about how resources can or cannot be used for data management and program monitoring; and about procedures and policies related to research and evaluation. With implementation of EHR/EMR ongoing throughout the Center, time is now being set aside at department and staff meetings to discuss the whys and whats of data usage, discussions that include both agreement and dissent about the essential purposes of performance measurement.

- Is it being done for improvement of practice or as a marketing/advocacy strategy? Or both?
- Is it being done because funders need/demand reports or because clinicians and staff want to develop an applied research program and contribute to the field? Or both?
- Can the agency allocate appropriate levels of resources to accomplish a wide range of agendas or will it be necessary to pick and choose?
- If the latter, how will those choices be made and who will get to make them (practitioners? administrators? funders?)?

The COF project kindled an awareness of accountability and a desire to learn more about the impact of EPFMC's programs and services. Whether i2iTracks will be sufficient to measure and analyze that impact remains to be seen; however, a better-informed conversation has been enabled and will continue in the coming months.

WHAT DID WE LEARN?
Using Data to Inform and Improve

Between March and August 2012, we conducted a utilization-focused evaluation of quality of care processes and health outcomes for a statistically significant sample of EPFMC's perinatal population, investigating effectiveness on four indicators correlated with the selected COF funding priority: **Babies are born healthy**. At the request of Women's Health Center Director, Dr. Laila Al-Maryati, we also looked at Cesarean delivery rates. Performance targets for the five areas of interest were:

1. Lower rates of low **birthweight** births (very low + moderately low) relative to those measured in demographically matched populations and compared with HP2020 goals.
2. Better rates of women receiving timely and sufficient **prenatal care** relative to those measured in demographically matched populations and compared with HP2020 goals.
3. Lower rates of **NICU admissions** relative to those measured in demographically matched populations compared with most recent rates reported by NVSS.
4. Lower rates of **preterm births** relative to those measured in demographically matched populations and compared with HP2020 goals.
5. Lower rates of **Cesarean deliveries** relative to those measured in demographically matched populations and compared with HP2020 goals

Procedure and Sample

In June, after performing test draws and designing coding and analysis protocols, we drew a sample dataset from i2iTracks: *All EPFMC patients who had delivered during the six-month period of November 2011 through April 2012*. The draw comprised 426 unique individuals, of which 283 had initiated care at the Center. Excel and EZAnalyze were used to generate descriptive statistics, and charting was done using both Excel and web-based data visualization applications. Additional data was extracted from EPFMC patient management system, NextGen.

Data Sources

- EPFMC year-over-year records [Source: 2011 Uniform Data System Report (UDS)]
- EPFMC patient databases (Sources: NextGen PMS; i2iTracks Perinatal Module)
- Women's Health Center Certified Nurse-Midwifery records [Source: CNM data]
- All California FQHCs (Source: http://bit.ly/Qy4Tso; N=118)
- All U.S. FQHCs (Source: http://bit.ly/SZkNiR; N=1,124)
- National FQHC benchmark goals (Source: U.S. Department of Health and Human Services, Health Resources and Services Administration, http://1.usa.gov/MMfmVj)
- Birth statistics for EPFMC's service area (Source: California Department of Public Health, Birth Profiles by Zip Code, http://1.usa.gov/N4gO0b; zip code matching for top 80 percent of EPFMC patients)
- City-, county-, state-, and national-level perinatal statistics (Sources: March of Dimes PeriStats, http://bit.ly/PXc6FM; National Vital Statistics System, http://1.usa.gov/isdIsv; National Center for Health Statistics, http://1.usa.gov/PblS28)

Findings

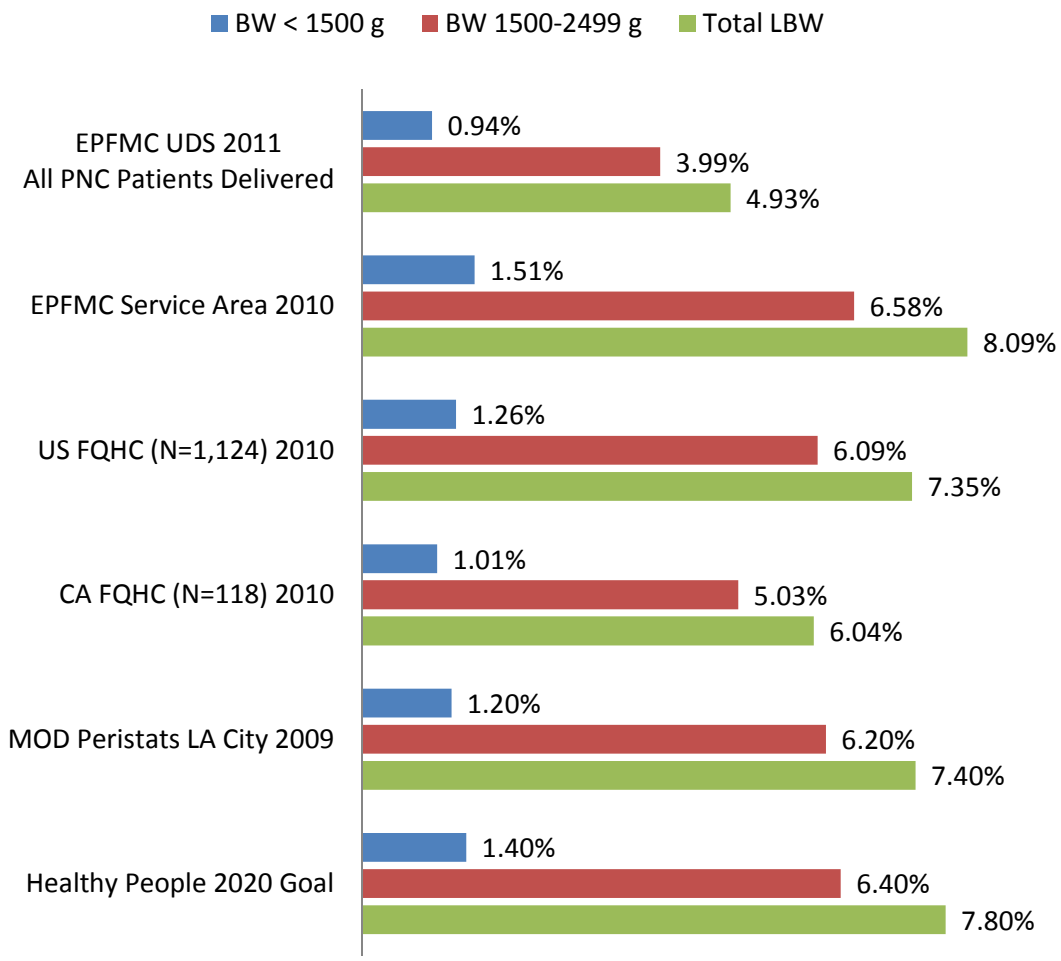
Low Birthweight Births

> Efforts to reduce perinatal morbidity and mortality must be directed toward the prevention of low birthweight (LBW) births. The most cost-effective means of preventing LBW births is adequate prenatal care. (Murata, McGlynn, Siu, & Brook, 1992, p. 1)

As observed in a large-scale evaluation of EPFMC's women's health services done in 2009/10, the Center continues to have rates of low birthweight births significantly lower than all comparison group benchmarks and performance targets (Figure 1).

- **Process and mechanism:** Is this because much of EPFMC's prenatal and maternity care is planned, supplied, and directed by Certified Nurse-Midwives? Large-scale CNM programs are not commonly found at FQHCs – only 11 percent of all CNMs in the U.S. provide care through or at a community clinic. At EPFMC, increased attention to CNMs does not diminish the care provided by OBs: The two groups work collaboratively, in relationships that deserve further scrutiny.

Figure 1. Comparison of Low Birthweight Rates



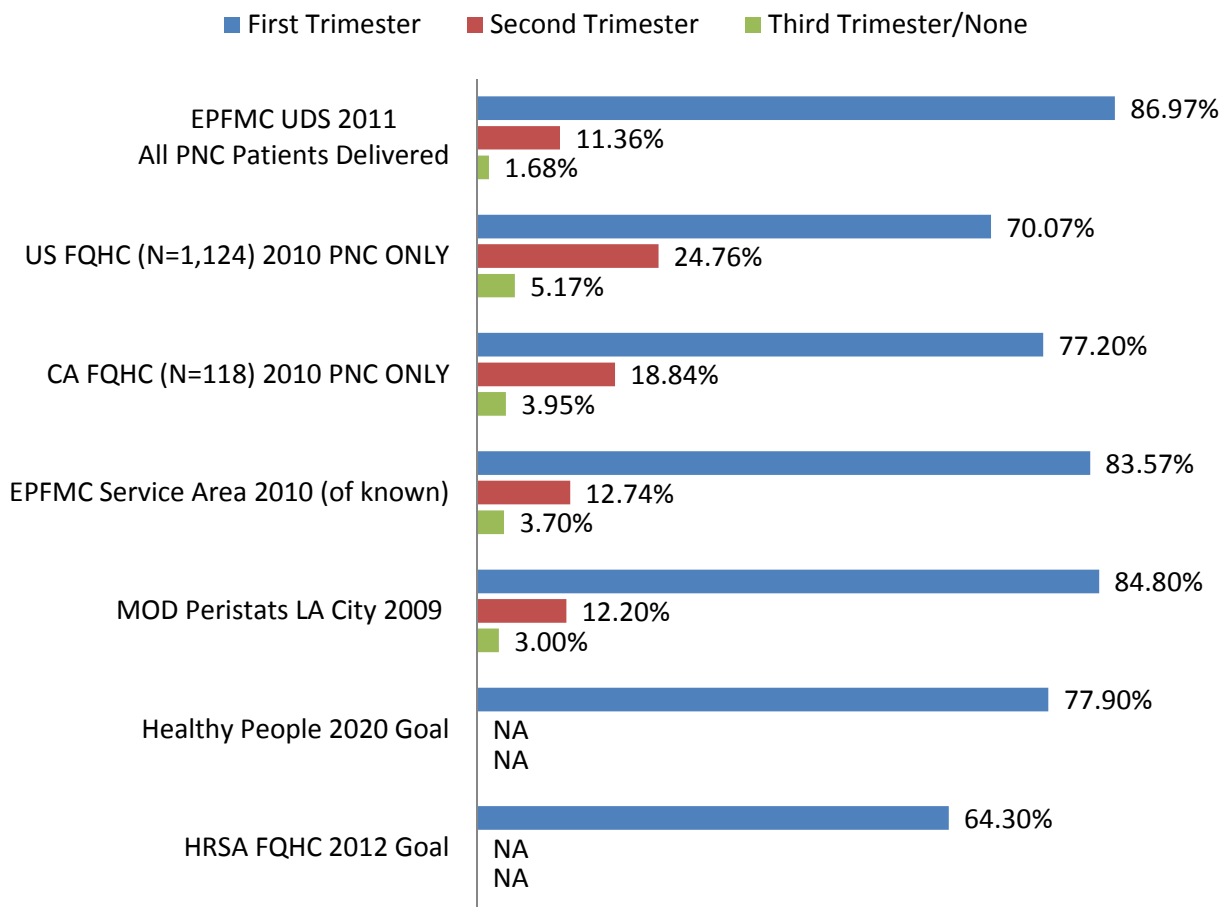
Trimester of Entry into Prenatal Care

> The goal of prenatal care is to help the pregnant woman achieve physical, nutritional and psychosocial well-being and have a healthy outcome of pregnancy for both herself and her newborn. It is recommended that all women have access to prenatal care services starting in the first trimester of pregnancy. (PAC/LAC, 2009, p. 8)

Appropriate prenatal care management can have a significant effect on the incidence of low birth weight (LBW; infants born at less than 2,500 grams or 5 lb., 8 oz. per 100 births), the risk factor most closely associated with neonatal mortality. In turn, improvements in infant birth weight can contribute significantly to reductions in infant mortality rates. This measure reflects both on quality of care and health outcomes for EPFMC patients of childbearing age. "Identification of maternal disease and risks for complications of pregnancy or birth during the first trimester can help reduce the risk of low birth weight" (HRSA, 2010, p. 14).

EPFMC continues to achieve remarkably high rates of first trimester entry into prenatal care among patients who begin their care at the Center (Figure 2). Considering the risk factors at play in the client community – poverty, transiency, low levels of education and "health IQ," lack of insurance, too-few providers – the rates are even more striking.

Figure 2. Comparison of Trimester of Entry into PNC



NICU Admissions

In 2003, new checkbox items were added to the U.S. Standard Certificate of Live Birth – by 2008, 27 states had implemented the new certificate. One new category is "Abnormal Conditions of the Newborn," and includes a checkbox for "NICU Admission" (see Osterman, Martin, & Menacker, 2009, for a full discussion). [Although "results for this limited reporting area are not generalizable to the country as a whole because they are not a random sample of all births" (p. 3), alternative comparison rates are difficult to come by – except for those generated by insurance companies performing cost-effectiveness studies.]

Because the most recent available National Vital Statistics Report (NVSR) on NICU admissions (Osterman, Martin, & Menacker, 2009) includes all infants regardless of factors such as multiple births or maternal characteristics, we have analyzed NICU rates for EPFMC perinatal patients based on two variables (Figure 3).

1. Prenatal care: "PNC Only" refers to patients who received all of their prenatal care at the Center.
2. "All" refers to all patients whether their prenatal care came from EPFMC providers or elsewhere.

As illustrated, NICU admission rates for both of the populations bettered those reported for the rest of the US; that is, relative to the NVSR analysis, the prenatal and maternity care provided by EPFMC appears effective regardless of whether a woman went there for all of her care or transferred there sometime during her pregnancy.

Figure 3. Comparison of NICU Admission Rates

Preterm Birth Rates

Preterm birth is defined as a live birth before 37 completed weeks gestation. Other classifications of preterm births include late preterm (34-36 weeks), moderately preterm (32-36 weeks) and very preterm (<32 weeks).

- Approximately two-thirds of LBW infants and 98% of VLBW infants are born preterm.
- Preterm birth is the leading cause of those neonatal deaths not associated with birth defects.

Survival rates of infants have been shown to increase as gestational age advances, even among very preterm infants. Therefore, reduction in preterm delivery holds the greatest

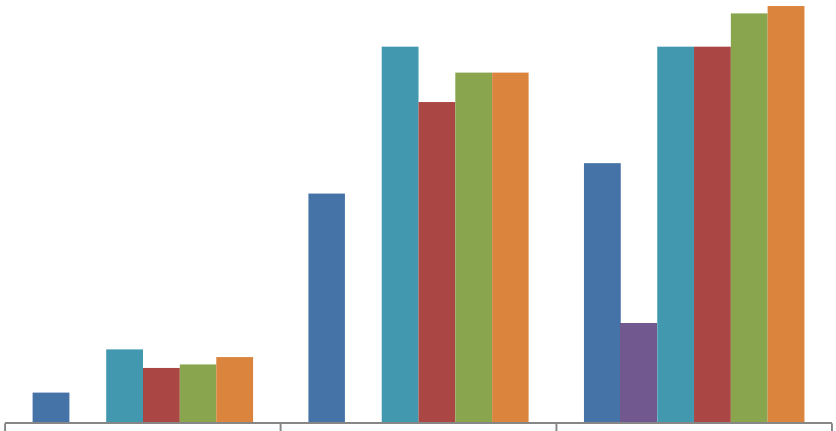
promise for overall reduction in infant illness, disability, and death. Preterm birth is associated with a number of modifiable risk factors, including the use of alcohol, tobacco, or other drugs during pregnancy and low prepregnancy weight or low weight gain during pregnancy. Other important risk factors for preterm birth are vaginal infections and domestic violence.

Although EPFMC is not yet collecting data on gestational age using its new HIT systems (NextGen and i2iTracks), we can look at numbers from 2010 and compare them with the most up-to-date records from the National Vital Statistics Reports (as compiled in the March of Dimes Peristats).

- As seen in Figure 4, in 2010 EPFMC preterm rates were noticeably lower than comparison benchmarks (US, CA, and Los Angeles city) and the HP2020 performance target.

Although we would expect the inclusion of higher risk pregnancies in EPFMC's patient population to result in higher rates of preterm births than those seen in comparison groups, this again does not appear to be the case.

Figure 4. Comparison of Preterm Birth Rates



	Very Preterm <32 Weeks	Moderately Preterm 32-36 Weeks	Preterm <37 Weeks
EPFMC 2010	0.83%	6.22%	7.05%
EPFMC WHC CNMs 2011			2.72%
MOD Peristats US 2009	2.00%	10.20%	10.20%
MOD Peristats CA 2009	1.50%	8.70%	10.20%
MOD Peristats LA City 2009	1.60%	9.50%	11.10%
Healthy People 2020 Goal	1.80%	9.50%	11.30%

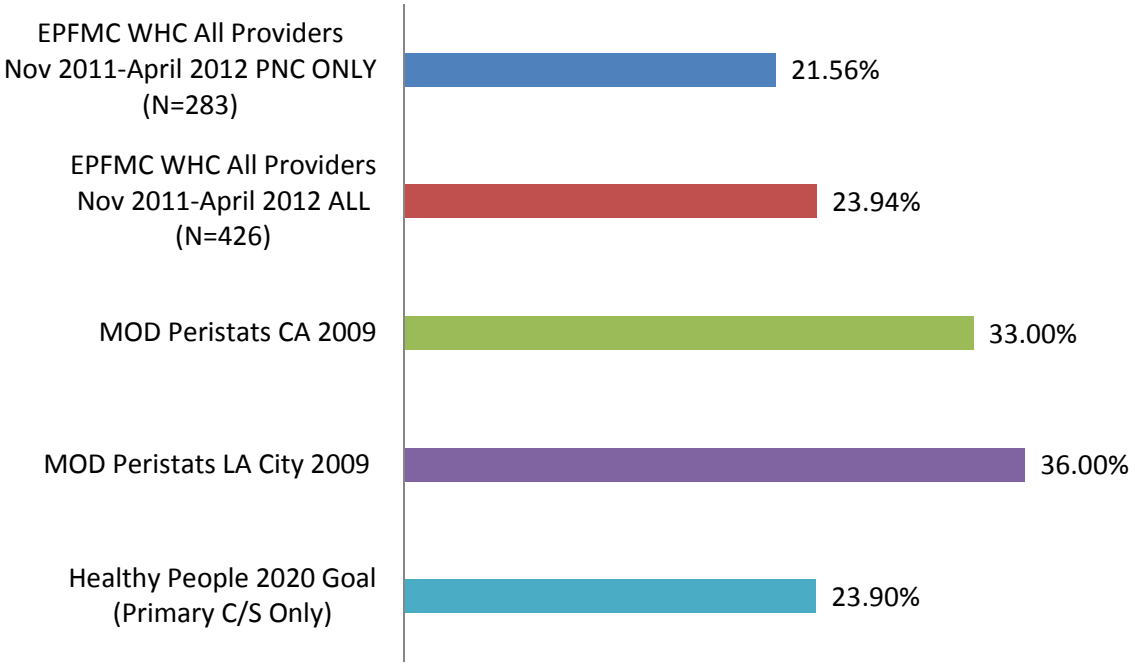
Cesarean Deliveries

In 2007, nearly one-third (32%) of all births were cesarean deliveries. Although there are often clear clinical indications for a cesarean delivery, the short- and long-term benefits and risks for both mother and infant have been the subject of intense debate for over 25 years. Cesarean delivery involves major abdominal surgery, and is associated with higher rates of surgical

> complications and maternal rehospitalization, as well as with complications requiring neonatal intensive care unit admission. In addition to health and safety risks for mothers and newborns, hospital charges for a cesarean delivery are almost double those for a vaginal delivery, imposing significant costs. (Menacker & Hamilton, 2010, p. 1)

EPFMC's C-Section rate (total) – whether the patient initiated care at the Center or elsewhere – was equal to or better than comparison rates (Figure 5).

Figure 5. Comparison of C-Section Rates
Total or Primary as Available



Discussion

Placing a well-defined focus on women's health concerns and issues improves outcomes for both the women and those they care for: Women make the vast majority of medical choices not only for themselves but also for their families. Furthermore, research indicates substantial benefits accrue from primary and specialty care provided by integrated medical homes such as EPFMC, especially those located in neighborhood settings. Cultural and linguistic competency, consistency and accessibility, a focus on prevention and self-care management – all promote effective communication between stakeholders and lead to better outcomes, quality of life measures, and health status levels than those achieved by irregular episodic or emergency care.

What can we take away from the evidence collected here? Most importantly, **EPFMC perinatal patients have better health outcomes than patients receiving care from agencies serving roughly similar populations.** The low birthweight birth rate is of particular significance, as it is both an indicator of effectiveness and a predictor of infant

(and possibly life-long) health. Further research is needed to understand – and replicate – the causal mechanisms that underlie the Center's achievements in a complex and mutable setting, with two areas of investigation deserving greater attention.

- Research has shown that CNMs are more rigorous about following practice guidelines (Baldwin, Raine, Jenkins, Hart, & Rosenblatt, 1994; MacDorman & Singh, 1998), and typically do not manage the most clinically difficult pregnancies. Does the noticeably high quality of care EPFMC provides, combined with lower medical risk in the CNM patient population, result in the healthier birthweights, longer average gestational periods, and fewer NICU admissions seen in the sample population?
- Collaborative practice models such as that seen between CNMs and OB/GYNs in EPFMC's Women's Health Center are receiving increasing attention in both scholarly research and program evaluations [see Miller & King, (1998) for an excellent bibliography of resources]. What characteristics of such models map to WHC practices to enhance strengths and mitigate risk factors, resulting in outcomes that match or exceed those achieved by peer providers?

A rational model of medical care should be evidence based and constructed on the principle of "effective care with the least harm" (Sakala, 2008, p. 68). Effective care that is provided by well-trained and compassionate clinicians and other professionals; that takes into account patients' cultural and family contexts, education, personal values, and economic resources; and that is available at times and accessible in places suited to the characteristics of the community being served.

This is not to say that such approaches and perspectives can eradicate all risks, motivate all providers, retain all patients, or avoid all bad outcomes. However, it is the "least harm" logic of evidence-based care – in both practice and policy – that offers the most feasible and affordable alternative to the expensive, confusing maze that too many patients confront when attempting to access America's healthcare system. If the goals of administrators and providers are to maximize the good and minimize the bad, models such as EPFMC's suggest ways to optimize the allocation of scarce public and private resources to benefit even the most vulnerable populations.

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Kamella Tate Associates, LLC This evaluation report was prepared by KTA/LLC, Kamella Tate, Project Coordinator and Lead Evaluator. KTA/LLC is a woman-owned small business that provides research, program design, advancement, and evaluation services to community-based organizations working in the arts, education, and healthcare.

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First 5 LA is a child-advocacy organization created by California voters to invest tobacco tax revenues in programs for improving the lives of children in Los Angeles County, from prenatal through age 5. Since 1998, the agency has invested more than $699 million in grants and programs to champion the health, education, and safety causes concerning young children and families. On-line at www.first5la.org.

The Community Opportunities Fund supports organizational capacity building and policy and advocacy efforts by organizations serving the needs of children 0-5 and their families. The fund is intended to be responsive to the needs and creative ideas of community agencies to address and sustain outcomes identified by First 5 LA as key to the safety, health and readiness to learn of our youngest residents.