

## ***Internatal Care Program (ICP)***

for Women Who Have Experienced Poor Birth Outcomes: A Provision of Preconception, Interconception, and Prenatal/Postnatal Care.

Location: Phoenix, Arizona

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Category: **Promising Practice**

### **BACKGROUND**

Despite unprecedented access to prenatal care, high rates of low birth weight, preterm birth and consequent infant morbidity and mortality persist. According to the Bureau of Public Health Statistics, Arizona Department of Health Services, in 2009, there were 547 neonatal and post neonatal deaths and 9,295 infants born before 37 weeks gestation. Although, there has been a steady decline in infant morbidity and mortality, this demonstrates the need to provide services before conception or early in pregnancy in order to have a maximal effect on health outcomes.

At Maricopa Medical Center alone, from February 2008-January 2012, approximately 700 women experienced a second trimester loss (e.g. intrauterine fetal death at >15 weeks) or delivered preterm or low birth weight infants and/or infants with extended NICU stays. Many of the women received no or little prenatal care. It is unknown how many might have received preconception care, but it can be safely assumed this would be a rare event.

### **PROGRAM OBJECTIVES**

The Internatal Care Program (ICP) goals include: 1) Improve the health of women prior to pregnancy or before pregnancy is recognized, i.e preconception health. This is done by identifying and managing risk factors and conditions that pose a risk to a future pregnancy; and 2) Improve birth outcomes for the women receiving care through the ICP.

Key objectives include:

1. Increase the number of women who deliver at term.
2. Improve birth intervals (e.g. >12 to 18 months).
3. Increase access to quality preconception, interconception, prenatal, and postnatal health care.
4. Provide continuity from the postnatal period through subsequent pregnancies. This is accomplished from having the same obstetrician/gynecologist provide health care in the preconception and prenatal period.

TITLE V/MCH BLOCK GRANT MEASURES ADDRESSED
# 14: A) Percent of women who smoke during pregnancy and B) Percent of children who live in households where someone smokes.

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5. Provide care coordination services during the preconception, prenatal and postnatal periods.
6. Provide health promotion and education during the preconception, prenatal and postnatal periods.
7. Provide community activities that address areas of preconception, prenatal and postnatal health, such as postpartum depression support groups, domestic violence support groups, and physical activity/nutrition classes.
8. Provide health education on newborn care and infant brain development and conduct developmental screenings in the postnatal period.
9. Provide culturally competent care, including the provision of bilingual staff, bilingual providers, and educational materials in both English and Spanish at a 6<sup>th</sup> grade reading level.

### **TARGET POPULATION SERVED**

The practice setting is a clinic-based program at Maricopa Integrated Health System (MIHS). MIHS, located in Phoenix AZ, is a public safety-net health system and consists of an acute care hospital with a Level III neonatal intensive care unit (NICU), 11 community-based family health centers and an adjacent outpatient specialty and primary care center which houses the Internatal Clinic Program. Most of the women who receive ICP services are women of child bearing age who are underserved and uninsured living in the Phoenix Metropolitan area, and who have experienced one or more of the following adverse birth outcomes: 1) second trimester loss (>15 weeks estimated gestation age (EGA) or greater; 2) intrauterine fetal death; 3) preterm birth (35 weeks EGA or less); 4) low birth weight ( $\leq$ 2500 grams; or 5) newborn condition requiring a stay of >5 days in the Neonatal Intensive Care Unit. While over 200 women have received services since 2008, the number of active patients at any given time is approximately 100. This is due to the transitory nature of the population, women who no longer meet criteria and/or women who are lost to care with no current contact information. Currently, the majority of women

are minorities (91% Hispanic, 5% African American, 1% Native American, and 2% mixed/other). Only 1% of the women currently receiving services are white/non-Hispanic. The median age is 29 years and 53% speak and read only Spanish.

### PROGRAM ACTIVITIES

The ICP provides clinical care, care coordination, and health education/promotion to women with poor birth outcomes. The program is a replication and an expansion of the Grady Interpregnancy Care Program at Grady Memorial Hospital, which is based on coordinated primary healthcare coupled with social support. The Grady Interpregnancy Care Program also contains facilitated group visits including elements of group prenatal care, Centering Pregnancy. The Program's planning phase began in 2007, with the first patient seen at the Clinic in February 2008. After more than 4 years, the Program is going strong and more women are receiving services every year. Activities developed include:

- An ICP Clinic one afternoon per week staffed a physician, resident, office support personnel, 2 FTE care coordinators, and a .25 family violence advocate
- One-on-one, culturally-competent care coordination during ICP visits
- Health education and promotion
- Support groups addressing perinatal mood disorders, domestic violence, physical activity, and nutrition
- Health education on newborn care and brain development

Health education/promotion resources were based on existing evidence-based or promising practice models for exercise, nutrition, dental health education, contraception management, folic acid use, etc. Health Information and developmental screening for newborns and infants up to age 3, born to mothers seen through ICP, were components added to the program in 2009. (A list of all resources and educational materials used is available upon request.)

### PROGRAM OUTCOMES/EVALUATION DATA

Quality improvement methods included quarterly meetings between ICP staff and partners in the first two years in order to obtain input on the design of the program. Using the PDCA model (Plan, Do, Check and Act), aspects of the program were planned, implemented, and reviewed for effectiveness. If changes needed to be made, they were agreed upon, implemented, and then monitored on a quarterly basis. Formal reviews are conducted on an annual basis.

The evaluation included both short term and long term outcomes that were measured through an ongoing retrospective descriptive study process.

In regards to long term outcomes, data is being collected without identifiers via medical record review to assemble a

historical control group to compare birth outcomes and birth intervals with those receiving services in the Internatal Care Program. Specific examples of variables to be collected include maternal age at delivery, ethnicity, gestational age of delivered infant, birth weight and birth outcome.

To be eligible for the historical control group, women must meet the same eligibility criteria as the ICP group, but must not have been enrolled in the ICP or seen in the ICP Clinic. Historical control group subjects have been identified in the same manner as the ICP group, which is through the hospital "labor log," housed within the MIHS Health Information System.

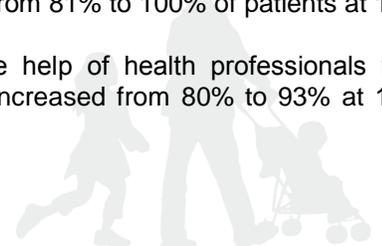
Potential biases of this process may include geographical distance and transportation. The ICP Clinic operates on Wednesdays at the Comprehensive Healthcare Center in central Phoenix. Although some women will travel far to attend the Clinic, others elect to receive care closer to home. In addition, there appears to be a bias of attendance based on an intrauterine fetal death or early premature labor. Often a woman who delivers at late preterm infant (e.g. 35 weeks) will not see a need for preconception care, as indicated by telephone conversations with care coordinators.

From February 2008-October 2011, 189 women had at least one visit to the Internal Clinic. By October 2011, there were 102 active patients. A study was conducted of the active program participants (n=102) in January 2012. The qualitative section contained elements of care coordination/case management revolving around compliance with visits, health education, and promotion, and the Postpartum Depression Support Group. Change in preconception attitudes and attitudes over time were assessed with a Mantel-Haenszel test for trend using WINPEPI software.

Short term outcomes for active patients showed that the majority of participants had their mental health needs addressed, were consuming a folate supplement, were using contraception if they did not desire a pregnancy, and engaged in regular physical activity. Additionally, among pregnancies in the program (n=22), 87% had prenatal care in the first trimester.

Improvements in patient knowledge and attitudes were documented through the use of a Preconception Health Survey which was completed at the initial visit, and then at 6 months and 12 months. Areas of improvement included:

- "A woman should start taking folic acid before she gets pregnant" (increased from 81% to 100% of patients at 12 months).
- "A woman needs the help of health professionals to improve her health" (increased from 80% to 93% at 12 months).



- “The age of the mother does NOT affect the outcome of the pregnancy” (increased from 47% to 75% at 12 months).

Patient satisfaction was also monitored through a written survey. Of those completing the satisfaction survey (n=60), 95% were very satisfied with the care coordination and medical care respectively.

**PROGRAM COST**

Grant funding for two care coordinators, a part-time family advocate, a part-time research assistant, and printed educational materials is provided at \$244,000/year (for approximately 120 women/infants per year). Annual costs per patient for all support services is estimated at \$2,034 per woman/infant served. Annual costs may be compared to other programs providing pre-natal and post-natal support services to women and infants, such as Healthy Start or Nurse-Family Partnership Programs. Costs for medical care are covered through insurance programs. Cost savings are achieved through prenatal care and prevention of high-cost neonatal intensive care in-patient stays.

**ASSETS & CHALLENGES**

*Assets:* The main impetus for this Program was the increased attention given to preconception care at the state and national level. This awareness by the Program’s Medical Director and by the initial funder, the March of Dimes, made our proposal fundable and helped launch this Program.

*Challenges:* The primary challenge continues to be obtaining and maintaining funding for care coordination, family violence advocacy, and health promotion/education. The Program would not be able to maintain the numbers of participants that it has, or provide value-added services, without these components of the Program.

*Overcoming Challenges:* Quarterly meetings were held the first two years with Program partners and staff to discuss challenges and implement solutions. Staff meetings are still held periodically in order to discuss challenges, implement solutions, and identify enhancements.

**LESSONS LEARNED**

All aspects of the program have been kept since the inception, however, the curriculum, timing and duration of group activities is constantly being reviewed and revised. In addition, we are attempting monthly contacts (e.g. if no appointment is scheduled, a telephone call that includes at least 1 health promotion/education topic is completed). This should help decrease the number of women who are lost to follow-up care.

**FUTURE STEPS**

There is a sustainability plan in place and MIHS continues to identify funding for the care coordination and health

promotion/education activities. The next steps include continuation of the program with increased visibility in the Community (e.g. patients who delivered prematurely at other hospitals are eligible for the Program as long as they meet inclusion criteria). MIHS has approached Arizona Healthcare Cost Containment System, (Medicaid) managed care plans to assess interest in the project. While there is interest, funding challenges are limiting.

**COLLABORATIONS**

Many organizations partnered to help design ICP from 2007-2010, including: March of Dimes; Maricopa County Department of Public Health; Arizona Department of Health Services; Mercy Care Plan; University Health Plan; Arizona Public Health Association; Mayo Clinic Family Medicine; MIHS Departments of OB/GYN, Maternal Fetal Medicine, Family Medicine, Ambulatory Services, and Social Services; Southwest Human Development; St. Luke’s Health Initiatives; and Arizona Healthcare Cost Containment System. Additionally, since 2009, MIHS has partnered with First Things First, a critical partner that provides funding for the care coordinators, family violence advocate and health education materials.

**PEER REVIEW & REPLICATION**

Results from the ICP have been presented at the 2<sup>nd</sup> and 3<sup>rd</sup> National Summit on Preconception Health and Healthcare, the 1<sup>st</sup> European Congress on Preconception Health. The results from the January 2012 study are currently in review for publication. Although there are no formal plans to replicate the ICP in other settings at this time, the ICP staff is available to answer questions and to provide a list of the resources and educational materials upon request.

**RESOURCES PROVIDED**

A bilingual brochure was created for the program and is available. In addition, the Arizona Department of Health Services created a booklet entitled: “Every Woman Arizona,” which is distributed to all new participants. Many educational pieces are used and include topics such as nutrition, physical exercise, folic acid, oral health, depression screening, etc. For more information, contact Dean V. Coonrod, M.D., MPH, Clinical Director of the Program, at [dean\\_coonrod@dmgaz.org](mailto:dean_coonrod@dmgaz.org).

**Key words: Prenatal Care, Birth Outcomes, Preconception Health, Birth Defects Prevention, Chronic Disease, Service Coordination & Integration, Primary/Preventive Health Care**

**\*\*For more information about programs included in AMCHP’s Innovation Station database, contact [bp@amchp.org](mailto:bp@amchp.org). Please be sure to include the title of the program in the subject heading of your email\*\***

