

## American College of Nurse-Midwives Annual Meeting

## Abstracts from Research Forums Presented at the American College of Nurse–Midwives' 58th Annual Meeting

The American College of Nurse-Midwives (ACNM) Division of Research, Division of Global Health, and the *Journal of Midwifery and Women's Health* are pleased to present the abstracts from the 2013 Research Forum podium presentations. The podium presentations were selected in a blinded peer review process and presented at the ACNM Annual Meeting in May 2013. The abstracts of completed research were eligible for presentation and therefore publication. The abstracts presented here demonstrate the breadth and quality of research being conducted about midwifery and women's health by midwifery researchers and our colleagues.

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 Carrie Klima, CNM, PhD, *Chair, Research Dissemination Section, Division of Research*  
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#### Validation of the Optimality Index-US for Use in Turkey to Assess Maternity Care

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**Aim:** To determine the validity of a translated version of the Optimality Index-United States (OI-US) for use in Turkey by comparing the scores for healthy and high-risk pregnant women. **Background:** The OI-US is a validated instrument used in perinatal outcomes research based on the principle of using the least amount of intervention to promote maximum outcomes. It includes process and outcome items in 2 parts, the perinatal background index (PBI) and optimality index (OI) which combine as the total OI-US. There are not validated instruments for use in Turkey that measure optimality. **Methods:** The study was conducted at a women's hospital in Ankara, Turkey in April and May 2012. Laboring women (N = 300) were grouped according to their pregnancy risk status into 2 groups: 150 healthy pregnant women and 150 high-risk pregnant women. Data were collected prospectively and were analyzed with percentages and *t* tests for independent samples. High scores indicate greater optimality. The total OI includes both the PBI and the OI combined. **Results:** There was a significant difference between the mean PBI scores in high-risk and healthy pregnant women ( $t: 2.654; P < 0.05$ ) and a significant difference between the mean OI scores in high-risk and healthy pregnant women ( $t: -2.065; P < 0.05$ ). Yet the total OI scores for high-risk compared to healthy women was

not significant ( $t: -0.084; P > 0.05$ ). **Discussion:** The results of this study indicate that while the risk status of women differs, the type of care they received is essentially the same as measured by the Turkish version of the OI-US which is not optimal. The validity of the instrument appears to function appropriately.

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#### Local Midwives Finish Last: Findings From a Demographic and Work Environment Survey Among Auxiliary Midwives in Mali

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**Question:** What is the demographic profile and work environment for auxiliary midwives in Mali? **Aim:** Describe the demographics and work environment for auxiliary midwives in Mali. **Methods:** We used a mixed-methods, embedded design. Survey data were analyzed using one and 2-sample *t*-tests and multiple linear regression. Interview data were analyzed using thematic analysis. One hundred and twelve midwives participated in the survey, and 32 in interviews. **Background:** In Mali's context of high maternal mortality, auxiliary midwives attend more births than all other formally trained health care workers combined. Yet, there are almost no data on their actual work environment or implications of their social situations at their work. If we understood these factors, we could more effectively recruit, train, and support these critical health workers. **Results:** Analysis is ongoing. Preliminary results suggest median midwife age range of 41 to 45 years with mean 6.4 years of education. Almost all are married with children. Half are from the village where they serve and 86% are in rural villages. With respect to supplies, 65% had working blood pressure cuff, 41% a thermometer, half had easy access to water, and 68% had access to reliable lighting. Supplies that were significantly less available to rural midwives were adequate light, water, and partograms. Most midwives work with a colleague, about half with a nurse. Forty-one percent had not been paid regularly in the last 3 months. Two-thirds used mobile phones for work; many reported the phones decreased referral time. Rural midwives who work in the village where they are from (vs having been sent to a rural area from the city) faced challenges: they were 2.5 times less likely to have equipment, to have been paid regularly, or be as well educated. Midwives described a variety of caring and disrespectful behaviors toward women. Qualitative data supported survey data. **Discussion:** Midwives in rural Mali work in challenging environments with few resources. The picture

is particularly bleak for rural midwives who are from the village where they serve. In order to support and retain these critical health care workers, strategies must recognize the difference in social status of certain midwives.

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### Family Planning Perspectives of Couples Affected by Sexual and Gender-based Violence in Post-conflict Democratic Republic of Congo

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**Question:** How did the conflict in Democratic Republic of Congo (DRC) impact family planning perspectives among survivors of sexual violence and their partners? **Aim:** Examine access, knowledge, and utilization of family planning as well as attitudes, beliefs, and behaviors that support and/or prevent family planning services among female survivors of sexual and gender-based violence (SGBV) in rural DRC. **Background:** In DRC, one-third of women want to space their births. However, in conflict-ridden eastern DRC contraceptive use is as low as 3%. This enormous, unmet need for family planning services strains already vulnerable families when economic resources are scarce and stability is tenuous. Developing effective programs to address unmet family planning need is critical for efforts to rebuild health, economic, and social supports in the DRC. At present, there is no information on how family planning within relationships is impacted by the health and social complexities of SGBV. **Methods:** Mixed-methods design using 31 surveys, 31 interviews, and 8 focus groups with a sample of 70 (36 men; 35 women) community members including 11 couples. Data were collected in April and July of 2012 and analyzed using quantitative description and thematic analysis. **Results:** Analysis is ongoing. Preliminary analyses suggest poor understanding, availability, and use of family planning methods, and strong themes about the impact of poverty on desired family size and the influence of male power and intimate partner violence on family planning. **Discussion:** Findings suggest the war's violence continues in couples today, negatively impacting access to and use of family planning. Efforts to improve women's negotiation skills with respect to family planning and dispel myths related to certain methods are critical features of any program to improve family planning use.

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### Improving Maternal and Infant Health through CenteringPregnancy: Results of a 2-Year Retrospective Chart Review Using a Matched Comparison Design

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**Objective:** Healthy People 2020 goals include reducing infant mortality and morbidity associated with pregnancy. Center-

ingPregnancy is a model of health care delivery that unifies health assessment, education, and support into a group setting that has been shown to improve prenatal care compliance, prenatal health knowledge, and prematurity. **Research Question:** Is there a difference in select maternal health indicators and pregnancy outcomes between women participating in CenteringPregnancy and traditional care? **Methods:** An analysis was conducted comparing CenteringPregnancy participants with a matched comparison group (traditional care). Data were collected through retrospective records review. Institutional review board approval was obtained from Western Michigan University and Borgess Medical Center prior to data collection. For the period of data collection (January 2010 through April 2012), 173 CenteringPregnancy participants were identified and a comparison group of 170 traditional certified nurse-midwife (CNM) care clients were selected matched on race, age, and insurance status. Additional maternal data collected included prior pregnancies, height, and prepregnancy weight. Prenatal variables included number and timing of prenatal care visits, weight gain, and smoking status. Intrapartum variables included mode of birth and gestational age. Postpartum data were collected regarding attendance at a 6-week postpartum visit and breastfeeding. **Results:** There was a significant between-groups difference in gestation at first prenatal visit (11.8 weeks for traditional care vs 10.3 for CenteringPregnancy,  $P = .031$ ). There was not a significant difference in mean number of prenatal visits (14.2 for CenteringPregnancy vs 13.4 for traditional care,  $P = .266$ ). There was not a significant difference in rates of smoking at pregnancy diagnosis (26% [ $n = 45$ ] of CenteringPregnancy vs 30% [ $n = 49$ ] of traditional care); however, 69% ( $n = 31$ ) of the women in the CenteringPregnancy group quit with pregnancy diagnosis versus 18% ( $n = 9$ ) of the traditional care group ( $P < .001$ ). Additionally, 50% ( $n = 7$ ) of those still smoking quit during CenteringPregnancy versus only 8% ( $n = 3$ ) during traditional care ( $P < .001$ ). There was no difference in prepregnancy weights or weight gain between groups, with only 28% of traditional care and 25% of CenteringPregnancy participants gaining the optimal amount of weight. There was no difference in mean gestational age at birth (39.3 weeks for CenteringPregnancy vs 39.5 weeks for traditional care) or rates of preterm births (5.8% in CenteringPregnancy vs 5.9% in traditional care). There were no differences in cesarean rates (17% for CenteringPregnancy vs 14% for traditional care,  $P = .443$ ). Both groups had high rates of attendance at their 6-week postpartum visit (92% for CenteringPregnancy vs 88% for traditional care,  $P = .243$ ). CenteringPregnancy participants were more likely to initiate breastfeeding (79% vs 60% for traditional care,  $P < .001$ ) and more likely to still be breastfeeding at the 6-week postpartum visit (65% vs 45% for traditional care,  $P < .001$ ). **Conclusion:** In this study, CenteringPregnancy demonstrated promise in reducing smoking rates during pregnancy and improving breastfeeding rates. This study also demonstrates that optimal weight gain guidelines must be addressed with women during pregnancy regardless of type of prenatal care. Findings from this study must be viewed in light of the self-selection bias. Despite our attempts to control for variance by utilizing a matched comparison design, women who chose CenteringPregnancy initiated prenatal care earlier and also were more likely to quit

smoking prior to onset of prenatal care than those who chose traditional care.

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### Contraceptive Needs and Preferences of Bhutanese Women Refugees

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**Introduction:** Bhutanese immigrants are the first poor Hindus to arrive in the United States as refugees in large numbers, and health care providers are often not familiar with Bhutanese beliefs and attitudes toward contraception. The objectives of this qualitative study were to explore and identify Bhutanese contraceptive beliefs and practices to facilitate provision of culturally sensitive contraceptive services. **Background:** All contraceptive methods, except abortion and emergency contraception, are considered acceptable to Hindi people. Sex outside marriage is prohibited in this culture, and sexual health is often considered a taboo topic. Women are generally not educated about contraceptive options until after the birth of their first child; however, contraception and family planning services were widely used and accepted in Bhutanese refugee camps. **Methods:** Individual interviews were conducted with 14 Bhutanese women in the Nepali language. The interviews were audio recorded then later translated and transcribed verbatim. The interviews were evaluated for common themes and quotes. **Results:** The interviews revealed contraception is a private matter for Bhutanese women. They are comfortable talking about pregnancy and other health issues rather than contraception. However, contraception is known about and accepted in Bhutanese culture. There are no religious prohibitions regarding contraception. The medroxyprogesterone acetate injection was the most common method of contraception. None of the Bhutanese women were using long-term contraception such as intrauterine devices. Women were hesitant to use contraception because of the concerns about menstrual side effects and fears about infertility. Contraception appeared to be used only after the ideal family size and composition were met and only if women were married. Single women did not use any contraception. Most of the women agreed that they discussed contraception with married women, as a source of information. Most women were exposed to an explanation of contraceptive methods at the hospital after the birth of their first child. **Discussion:** These findings inform midwives and other health care providers about Bhutanese women's beliefs so that they can provide culturally congruent contraceptive counseling.

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### Side Effects of Antiretroviral Therapy (ART) Are Associated with Depression in Chinese Individuals with HIV: A Mixed Methods Study

Wei-Ti Chen, CNM, RN, DNSc (Yale University)

**Purpose/Aim:** This study examined experiences of antiretroviral therapy (ART) side effects among Chinese people living with HIV/AIDS and evaluating their relationship with

depressive mood. **Hypotheses:** Chinese individuals with HIV who had severe ART side effect symptoms will experience more depression compare to individuals who had less side effect symptoms from ART. **Background:** A national ART is now widely available in China. This growing availability of ART has changed the prospect of HIV/AIDS management. Although some patients with HIV can overcome initial side effects, without appropriate treatments, side effects could lead to challenging situations, including decreasing adherence and quality of life. **Design:** This mixed methods study was conducted from July 2005 to March 2008 at Beijing's Ditan Hospital. Inclusion criteria were individuals who were HIV positive, Mandarin-speaking, at least 18 years old, and willing to and physically capable of participating. **Methods:** In-depth interviews were conducted in Mandarin with 29 individuals. Interviews took one hour and were conducted in a private office at the hospital. A quantitative survey was developed, tested, and administered to 120 individuals. **Results:** Common symptoms included digestive discomfort, pancreatitis skin issues, numbness, memory loss, nightmares, and dizziness. These side effects not only brought physical discomfort, but also interfered with everyday activities. Multiple regression analysis revealed that participants who suffered from more severe side effects were more depressed after controlling for effects of social support, knowledge of the medications, and general health. **Conclusions:** Antiretroviral therapy side effects are one of the reasons that Chinese individuals with HIV/AIDS delay or stop taking the medicine. The psychological and physical demands of coping with medication side effects can be overwhelming. Enhanced social support and educating patients with HIV/AIDS on up-to-date ART knowledge might enhance adherence. Self-management intervention should be developed and included in the ART initiation counseling and carefully followed thereafter.

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### Exploring Women's Values, Choices, Expectations, and Outcomes for Birth After Cesarean

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**Purpose/Aim:** To explore women's values and expectations about birth after cesarean during decision making to better inform the design of strategies to support women to achieve consistency between their values, birth expectations, and birth experiences. **Research Questions:** What reasons underpin the choices women make about method of birth after cesarean? What do women value and expect from their birth choices after cesarean? What factors influence consistency between choice and outcome? **Significance/Background:** Shared decision making around birth after cesarean necessitates shared understanding of individual values and expectations of women. Reduction in dissonance between providers and women is needed to achieve high-quality health decisions and outcomes. **Methods:** One hundred and eighty-seven women participating in a decision-aid trial for birth after cesarean

wrote about their choices for birth at 36 to 38 weeks' gestation. At 6 to 8 weeks after the birth, 168 also wrote about their experiences of birth, satisfaction with the decision process, and health after the birth. Narrative analysis identified values and expectations underpinning birth decisions and the extent to which these were realized. **Findings:** Decision making was difficult for many women, and emotions such as fear and anxiety were expressed as women explained their different birth choices. Avoidance of the previous cesarean experience, an expectation of a "better" or "faster" recovery, and issues around "safety" for the baby, were common reasons given for trial of labor as well as for elective repeat cesarean. Provider preferences were influential, and women's need for information about their options underpinned levels of confidence and certainty during decision making. Satisfaction with the birth experience and adherence to choice largely depended on practice patterns of the birth setting, commitment by providers to support choice, and women's strength of preference or commitment to their birth choice. **Discussion:** Women do not always choose the mode of birth that providers expect them to. Greater understanding and support of individual values and expectations of women is needed to effectively support shared decision making for birth after cesarean.

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### Group Prenatal Care: Model Fidelity and Outcomes

Gina Novick, CNM, PhD (Yale University); Allecia E. Reid, PhD (Yale University); Jessica Lewis, MFT (Yale University); Trace Kershaw, PhD (Yale University); Sharon S. Rising, CNM, MSN (Centering Healthcare Institute); Jeannette R. Ickovics, PhD (Yale University)

**Purpose:** To study the association of process and content fidelity to the CenteringPregnancy model with perinatal outcomes. We examined 2 types of fidelity: *process fidelity* reflected how facilitative leaders were and how involved participants were in each session, and *content fidelity* reflected whether recommended content was discussed in each group session. **Hypotheses:** We hypothesized that participants in CenteringPregnancy groups with higher fidelity to facilitative group process and to content recommendations would have a lower likelihood of preterm birth, more adequate care, and higher likelihood of initiating breastfeeding. **Significance/Background:** CenteringPregnancy provides prenatal care to women in groups. In a randomized controlled trial comparing CenteringPregnancy with individual care, CenteringPregnancy reduced the likelihood of preterm birth by 33%, reduced the likelihood of inadequate care, and increased breastfeeding initiation. This model, therefore, shows promise for improving perinatal outcomes, particularly the intractable problem of preterm birth. However, there is likely variation in how the model is implemented in clinical practice, which may be associated with efficacy and, therefore, variation in outcomes. **Methods:** We conducted a secondary analysis of data from the clinical trial that demonstrated improved rates of preterm birth, adequate care, and breastfeeding initiation in women receiving CenteringPregnancy care. The sample included 519 women aged 14 to 25 years receiving group prenatal care in 2 urban clinics. Fidelity was rated at each group

prenatal care session by a trained researcher. Preterm birth and adequacy of care were abstracted from medical records. Participants self-reported breastfeeding initiation 6 months postpartum. **Findings:** Controlling for clinical predictors, greater process fidelity was associated with significantly lower odds of both preterm birth ( $B = -0.43$ , Wald  $\chi^2 = 8.65$ ,  $P = .001$ ) and excessive utilization of care ( $B = -0.29$ , Wald  $\chi^2 = 3.91$ ,  $P = .05$ ). Greater content fidelity was associated with lower odds of excessive utilization of care ( $B = -0.03$ , Wald  $\chi^2 = 9.31$ ,  $P = .001$ ). **Discussion:** Understanding the impact of fidelity to the CenteringPregnancy model can contribute to developing a better understanding of how to implement this model to further enhance outcomes. Training in facilitative leadership for group prenatal care should include developing an awareness of the critical role that creating a participatory atmosphere may have in improving outcomes and reassurance that content suggestions are simply recommendations, not requirements.

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### Identification of Sensitive Predictors of Levator Ani Tear during First Complex Vaginal Birth

Lisa Kane Low, CNM, PhD (University of Michigan); Ruth Zielinski, CNM, PhD (Western Michigan University); Yebin Tao, MPH (University of Michigan); Catherine Brandon, MD, MS (University of Michigan); Janis Miller, PhD, APRN (University of Michigan)

**Objective:** To determine maternal characteristics and birth events most predictive of increasing severity of levator ani tears, a recognized predisposing factor to pelvic floor disorders later in a woman's lifespan, so that prevention strategies may be developed. **Significance:** Several studies link vaginal birth with levator ani tears resulting in increased risk of developing pelvic floor disorders later in life. The events of vaginal birth that contribute to development of levator ani tears and how these factors are linked are not explicitly known. Prior retrospective investigations indicated age greater than 33 years, use of forceps or vacuum, more than 150 minutes in second stage, anal sphincter tear, or macrosomic infant greater than 4000 grams were risk factors for levator ani tears. Taken together, we refer to women who had at least one of these factors as having a "complex" birth. **Methods:** We purposefully recruited and enrolled primiparous women immediately postpartum who experienced a complex vaginal birth. Participants were evaluated with magnetic resonance imaging (MRI) 2 months postpartum. Severity level of levator ani tears was graded by degree of muscle volume loss measured on an ordinal scale as: 0) none, 1) less than 50% loss unilateral, 2) greater than or equal to 50% unilateral or less than 50% bilateral, and 3) greater than or equal to 50% bilateral. During analysis additional risk factors considered included episiotomy, infant head circumference, duration of active pushing, and use of epidural and oxytocin. Ordinal logistic regression was used for analysis with significance at  $P < .05$  for univariate predictors. **Findings:** Ninety women successfully completed the MRI and the majority (64.4%) showed no visible levator ani muscle loss, 10% showed only minor

muscle volume loss, with 25.8% in severe muscle loss categories. Significant predictors of tear severity were time spent in active pushing ( $P = 0.04$ ), not total time in second stage, and age ( $P = 0.02$ ). Use of episiotomy was not statistically significant ( $P = 0.05$ ). **Discussion:** Despite recruiting women who experienced a complex birth, only about a quarter actually had clinically relevant levator ani tears. In this investigation of at-risk women, significant predictors of levator ani tear severity included increasing age and duration of active pushing. When considering prevention, age is not modifiable, but monitoring active pushing time and potentially avoiding episiotomy warrant further investigation. **Funding:** NIH Funding R21HD049818 and P50HD044406 002.

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### Life Course Patterns and Risky Health Behaviors in Incarcerated Women

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**Purpose/Aim:** The purpose of this secondary analysis was to examine the life course patterns associated with risky health behaviors in a sample of 15 incarcerated women who participated in the *Life Histories of Women in Prison, 1986–1987* study. **Research Questions:** The research questions that guided this study included: What types of life events comprised these women's lives and how did women respond to these events? In what risky behaviors had they engaged? Are there distinguishable combinations of events, their timing, and women's responses to these events that were associated with their risky health behaviors? **Significance/Background:** Incarcerated women have long been recognized as living troubled and chaotic lives. Because they have been identified as a high-risk population with similarities to women with HIV, understanding the life patterns of incarcerated women might shed light on the factors playing a role in women's involvement in HIV-related risky behaviors. The Life Course Theory and the concept of cumulative advantage and disadvantage guided the identification of pathways to risk behaviors associated with HIV and other threats to physical and psychosocial well-being. **Methods:** Qualitative person-centered analyses of data from questionnaires and life history interviews were conducted to examine the distinctive variations in women's lives and involved the identification of life events and risky health behaviors across the lifespan. Limitations included inability to clarify women's responses and inability to determine causal relationships. **Findings:** All women described life events characteristic of cumulative disadvantage that began in childhood. Women who described serial/overlapping disadvantage tended to become involved in risky health behaviors during pre- or early adolescence. Those reporting isolated disadvantage were more likely to delay involvement in risky health behaviors until later in adolescence or adulthood. **Discussion:** The findings indicate the need for early, trauma-informed interventions that incorporate women's unique experiences with and responses to physical, emotional, and psychological trauma. Such interventions might help to minimize

women's involvement in risky health behaviors and improve health outcomes for women with chaotic lives. Replication of this study in other samples of women with chaotic lives will strengthen the evidence to inform the development of effective interventions.

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### Helping Women with the Blues: An Evaluation of an Effective Screening Program for Perinatal Depression

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**Purpose/Aim:** To evaluate the outcomes of a program designed to standardize mental health screenings and facilitate entry to mental health care for low-income inner-city pregnant and postpartum women. **Research Questions:** 1) Identify the most common stressors affecting pregnant and postpartum women 2) Determine the percentage of women who engage in mental health care and whether adherence with mental health care varies by setting or pregnancy status; and 3) Describe the changes in depressive symptoms from early pregnancy to 6 weeks postpartum. **Significance/Background:** Undetected and untreated depression is associated with poorer maternal and neonatal outcomes. Unfortunately, mental health resources are limited, particularly for vulnerable women living in impoverished communities. Our program was designed to maximize mental health resources. Key elements include: 1) provider training, 2) collocated mental health services, and 3) inclusion of a mental health "meet-and-greet" visit into the primary care visit for women in crisis. **Methods:** Data on depressive symptoms, reasons for referral to mental health services, and adherence to care were abstracted from the medical records of pregnant and postpartum women receiving care from January 1, 2010 to June 30, 2012. **Findings:** Our protocol resulted in high rates of screening for and adherence to mental health care; 95.0% of pregnant women ( $n = 425$ ) and 90.0% of postpartum women ( $n = 269$ ) were screened for depressive symptoms. Higher rates of depressive symptoms, as measured by a positive Patient Health Questionnaire-2 (PHQ-2) score, were seen prenatally (43%) than in early postpartum (7%), although clinical depression was more common postpartum than during pregnancy. For women who continued care and were rescreened postpartum ( $n = 118$ ), 48% had depressive symptoms neither in pregnancy nor postpartum, 41% experienced depressive symptoms only in pregnancy, 6% reported symptoms after birth not in pregnancy, and 5% were symptomatic in both time periods. Fifty percent of referrals were prompted by significant psychosocial factors such as personal or family stress, need for concrete services, and prior history of depression, anxiety, or trauma. Compliance with recommended care was significantly higher for care offered on-site ( $P < .01$ ). Of the pregnant ( $n = 110$ ) and postpartum ( $n = 22$ ) women referred for mental health services, 57.8% of pregnant women and 84.2% of postpartum women were known to have kept their appointments in-house compared to only 11.1% of pregnant and 33.3% of postpartum women who were referred to

another facility. **Discussion:** Our results highlight differences in the prevalence of depressive symptoms and clinical depression in pregnant and postpartum women. In-house mental health services were associated with significantly higher attendance rates for mental health care. Implementing a stan-

dardized screening and referral system, with the majority of services provided on-site, resulted in high screening rates and compliance with mental health care.

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