Both physician-led primary care practices and integrated health delivery systems have established medical homes. We report outcomes for both (see Exhibit 5). However, most studies included in our analysis evaluated physician-led practices, and our comments focus on their results.

We report outcomes for both general patient populations and for the higher-risk elderly or chronically-ill patients within medical homes.[79]

General patient populations in physician-led practices. Among general patient populations, we find that medical homes, on average, reduce emergency department visits by 5%, hospital admissions by 3%, and specialist visits by 3%. We also find evidence that total medical costs are reduced by 2% (see Exhibit 5).

These estimates are based on eight medical home studies, three of which evaluate PCMHs that include financial incentives to reduce utilization or cost.[80]

High-risk patient populations in physician-led practices. We find that medical homes, on average, reduce emergency department visits by 6% among higher-risk patients. We did not find other reliable effects for high-risk patients.[81]

[79] The Medicaid Health Home, a more recent variant of the medical home model, focuses on patients with serious mental illness and substance misuse disorders. WSIPP has reviewed the evidence on health homes; those findings are reported on our website: http://www.wsipp.wa.gov/BenefitCost/Program/496

[80] See: Rosenthal, M.B., Alidina, S., Friedberg, M.W., Singer, S.J., Eastman, D., Li, Z., & Schneider, E.C. (2016). A difference-in-difference analysis of changes in quality, utilization and cost following the Colorado multi-payer patient-centered medical home pilot. *Journal of General Internal Medicine, 31*(3), 289-296; Friedberg, M.W., Schneider, E.C., Friedberg, M.W., Schneider, E.C., Friedberg, M.W., Schneider, E.C., Rosenthal, M.B., . . . Volpp, K.G. (2015). Effects of a medical home and shared savings intervention on quality and utilization of care. *Jama Internal Medicine, 175*(8), 1362-1368; Cuellar, A., Helmchen, L.A., Gimm, G., Want, J., Burla, S., Kells, B.J., Kicinger, I., . . . Nichols, L.M. (2016). The CareFirst patient-centered medical home program: Cost and utilization effects in its first three years. *Journal of General Internal Medicine,* 1-7.

[81] Sinaiko and colleagues find a significant 4.2% reduction in total costs for high morbidity patients in their meta-analysis of seven medical home implementations. The authors, in collaboration with the researchers evaluating these implementations, were able to impose a consistent definition of high-risk across the studies (two or more comorbidities). Sinaiko, A., Landrum, M., Meyers, D., Alidina, S., & Rosenthal, M. (2016). *A meta-analysis of patient centered medical home initiatives.* PowerPoint presentation prepared for the ASHE 2016 Meetings.

I. Topics Examined but Meta-Analyses Not Supported by Literature

There were not sufficient studies to produce meta-analytic results for some topics reviewed in collaboration with the CEbP. This appendix summarizes the relevant literatures. The topics include:

- Medication-assisted therapies for opioid use during pregnancy—buprenorphine vs. methadone
- Long-acting reversible contraception (LARC)
- Prenatal depression screening
- Chronic Care Model (CCM) interventions
- Collaborative primary care for posttraumatic stress disorder

Medication-assisted therapies for opioid use during pregnancy – buprenorphine vs. methadone

Opioid use—including heroin use and prescription drug misuse—is on the rise.[82] Opioid use during pregnancy is strongly linked to increased maternal and neonatal complications, including third trimester bleeding, low birthweight delivery, neonatal mortality, and neonatal abstinence syndrome (narcotic withdrawal symptoms).[83]

Methadone maintenance therapy has been the recommended treatment for pregnant opioid users since the late 1960s. In recent years, buprenorphine has also been used in this population. These two treatments, while both used as a medication-assisted therapy for opioid use disorder, function differently in the body and have different applications in the real world. Methadone is an opioid and is currently considered the "standard of care" for treating pregnant women with opioid use disorder. Patients must visit a dispensing clinic every day to receive their dose of methadone. Buprenorphine is a semi-synthetic, partial agonist opioid receptor modulator—it blocks opioid receptors but is not a full opioid. This medication has been approved for use in opioid-dependent adults since 2002.[84] Buprenorphine can be prescribed by a doctor in a clinic-based setting, in which patients may fill the prescription on their own. For both medications, there is concern about adverse pregnancy and birth outcomes among users.

We located no studies investigating the effects of buprenorphine versus no medication-assisted treatment in pregnant populations. Therefore, we investigated head-to-head studies of two common agonist therapies for

[82] Brogly, S.B., Saia, K.A., Walley, A.Y., Du, H.M., & Sebastiani, P. (2014). Prenatal buprenorphine versus methadone exposure and neonatal outcomes: systematic review and meta-analysis. *American Journal of Epidemiology, 180*(7), 673-686.
[83] Minozzi, S., Amato, L., Bellisario, C., Ferri, M., & Davoli, M. (2013). Maintenance agonist treatments for opiate-dependent pregnant women. The Cochrane Library.
[84] Brogly et al. (2014).

opioid-dependent pregnant women: methadone (standard of care) and buprenorphine ("new" treatment). With literature review support from CEbP, we reviewed 64 articles.

We find insufficient evidence to produce meta-analytic results or conduct a benefit-cost analysis on this topic at this time, for two main reasons. First, most studies evaluated treatments in a manner that does not reflect the real world application of these treatments. In randomized controlled trials, all subjects (including buprenorphine-treated subjects) must attend clinics daily to receive their dose of either methadone or buprenorphine. Therefore, effect sizes observed from these studies do not capture the real world difference between methadone and buprenorphine therapies. Second, none of the studies reviewed reported an intent-to-treat analysis. There is differential attrition for methadone and buprenorphine across all studies. Most studies report greater attrition in the buprenorphine group than the methadone group. Since there are no data on a significant proportion of participants, we do not have sufficient evidence to calculate reliable effect sizes comparing these treatments.

Long-acting reversible contraception

We examined studies evaluating the effectiveness of long-acting reversible contraception (LARC) methods for preventing unplanned pregnancies. LARC methods include intrauterine devices (IUD) and birth control implants.

Almost half (49%) of pregnancies in the United States are unplanned.[85] A recent study estimated that the annual medical costs of unplanned pregnancy in the United States were $4.6 billion, and that 53% of those pregnancies were due to failing to consistently use contraception.[86] Although they have higher up-front costs, LARC methods are roughly as effective as sterilization in preventing pregnancy during the first year of typical use and significantly more effective than birth control pills, the patch, or the ring.[87]

In cooperation with the CEbP, we conducted a search for quasi-experimental and randomized controlled trials of LARC to prevent unplanned pregnancy. We identified 38 studies for a more thorough review. Thirty-four of those studies were excluded from our analysis for falling outside our search parameters. For example, these studies did not report on LARC methods or on the outcomes of interest (particularly unintended pregnancies). The remaining four studies were rejected for failing to satisfy WSIPP's standards for methodological rigor. Key reasons for rejection included the use of self-assigned groups for the treatment group or significant and uncontrolled differences between the treatment and control groups.

Prenatal depression screening

Rates of depression for pregnant women are thought to be substantial, peaking at about 17% for women in their third trimester.[88] Research has linked prenatal mental health problems with a variety of poor outcomes,

[85] Finer, L.B., & Zolna, M.R. (2011). Unintended pregnancy in the United States: incidence and disparities, 2006. *Contraception, 84*(5), 478-485.
[86] Trussell, J., Henry, N., Hassan, F., Prezioso, A., Law, A., & Filonenko, A. (2013). Burden of unintended pregnancy in the United States: potential savings with increased use of long-acting reversible contraception. *Contraception*, *87*(2), 154-161.
[87] http://www.acog.org/Patients/FAQs/Long-Acting-Reversible-Contraception-LARC-IUD-and-Implant
[88] Bennett, H.A., Einarson, A., Taddio, A., Koren, G., & Einarson, T.R. (2004). Prevalence of depression during pregnancy: systematic review. *Obstetrics & Gynecology*, *103*(4), 698-709.

including an increased risk of preterm birth,[89] postpartum mental health problems,[90] and poor infant cognitive development.[91]

In cooperation with the CEbP, we searched for studies evaluating the effectiveness of prenatal screening for maternal depression as well as screening in conjunction with pharmacological treatments and/or psychotherapy. We attempted to identify studies that evaluated how prenatal depression screening or screening plus treatment could affect maternal outcomes, like postpartum depression, and/or infant outcomes, including pre-term birth. We identified only two studies that satisfied these search parameters. One study failed to separately analyze pregnant and postpartum women. The other study had several methodological problems that included small sample sizes and high attrition rates. At this time, we have insufficient evidence to conduct a meta-analysis of pre-partum depression screening.

Chronic Care Model interventions

The Chronic Care Model (CCM) focuses on the care for patients with conditions that require ongoing management, such as diabetes, coronary heart disease, or asthma. The model emphasizes effective team care, support for patient self-management, decision support to increase use of evidence-based practices, patient registries and other supportive information technology, and links to available community resources.[92] Elements of the CCM have been adopted in the patient-centered home model.

In cooperation with the CEbP, we identified several evaluations of CCM implementations. Among the studies identified for our review, a few measured hospital and emergency department utilization outcomes for patients in CCM practices. Unfortunately, these studies either had poor research designs or other methodological problems that limited the usefulness of findings. Several studies reported health related outcomes, such as changes in HbA1c, cholesterol levels, or blood pressure, for patients in CCM practices. However, each study typically focused on patients with a given chronic condition (i.e. diabetes). At this time, we did not feel that there were a sufficient number of studies for a given patient population to pursue a meta-analysis for condition-specific outcomes.

Collaborative primary care for posttraumatic stress disorder

Many individuals with posttraumatic stress disorder (PTSD) do not seek mental health treatment and their symptoms can go undetected in primary care settings.[93] Even when PTSD symptoms are detected in primary care settings, patients may not receive adequate treatment.

At this time, we do not find sufficient evidence to produce meta-analytic results on the impact of collaborative primary care for individuals with PTSD.[94] We conducted a literature review and identified ten

[89] Grigoriadis, S., VonderPorten, E.H., Mamisashvili, L., Tomlinson, G., Dennis, C.L., Koren, G., Steiner, M. (2013). The impact of maternal depression during pregnancy on perinatal outcomes: A systematic review and meta-analysis. *The Journal of Clinical Psychiatry, 74*(4), e321–41.
[90] Thoppil, J., Riutcel, T.L., & Nalesnik, S.W. (2005). Early intervention for perinatal depression. *American Journal of Obstetrics and Gynecology*, *192*(5), 1446-1448.
[91] Brouwers, E.P., van Baar, A.L., & Pop, V.J. (2001). Maternal anxiety during pregnancy and subsequent infant development. *Infant Behavior and Development*, *24*(1), 95-106.
[92] See Pearson, M.L., Wu, S., Schaefer, J., Bonomi, A.E., Shortell, S.M., Mendel, P.J., Marsteller, J.A., . . . Keeler, E.B. (2005). Assessing the implementation of the chronic care model in quality improvement collaboratives. *Health Services Research, 40*(4), 978-996; Coleman, K., Austin, B., Brach, C., & Wagner E. (2009). Evidence on the chronic care model in the new millennium. *Health Affairs, 28*(1), 75-85.
[93] Taubman-Ben-Ari, O., Rabinowitz. J., Feldman, D., & Vaturi, R. (2001). Post-traumatic stress disorder in primary care settings: prevalence and physicians' detection. *Psychol Med, 31*, 555–60.

evaluations to be examined more thoroughly. Of these evaluations, eight were excluded from further analysis because they did not meet WSIPP's methodological standards (i.e. inadequate comparison groups and high attrition rates), did not report our primary outcome of interest (PTSD symptom severity), and did not fit the definition of collaborative primary care.[95] Two studies did meet methodological standards, reported PTSD outcomes, and were defined as collaborative primary care. However, we could not calculate a reliable effect size estimate at this time because these studies varied across interventions (i.e. types of care management, follow-up periods, and populations).

[94] WSIPP has conducted meta-analyses and benefit-cost analyses on other treatments for posttraumatic stress disorder for cognitive behavioral therapy (CBT) for adult posttraumatic stress disorder and Eye Movement Desensitization and Reprocessing (EMDR) for adult posttraumatic stress disorder. For the most up-to-date results, please visit: http://www.wsipp.wa.gov/BenefitCost/Program/241 and http://www.wsipp.wa.gov/BenefitCost/Program/635, respectively.

[95] Excluded studies used collaborative care models but did not specifically focus on patients treated in primary care settings.

II. Studies used in the Meta-Analyses

Intensive behavioral interventions for smoking cessation during pregnancy

Albrecht, S.A., Caruthers, D., Patrick, T., Reynolds, M., Salamie, D., Higgins, L.W., . . . Mlynarchek, S. (2006). A randomized controlled trial of a smoking cessation intervention for pregnant adolescents. *Nursing Research, 55*(6), 402-410.

Bullock, L., Everett, K.D., Mullen, P.D., Geden, E., Longo, D.R., & Madsen, R. (2009). Baby BEEP: A randomized controlled trial of nurses' individualized social support for poor rural pregnant smokers. *Maternal and Child Health Journal, 13*(3), 395-406.

Cook, C., Ward, S., Myers, S., & Spinnato, J. (1995). A prospective, randomized evaluation of intensified therapy for smoking reduction in pregnancy. *American Journal of Obstetrics and Gynecology: Part 2, 172*(1), 290.

Dornelas, E.A., Magnavita, J., Beazoglou, T., Fischer, E.H., Oncken, C., Lando, H., Greene, J., Barbagallo, J., Stepnowski, R., & Gregonis, E. (2006). Efficacy and cost-effectiveness of a clinic-based counseling intervention tested in an ethnically diverse sample of pregnant smokers. *Patient Education and Counseling, 64,* 342-349.

El-Mohandes, A.A., El-Khorazaty, M.N., Kiely, M., & Gantz, M.G. (2011). Smoking cessation and relapse among pregnant African-American smokers in Washington, DC. *Maternal and Child Health Journal, 15,* 96-105.

Ershoff, D.H., Quinn, V.P., Boyd, N.R., Stern, J., Gregory, M., & Wirtschafter, D. (1999). The Kaiser Permanente prenatal smoking cessation trial: when more isn't better, what is enough? *American Journal of Preventive Medicine, 17*(3), 161-168.

McBride, C.M. (1999). Prevention of relapse in women who quit smoking during pregnancy. *American Journal of Public Health, 89*(5), 706-711.

Naughton, F., Prevost, A.T., Gilbert, H., & Sutton, S. (2012). Randomized controlled trial evaluation of a tailored leaflet and SMS text message self-help intervention for pregnant smokers (MiQuit). *Nicotine & Tobacco Research, 14*(5), 569-577.

Patten, C.A., Windsor, R.A., Renner, C.C., Enoch, C., Hochreiter, A., Nevak, C., . . . Brockman, T. (2010). Feasibility of a tobacco cessation intervention for pregnant Alaska Native women. *Nicotine and Tobacco Research, 12*(2), 79-87.

Rigotti, N.A., Park, E.R., Regan, S., Chang, Y., Perry, K., Loudin, B., & Quinn, V. (2006). Efficacy of telephone counseling for pregnant smokers. *Obstetrics & Gynecology, 108*(1), 83-92.

Ruger, J.P., Weinstein, M.C., Hammond, S.K., Kearney, M.H., & Emmons, K.M. (2008). Cost-effectiveness of motivational interviewing for smoking cessation and relapse prevention among low-income pregnant women: A randomized controlled trial. *Value in Health, 11*(2), 191-198.

Secker-Walker, R.H., Solomon, L.J., Flynn, B.S., Skelly, J.M., Lepage, S.S., Goodwin, G.D., & Mead, P.B. (1994). Individualized smoking cessation counseling during prenatal and early postnatal care. *American Journal of Obstetrics and Gynecology, 171*(5), 1347-1355.

Secker-Walker, R.H., Solomon, L.J., Flynn, B.S., Skelly, J.M., & Mead, P.B. (1998). Reducing smoking during pregnancy and postpartum: physician's advice supported by individual counseling. *Preventive Medicine, 27*(3), 422-430.

Sexton, M., & Hebel, J.R. (1984). A clinical trial of change in maternal smoking and its effect on birth weight. *Jama: the Journal of the American Medical Association, 251*(7), 911-915.

Stotts, A.L., Diclemente, C.C., & Dolan-Mullen, P. (2002). One-to-one: A motivational intervention for resistant pregnant smokers. *Addictive Behaviors, 27*(2), 275-292.

Stotts, A.L., DeLaune, K.A., Schmitz, J.M., & Grabowski, J. (2004). Impact of a motivational intervention on mechanisms of change in low-income pregnant smokers. *Addictive Behaviors, 29*(8), 1649-1657.

Stotts, A.L., Groff, J.Y., Velasquez, M.M., Benjamin-Garner, R., Green, C., Carbonari, J.P., & DiClemente, C.C. (2009). Ultrasound feedback and motivational interviewing targeting smoking cessation in the second and third trimesters of pregnancy. *Nicotine & Tobacco Research, 11*(8), 961-968.

Contingency management for smoking cessation during pregnancy

Heil, S.H., Higgins, S.T., Bernstein, I.M., Solomon, L.J., Rogers, R.E., Thomas, C.S., . . . Lynch, M.E. (2008). Effects of voucher-based incentives on abstinence from cigarette smoking and fetal growth among pregnant women. *Addiction (Abingdon, England), 103*(6), 1009-18.

Higgins, S.T., Heil, S.H., Solomon, L.J., Bernstein, I.M., Lussier, J.P., Abel, R.L., . . . Badger, G.J. (2004). A pilot study on voucher-based incentives to promote abstinence from cigarette smoking during pregnancy and postpartum. *Nicotine & Tobacco Research, 6(*6), 1015-20.

Higgins, S.T., Washio, Y., Lopez, A.A., Heil, S.H., Solomon, L.J., Lynch, M.E., . . . Bernstein, I.M. (2014). Examining two different schedules of financial incentives for smoking cessation among pregnant women. *Preventive Medicine, 68,* 51-57.

Ondersma, S.J., Svikis, D.S., Lam, P.K., Connors-Burge, V.S., Ledgerwood, D.M., & Hopper, J.A. (2012). A randomized trial of computer-delivered brief intervention and low-intensity contingency management for smoking during pregnancy. *Nicotine & Tobacco Research, 14*(3), 351-60.

Tappin, D., Bauld, L., Purves, D., Boyd, K., Sinclair, L., MacAskill, S., . . . Cessation in Pregnancy Incentives Trial Team. (2015). Financial incentives for smoking cessation in pregnancy: randomised controlled trial. *Bmj (clinical Research Ed.), 350,* h134.

Tuten, M., Fitzsimons, H., Chisolm, M.S., Nuzzo, P.A., & Jones, H.E. (2012). Contingent incentives reduce cigarette smoking among pregnant, methadone-maintained women: results of an initial feasibility and efficacy randomized clinical trial. *Addiction, 107*(10), 1868-1877.

Nicotine replacement treatment during pregnancy

Berlin, I., Grange, G., Jacob, N., & Tanguy, M.L. (2014). Nicotine patches in pregnant smokers: randomised, placebo controlled, multicentre trial of efficacy. *BMJ, 348,* g1622.

Coleman, T., Cooper, S., Thornton, J.G., Grainge, M.J., Watts, K., Britton, J., & Lewis, S. (2012). A randomized trial of nicotine-replacement therapy patches in pregnancy. *Obstetrical & Gynecological Survey, 67(*7), 387-388.

El-Mohandes, A.A., Windsor, R., Tan, S., Perry, D.C., Gantz, M.G., & Kiely, M. (2013). A randomized clinical trial of trans-dermal nicotine replacement in pregnant African-American smokers. *Maternal and Child Health Journal, 17(*5), 897-906.

Oncken, C., Dornelas, E., Greene, J., Sankey, H., Glasmann, A., Feinn, R., & Kranzler, H.R. (2008). Nicotine gum for pregnant smokers: a randomized controlled trial. *Obstetrics and Gynecology, 112*(4), 859-67.

Pollak, K.I., Oncken, C.A., Lipkus, I.M., Lyna, P., Swamy, G.K., Pletsch, P.K., . . . Myers, E.R. (2007). Nicotine replacement and behavioral therapy for smoking cessation in pregnancy. *American Journal of Preventive Medicine, 33*(4), 297-305.

Postpartum smoking relapse prevention

Jiménez-Muro, A., Nerín, I., Samper, P., Marqueta, A., Beamonte, A., Gargallo, P., . . . Rodríguez, G. (2013). A proactive smoking cessation intervention in postpartum women. *Midwifery, 29*(3), 240-245.

McBride, C.M. (1999). Prevention of relapse in women who quit smoking during pregnancy. *American Journal of Public Health, 89*(5), 706-711.

Reitzel, L.R., Vidrine, J.I., Businelle, M.S., Kendzor, D.E., Costello, T.J., Li, Y., . . . Wetter, D. W. (2010). Preventing postpartum smoking relapse among diverse low-income women: a randomized clinical trial. *Nicotine & Tobacco Research, 12*(4), 326-35.

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Interventions to prevent excessive gestational weight gain in the general population

Althuizen, E., Wijden, C.L.V.D., Mechelen, W.V., Seidell, J.C., & Poppel, M.N.M.V. (2012). The effect of a counseling intervention on weight changes during and after pregnancy: a randomised trial. *BJOG: an International Journal of Obstetrics & Gynecology, 120(*1), 92-99.

Barakat, R., Lucia, A., & Ruiz, J.R. (2009). Resistance exercise training during pregnancy and newborn's birth size: a randomised controlled trial. *International Journal of Obesity, 33*(9), 1048-1057.

Barakat, R., Pelaez, M., Lopez, C., Lucia, A., & Ruiz, J.R. (2013). Exercise during pregnancy and gestational diabetes-related adverse effects: a randomised controlled trial. *British Journal of Sports Medicine, 47*(10), 630-36.

Haakstad, L.A.H., & Bø, K. (2011). Effect of regular exercise on prevention of excessive weight gain in pregnancy: A randomised controlled trial. *The European Journal of Contraception and Reproductive Health Care, 16*(2), 116-125.

Hui, A.L., Ludwig, S.M., Gardiner, P., Sevenhuysen, G., Murray, R., Morris, M., & Shen, G.X. (2006). Community-based exercise and dietary intervention during pregnancy: A pilot study. *Canadian Journal of Diabetes, 30(*2), 169-175.

Hui, A.L., Back, L., Ludwig, S., Gardiner, P., Sevenhuysen, G., Dean, H.J., . . . Shen, G.X. (2014). Effects of lifestyle intervention on dietary intake, physical activity level, and gestational weight gain in pregnant women with different pre-pregnancy Body Mass Index in a randomized control trial. *BMC Pregnancy and Childbirth, 14*(1), 331-40.

Olson, C.M., Strawderman, M.S., & Reed, R.G. (2004). Efficacy of an intervention to prevent excessive gestational weight gain. *American Journal of Obstetrics and Gynecology, 191*(2), 530-536.

Polley, B.A., Wing, R.R., & Sims, C.J. (2002). Randomized controlled trial to prevent excessive weight gain in pregnant women. *International Journal of Obesity, 26*(11), 1494-1502.

Ronnberg, A.K., Ostlund, I., Fadl, H., Gottvall, T., & Nilsson, K. (2015). Intervention during pregnancy to reduce excessive gestational weight gain-a randomised controlled trial. *BJOG: an International Journal of Obstetrics & Gynaecology, 122*(4), 537-544.

Ruiz, J.R., Perales, M., Pelaez, M., Lopez, C., Lucia, A., & Barakat, R. (2013). Supervised exercise-based intervention to prevent excessive gestational weight gain: a randomized controlled trial. *Mayo Clinic Proceedings, 88*(12), 1388-97.

Smith, K.M. (2014). *The Blossom Project Online: Use of a behaviorally-based website to promote physical activity and prevent excessive gestational weight gain in previously sedentary pregnant women*. Digital Repository @ Iowa State University.

Stafne, S.N., Salvesen, K.A., Romundstad, P.R., Eggebø, T.M., Carlsen, S.M., & Mørkved, S. (2012). Regular exercise during pregnancy to prevent gestational diabetes: a randomized controlled trial. *Obstetrics and Gynecology, 119*(1), 29-36.

Interventions to prevent excessive gestational weight gain among women with obesity-related risk factors

Bogaerts, A.F., Devlieger, R., Nuyts, E., Witters, I., Gyselaers, W., & Van den Bergh, B.R. (2013). Effects of lifestyle intervention in obese pregnant women on gestational weight gain and mental health: a randomized controlled trial. *International Journal of Obesity, 37*(6), 814-21.

Dodd, J.M., Turnbull, D., McPhee, A.J., Deussen, A.R., Grivell, R.M., Yelland, L.N., . . . Robinson, J.S. (2014). Antenatal lifestyle advice for women who are overweight or obese. *Obstetrical & Gynecological Survey, 69*(6), 311-313.

Harrison, C.L., Lombard, C.B., Strauss, B.J., & Teede, H.J. (2013). Optimizing healthy gestational weight gain in women at high risk of gestational diabetes: a randomized controlled trial. *Obesity, 21*(5), 904-909.

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Luoto, R., Kinnunen, T.I., Aittasalo, M., Kolu, P., Raitanen, J., Ojala, K., Mansikkamäki, K., . . . Tulokas, S. (2011). Primary prevention of gestational diabetes mellitus and large-for-gestational-age newborns by lifestyle counseling: A cluster-randomized controlled trial. *Plos Medicine, 8*(5), e1001036.

Nobles, C., Marcus, B.H., Stanek, E.J., Braun, B., Whitcomb, B.W., Solomon, C.G., . . . Chasan-Taber, L. (2015). Effect of an exercise intervention on gestational diabetes mellitus: a randomized controlled trial. *Obstetrics and Gynecology, 125(*5), 1195-204.

Oostdam, N., van Poppel, M.N.M., Wouters, M.G.A.J., Eekhoff, E.M.W., Bekedam, D.J., Kuchenbecker, W.K.H., . . . Mechelen, W. van. (2012). No effect of the FitFor2 exercise programme on blood glucose, insulin sensitivity, and

birthweight in pregnant women who were overweight and at risk for gestational diabetes: Results of a randomised controlled trial. *BJOG: An International Journal of Obstetrics & Gynaecology, 119,* 1098-1107.

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Quinlivan, J.A., Lam, L.T., & Fisher, J. (2011). A randomised trial of a four-step multidisciplinary approach to the antenatal care of obese pregnant women. *Australian and New Zealand Journal of Obstetrics and Gynecology, 51*(2), 141-146.

Renault, K.M., Norgaard, K., Nilas, L., Carlsen, E.M., Cortes, D., Pryds, O., & Secher, N.J. (2014). The Treatment of Obese Pregnant Women (TOP) study: a randomized controlled trial of the effect of physical activity intervention assessed by pedometer with or without dietary intervention in obese pregnant women. *American Journal of Obstetrics and Gynecology, 210*(2), 134.el-9.

Thornton, Y.S., Smarkola, C., Kopacz, S.M., & Ishoof, S.B. (2009). Perinatal outcomes in nutritionally monitored obese pregnant women: a randomized clinical trial. *Journal of the National Medical Association, 101*(6), 569-577.

Vesco, K.K., Karanja, N., King, J.C., Gillman, M.W., Leo, M.C., Perrin, N., . . . Stevens, V.J. (2014). Efficacy of a group-based dietary intervention for limiting gestational weight gain among obese women: a randomized trial. *Obesity, 22*(9), 1989-96.

Group prenatal care

Fausett, M.B. (2014). *Centering Pregnancy (CP): A Longitudinal Correlational Study Designed to Evaluate Maternal and Fetal Outcomes After Participation in CP*.

Ford, K., Weglicki, L., Kershaw, T., Schram, C., Hoyer, P.J., & Jacobson, M.L. (2002). Effects of a prenatal care intervention for adolescent mothers on birth weight, repeat pregnancy, and educational outcomes at one year postpartum. *The Journal of Perinatal Education, 11*(1), 35-38.

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