Gestational Diabetes Crisis Education Curriculum

Objective: To increase the knowledge of pregnant women that are diagnosed with Gestational Diabetes about their disease and how they can help to control it with diet, exercise, and insulin administration.

Goals: Patients will be informed on the cause of gestational diabetes, instruction techniques for self-administration of insulin and self-monitoring of blood glucose levels, and how they can control their disease with diet and exercise. After completing this curriculum with health care providers, the patient will complete a post-test to ensure adequate knowledge of gestational diabetes and will demonstrate self monitoring blood glucose and insulin injection techniques.

1. Diabetes is a disease that affects the way your body controls how it converts food into energy. When you eat, your body changes the food you eat into glucose which is the main sugar that your body uses for energy. Your body uses glucose as the fuel to run the many different reactions that occur in your body's cells. An organ in your body called the pancreas produces a hormone called insulin that regulates the amount of glucose in your blood. Insulin is released from the pancreas when you eat a meal and it helps the cells in your body take up the glucose that is floating around in your blood to use in those important reactions within your cells.

2. Gestational Diabetes occurs in women with **impaired glucose tolerance** that is first detected during pregnancy and occurs in 2-4% of all pregnant women. During pregnancy the need for insulin increases because the body is under the stress of being pregnant and the placenta (an organ that develops during pregnancy to help provide nourishment and blood flow to the baby) produces hormones that work against insulin's ability to lower blood glucose levels. This causes the pregnant mothers to be glucose intolerant meaning that they have a tough time dealing with the extra glucose that is floating around in the blood. It is diagnosed by performing a Glucose Tolerance Test at your doctor's office when you are 24-28 weeks pregnant.
Risk factors for developing Gestational Diabetes include:

- strong family history of diabetes
- history of gestational diabetes with a previous pregnancy
- problems with being overweight
- History of a previous large birth weight baby (>9 lbs.)
- history of a previous stillbirth
- women in later child bearing years(>35years old)

3. The pregnant mother needs to understand that gestational diabetes is a very serious disease and there are **complications** that affect both the child and the mother if she does not take control of her health care. Some of these complications include:
    - Within 5 to 10 years, moms have a 30-40% chance of developing Type 2 Diabetes Mellitus if they do not control their blood glucose levels during pregnancy.
    - Increase in blood pressure, which affects the mother and baby.

- (Polyhydramnios) Increased amount of uterine sac fluid can cause premature labor.
- (Macrosomia) Increase in the size of the baby from uncontrolled blood glucose levels during pregnancy. This may cause labor to be difficult, which places the child at risk for birth trauma and increases the need for cesarean delivery.
- Low birth weight baby caused by impaired placental blood flow.
- Birth defects, especially cardiac and spinal cord defects, are usually seen when blood glucose levels are not controlled in the first 7 to 8 weeks of pregnancy but are still possible in gestational diabetic mothers.
- Stillbirth-death to the baby prior to delivery. This complication occurs less frequently when glucose levels are well controlled.
- (Hypoglycemia)Low blood glucose levels. The baby can develop low blood glucose levels after delivery because for 40 weeks they have lived in an environment with high blood glucose levels and in response their pancreas has produced enough insulin to deal with that high level. At birth, the baby is not receiving the extra glucose from the mom but his/her pancreas is still producing extra amounts of insulin causing a risk of low blood glucose levels.

4. Important **steps to control your gestational diabetes** and make sure that you deliver a health baby.
   1) The best way to control your blood glucose levels with gestational diabetes is with exercise, diet control and insulin administration.
      Exercise: Helps to control the balance between sugar and insulin in your blood. Physical activity burns up sugar so any type of activity can alter your diet and insulin needs. It is recommended that you perform your exercise at the same time each day and do not suddenly vary the intensity of your exercise. If you do make a change in your exercise pattern you must check your blood glucose levels before, during and after to see if you need to make adjustments in the amount of food or insulin you need to maintain your blood glucose levels adequately. Remember also that you are pregnant so you want to exert energy wisely. Start slowly and maintain your present program during pregnancy. Walking for 20-30 minutes per day is the best exercise for a pregnant woman. (Provide the mothers with pamphlets on exercise and diabetes)
      Diet: Controlling what you eat is the best way to control your blood glucose level. (Information for the presenter: The Diabetic Education Center has a dietician that has a lot of information and a protocol that she follows for teaching gestational diabetics about diet control and a Diabetic Pitfall Avoidance Curriculum was developed by Chris Watts which focuses on diet control. These are two aspects of the DEC that are already in place and could be helpful to teach the patients about diet control for Gestational Diabetes.) The diet control that is best for gestational diabetes involves **carbohydrate counting** with a limited amount of 225-315 grams of carbohydrates per day and **not worry about counting calories**. You need to split this amount of carbohydrates into three small meals and three small snacks. You also need to eat fruit and drink fruit juice along with the meals to provide natural sugars to your diets but make sure that you limit the portions that you are taking in. Limit your portions by measuring the fruits to determine the

carbohydrate content and then supplement that amount into your carbohydrate count for that meal and don't drink 10 oz of orange juice with every meal. All meats need to be small servings that are baked, broiled, or roasted. You need to avoid fried foods, cooking with fat, high-fatty foods, excessive salt, and sugar products. We encouraged eating high fiber foods and drinking skim or low-fat milk.

2) **Monitor Blood Glucose Levels**: The most important aspect of gestational diabetes is controlling your blood glucose level. So you need to monitor and record your blood glucose levels on a daily basis because it provides information to the patient and the physician on how well you are controlling your gestational diabetes. It is recommended to test your blood glucose levels before each meal, snack, and 1-2 hours after each meal for the first few weeks to determine a pattern in blood glucose levels. After a pattern is developed the blood glucose level needs to be monitored religiously 2-3 times per day preferably before meals. The most important schedule to follow for monitoring your blood glucose level is the schedule that is recommended by your physician. (The Diabetic Education Center follows a protocol to train the patients how to check their blood glucose levels so this needs to be explained to the patients at this time.)
3) **Insulin Administration:** The best way to control gestational diabetes is with diet and exercise but a majority of pregnant women diagnosed with gestational diabetes need to administer insulin at some point to control their condition. (At this time it would be best for the Diabetic Education Center to teach the patient The Insulin Administration Crisis Intervention Curriculum developed by Letty Revell to teach the patient about self-administration of insulin.)
4) **Hypoglycemia:** With gestational diabetes there are times when your blood sugars get too low. This may occur if you administer too much insulin, administer your normal amount of insulin and then don't eat as much as you usually do, or increase your exercise from your normal pattern. This can be unhealthy for yourself and your baby. The signs and symptoms of hypoglycemia including nervousness, anxiousness, rapid heart beat, excessive hunger, sweating, irritability, nausea, blurred vision, tingling/numbness around the mouth, headaches, and impaired/slurred speech. If you feel any of these symptoms then you need to check your blood glucose levels, and if your blood glucose level is low you need to drink 8 oz of skim milk or eat two glucose tablets. (The Diabetic Education Center needs to provide the patient with handout #2-Treatment of Low blood Glucose During Pregnancy, so that the patient knows how to deal with hypoglycemia.)