High BMI in Pregnancy Across the Continuum

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Why this is important?

- 40 week G2P1, BMI 43, previous c-section and wants a VBAC.
- VBAC risks not discussed
- Long labor
- Epidural placed: Mom with had drop in B/P, difficulty in FHR monitoring due to weight
- Staff not comfortable with explaining the need for additional monitoring – assumed that drop in B/P and fetal bradycardia was due to epidural
- Outcome- Uterine rupture with fetal demise
High BMI Toolkit 1.0 launched June 2012

- Perinatal Patient Safety in partnership with Care Experience and Workplace Safety Experts
- Included “Right words at right time”
- Assessment of units for preparedness
- Simulation for the High BMI patient
Silos
High BMI in Pregnancy Toolkit 2.0

Addressing the impact of weight gain in pregnancy

Outpatient

Ob/Gyn Obesity Champions

Inpatient

Perinatal Patient Safety Program
## Entry into Prenatal Care
### 2013 Baseline

<table>
<thead>
<tr>
<th>BMI</th>
<th>Percent</th>
<th># of Patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average/Underweight</td>
<td>≤ 24</td>
<td>50%</td>
</tr>
<tr>
<td>Overweight</td>
<td>25-29</td>
<td>27%</td>
</tr>
<tr>
<td>Obese</td>
<td>≥ 30</td>
<td>23%</td>
</tr>
</tbody>
</table>
## IOM Recommendations

<table>
<thead>
<tr>
<th>BMI Status</th>
<th>Pre-pregnancy BMI</th>
<th>Recommended Total Gain (lbs)</th>
<th>Rate of Gain in 2(^{nd}) &amp; 3(^{rd}) Trimesters (lbs/week)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Underweight</td>
<td>&lt;18.5</td>
<td>28-40</td>
<td>1</td>
</tr>
<tr>
<td>Normal</td>
<td>18.5-24.9</td>
<td>25-35</td>
<td>1</td>
</tr>
<tr>
<td>Overweight</td>
<td>25-29.5</td>
<td>15-25</td>
<td>0.6</td>
</tr>
<tr>
<td>Obese</td>
<td>&gt;= 30</td>
<td>11-20</td>
<td>0.5</td>
</tr>
</tbody>
</table>
Total Gestational Weight Gain

The percent of KP pregnant women who gained 1) above, 2) within, or 3) below IOM guidelines for total weight gain.

Total Weight Gain for Women with Live Births in 2013

41.0% 41.1% 41.4% 37.2% 41.1% 34.7% 36.6%

All KP Regions
Metrics - Excessive Weight Gain by BMI Categories

The percent of KP women who gained above IOM weight guidelines during pregnancy, by pre-pregnancy BMI

Women with Live Births in 2013 who gained Above IOM guidelines

<table>
<thead>
<tr>
<th>BMI Category Obese</th>
<th>BMI Category Overweight</th>
<th>BMI Category Normal</th>
<th>BMI Category Underweight</th>
</tr>
</thead>
</table>

All KP Regions

73.2% of women who gained above guidelines started their pregnancy at overweight or obese BMI.
36% of Ob/Gyn patients report negative attitudes by providers about their weight.

Weight Bias can contribute to delay or avoidance of care.

**Patient Quote:**
“When I was four months pregnant with my second daughter, my doctor told me not to be concerned that he couldn't hear the heartbeat because through all that fat it was hard to get a heartbeat on the monitor. I was so humiliated. I didn't say anything, just asked not to see him anymore when I made my appointments.”
High BMI in Pregnancy Toolkit 2.0

- Overview of High BMI Risks
- Communication about Weight in Pregnancy
- Outpatient and Inpatient
  - Patient Resources
  - Clinician Resources & Recommendations
  - EMR Updates – Pregnancy Checklist; High BMI Module, Intrapartum Orders
  - Equipment
  - Workplace Safety
Conclusions

• **Provider advice on GWG and exercise is insufficient and often inappropriate**
• **Interventions to attain healthy GWG and adequate physical activity are needed**
How to talk about weight

Outpatient and Inpatient Communication Presentations
## Language to Use

<table>
<thead>
<tr>
<th>Language to Use</th>
<th>Language to Avoid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Healthier Weight*</td>
<td>Fat</td>
</tr>
<tr>
<td>Unhealthy Weight*</td>
<td>Obese</td>
</tr>
<tr>
<td>Overweight</td>
<td>Heavy</td>
</tr>
<tr>
<td>Increased BMI</td>
<td>Large</td>
</tr>
<tr>
<td>Eating Habits</td>
<td>Diet</td>
</tr>
<tr>
<td>Physical Activity</td>
<td>Exercise</td>
</tr>
</tbody>
</table>
Outpatient Ob/Gyn Obesity Champions

Trainings on Communication

1. “Addressing Appropriate Weight Gain in Pregnancy”
2. “How to Talk About Weight in Pregnancy”

- Pregnancy Checklist & High BMI Module in EMR
- “Addressing Pregnancy and High BMI in the Outpatient Setting”
Healthy Weight Gain During Pregnancy - Handout

How much weight should I gain during pregnancy?

Healthy weight gain varies depending upon your body mass index (BMI) before you became pregnant. BMI helps to determine if your weight is appropriate according to your height.

<table>
<thead>
<tr>
<th>Pre-pregnancy BMI</th>
<th>Recommended Total Gain (lbs)</th>
<th>Rate of Gain in 2nd &amp; 3rd Trimesters (lbs per week)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lower than 18.5</td>
<td>28–40</td>
<td>1</td>
</tr>
<tr>
<td>18.5–24.9</td>
<td>25–35</td>
<td>1</td>
</tr>
<tr>
<td>25–29.9</td>
<td>15–25</td>
<td>0.6</td>
</tr>
<tr>
<td>30 or higher</td>
<td>11–20</td>
<td>0.5</td>
</tr>
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</table>

*This assumes a gain of less than 5 lbs during the first trimester.

Gaining more weight than recommended increases your risk of having a larger baby. This can lead to serious complications during vaginal delivery and an increased risk of cesarean delivery ("C-section"). Excess weight gain can also lead to additional health conditions. These include gestational diabetes and high blood pressure, which can cause complications.

What "eating for two" really means

We’ve all heard the term “eating for two,” but in calorie terms, it’s probably more accurate to say that a pregnant woman is eating for 1.05 people. During pregnancy, your body only needs 200 to 300 extra calories a day, which is about an extra half of a peanut butter sandwich and a glass of skim milk.

If you have a BMI of 30 or higher, eating additional calories is not necessary for the health of your baby.

How to achieve a healthy weight during your pregnancy

- Try walking, swimming, or yoga to give you energy and help control your weight gain.
- Avoid sweetened drinks (juice, soda, coffee drinks), fried foods, and desserts.
- Watch our prenatal nutrition video at kp.org/mydoctor/prenatalnutrition.
- Visit your doctor’s home page regularly at kp.org/mydoctor. You’ll have access to resources to support you and your growing baby.

Healthy weight during pregnancy meal plan

During your pregnancy, eat 5 to 6 small, balanced meals per day. This meal plan is designed to keep your blood sugar levels from going too high, which is one of the most important things you can do to manage your weight gain and prevent gestational diabetes for a safe pregnancy and a healthy baby. (continued on back)
Pregnancy weight gain curve in EMR
Given at prenatal visits
Late Pregnancy (35-40 weeks)
High BMI

- Focus on safety and our team approach to care
- Topics to discuss
  - C-section risk
  - Early epidural during labor
  - Additional monitoring during labor (ex., fetal scalp electrode)
  - Review birth plan with patients (for BMI over 40)
Cesarean Section Rates: What the Data Tells Us

- Cesarean
- BMI 30-39 - 33.8%
- BMI 40 and above - 50%
- VBAC
- 13% successful if > 300 lbs
Late Pregnancy (35-40 weeks)  
High BMI Patient

Example language to communicate risks:

- Pregnant women with a BMI over 30 may have additional monitoring.
- There is a higher risk of c-section, which may mean that you will need an epidural earlier in your labor.
- We may monitor the baby more closely during labor, for example – the nurses may spend more time at your bedside and the doctors may need to place an internal monitor directly on your baby’s scalp/skin.
Inpatient

Level of preparedness??

• How are you prepared for fetal monitoring for High BMI pts?
• High BMI c-section training?
• Equipment – bariatric beds, pannus management, retractors?
• Postpartum care?

Take 5 minutes to talk about how prepared you are at your medical center’

What you have done and what you need to do?
Create a Weight Friendly Environment

– Weigh with Care
– Appropriate gowns (larger sizes)
– Appropriate equipment (larger blood pressure cuffs, wheelchairs, fetal monitor belts, Hover mats, Liko lift)
– Appropriate furniture
– Designated bariatric room
Conversations

Labor & Delivery

Focus on safety and our team approach to care

Topics

- Vaginal and C-section risk and preparation
- Additional monitoring during labor (e.g. fetal scalp electrode)
- Early epidural during labor
- Alternative treatment options to control pain to minimize narcotic use
- Pannus management
Admission

Examples

Set Expectations

“It may seem like I'm coming in to your room frequently, but I want to make sure that I'm monitoring your baby well.”

“I'm going to ask our anesthetist, "Margie", to meet you and talk about pain control options. It's great to have the chance to meet her before you're in really active labor.”
“Women with extra weight around the belly are more likely to be delivered by Cesarean section, or C-section. In order to make you more comfortable for your baby’s arrival, we’d like to place the epidural now.”

“Extra weight around the belly can make it a little tricky to monitor the baby at this stage.”

- “We’ll be adjusting the fetal monitor and may be asking you to change your position frequently to help us monitor the baby.”
- “We’d like to place an internal monitor on the baby’s scalp to keep an eye on your baby’s heart rate.”
Conversations

Delivery

Examples

Vaginal

“During delivery, after the baby’s head appears, we may ask you to pull your legs back to help us guide him or her out. A nurse may also place pressure on your pubic area to help deliver your baby’s shoulders safely.

Cesarean section

Pannus retractor: “We’ll be using an adhesive retractor to help us manage the extra tissue around the belly and prepare the area where we need to make the incision to deliver your baby.”
L&D Orders

- At admission: review L&D management w patient (as above)
- If CNM patient: review care plan with MD.
- If > 136 Kg (300 lbs): Anesthesia consult on admission, discuss airway with anesthesia, secure obesity equipment: large BP cuff and SCDs, inflatable mattress (Hovermatt), long straps for bed/table, bariatric bed/toilet if >450 lbs
- If BMI > 50: Use RFID: wand plus mat
- If CS and > 120 kg (264 lbs): consider taping pannus, Alexis retractor +/- MD assist, long instruments. Consider 0 looped maxon for fascia.
- If CS and > 120 kg (264 lbs): 3g Ancef proph
- If CS and > 136 Kg (300 lbs): Heparin SC 7500Units BID postop while in house.
Equipment List

- Amniocentesis: long needle and high-resolution sonogram guidance
- Bariatric bed with frame and trapeze; if patient exceeds 500 lbs
- Bariatric chairs
- Bookwalter retractor
- CPAP equipment
- Patient items - Extra-large B/P cuffs, extra-large gowns, extra-large panties, extra-large SCDs, abdominal binders, fetal monitoring belts
- Bariatric wheelchair (powered) or use a wheelchair/bed mover
- Graduated compression stockings
- Disposable or reusable Hovermatt

- Liko Overhead Lift, Liko Viking XL, or Bariatric Slings
- Extra Wide Multi-strap
- Bariatric Repositioning Sheet
- Bariatric High Back Seated Sling
- Inflatable mattress
- Toilet to exceed 500 lb capacity
- Stryker Zoom Gurney (weight capacity 700 pounds)
- Hill Rom Affinity 4 Birthing Bed which has a weight capacity of 550 pounds (no bariatric birthing bed available at this time)
- Consider transfer to OR for vaginal delivery if needed for table extenders and stirrups
OR Equipment

- Adhesive straps/elastoplast tape for pannus management; consider pannus retractor device e.g. Traxi
- Atraumatic self-retaining retractor
- Bariatric OR table and extenders
- Disposable or Reusable Hovermatt for transfer

- DVT prophylaxis
- Epidural support device
- Extra-large SCDs
- Large belts/straps for OR table
- Positioners, wedges e.g. Sage or Medline wedges
Pannus Retractor

- [https://www.youtube.com/watch?v=92zEnc5rsdU](https://www.youtube.com/watch?v=92zEnc5rsdU)
High BMI Operating Instruments Kit

- 2 Zhyst st clamps 505-202
- 4 Zhyst 14" slight cvd 505-293
- 2 Zhyst 14" st Max angle 505-295
- Zhyst clamps 14"
- 1 scissors 12" parametrium max cvd 505-273
- 1 retractor kelly 11" blade XL 200-168

*Numbers are Jarit order numbers*
Anesthesia Care

- Antenatal anesthesia consultation at 36 weeks (or earlier) for women with a BMI > 50
- If on CPAP; bring and use during hospitalization
- On admit, mother > 136 Kg (300 lbs), receives an inpatient anesthesia consult early in labor
  - Develop and implement an anesthetic plan
  - Use of early epidural is recommended
  - Neuraxial opiates are preferable to IV opiates for post op pain
  - General anesthesia should be avoided
  - Using a lot more IV Tylenol
Anesthesia Equipment

- Difficult airway cart
- Troop pillow for intubation
- Emergency cricothyroidotomy kit
- Glide scope or other Video guided laryngoscopes
- LMAs

- Longer epidural, spinal, and combined spinal/epidural needle sets (CSE)
- Consider long intraosseous devices for IV rapid access
- Capnography for end tidal carbon dioxide monitoring
Obstructive Sleep Apnea

Practice Guidelines for the Perioperative Management of Patients with Obstructive Sleep Apnea

An Updated Report by the American Society of Anesthesiologists Task Force on Perioperative Management of Patients with Obstructive Sleep Apnea

Practice guidelines are systematically developed recommendations that assist the practitioner and patient in making decisions about health care. These recommendations may be adopted, modified, or rejected according to clinical needs and constraints, and are not intended to replace local institutional policies. In addition, practice guidelines developed by the American Society of Anesthesiologists (ASA) are not intended as standards or absolute requirements, and their use cannot guarantee any specific outcome. Practice guidelines are subject to revision or withdrawal by the evolving of medical knowledge.

- What other guideline statements are available on this topic?
  - Other guidelines on this topic include those published by the Society for Ambulatory Anesthesia, the American College of Chest Physicians, and the Canadian Anesthesiologists' Society.
Intrapartum Management Obstructive Sleep Apnea

Criteria:

- BMI of 50 or greater
- Previous diagnosis of severe range OSA

Anesthesia evaluation

- Prenatally or upon admission to L&D during 3rd Trimester
- The patient and her family should be informed of the potential implications of OSA during the patient’s hospital course.
- Patients with known or suspected OSA may have difficult airways
Patients with Obstructive Sleep Apnea (OSA)

- Susceptible to the respiratory depressant and airway effects of sedatives, opioids, and inhaled anesthetics
- Consider the potential for postoperative respiratory compromise when giving opioids and sedatives
- Should have continuous pulse oximetry or other respiratory monitoring after discharge from the recovery room if received opioids and sedatives
- Continuous monitoring may be provided in a critical care or step-down unit, by telemetry on a hospital ward, or by a dedicated, appropriately trained professional observer in the patient’s room
  - Should be maintained as long as patients remain at increased risk.
Postpartum Care

- Focus on safety and our team approach to care
- Topics
  - Surgical Site Infections
  - Importance of ambulation
  - DVT
  - Breastfeeding
  - Recognition of potential Sleep Apnea
New Mother’s Perception

"I never felt I could be a good nursing mother, as I was so uncomfortable with my big breasts. I was afraid I would be too self-conscious to nurse in public. However, as soon as my baby started to nurse, I felt good about my breasts for the first time in my life; finally they were useful."
Breastfeeding Challenges

- Women with a High BMI are less likely to continue breastfeeding
- The Academy of Breastfeeding Medicine lists High BMI pregnancies as a risk factor that should be assessed to anticipate breastfeeding problems
- Heightened sensitivity to the high BMI mother is essential
- Provide privacy
- Allow ample time for assistance
- Understand their additional challenges and educational needs
Conversations

Postpartum
Breastfeeding for Large Breasted Women*

Examples

“Women with large breasts can be very successful at breastfeeding. Positioning will be very important. Are there any positions that you are familiar with?”

“As a mother with large breasts, you might find it easier lying on your side with your arm and hand supporting your baby’s neck and back. We will try a few positions before you go home so you find one that works for you.

* Refer to the Tips for Large Breasted Women Handout
Breastfeeding Tips for Large Breasts

Education and tip sheet developed for staff assisting large breasted mother

- A few highlights
  - REMINDER: milk production occurs in the mammary glands
    - Larger breast does not necessarily mean more milk production
    - Avoid making comments about larger breasts producing more milk.
  - Caution mother to not lean over her baby while nursing as baby may not latch properly
  - Teach mother to gently massage breasts before and during breastfeeding, to will ensure that all milk ducts are drained
Conversations

Postpartum Follow up with Obstructive Sleep Apnea on Discharge

Example

“During your hospital stay, we noticed that you would stop breathing periodically while you were sleeping (and/or) were snoring while you were sleeping. We will order an outpatient follow-up appointment for the Sleep Apnea Clinic on discharge.”
Discharge Home

- Outpatient Lactation Consult
- Wellness Coaching
  - Coaching one-on-one by phone
  - Sessions are free
- Regional Perinatal Services for diabetes and hypertension management
- Weight Reduction classes and services
- Sleep Apnea Clinic
Implementation

- Starts with vision
- Include outpatient and inpatient in taskforce with Obesity champions
- Engage Chiefs group, MCH leadership, Hospitalists, Anesthesia, Lactation Consultants, front-line staff, and EMR champions
- Use small test of changes to implement new equipment and workflows
- Use a variety of formats for implementation; didactic, videos, simulation & role play
- Make tool kit easily accessible
Questions