Assessment of the OB Patient Presenting to the ED- Transfer

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November 15, 2021

IOWA
Maternal Quality Care Collaborative
OBSTETRICS MOBILE SIMULATION UNIT

Favorite Thanksgiving Food

HRSA
Health Resources & Services Administration

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- Speakers have no financial disclosures to make
- Any specific products mentioned, no compensation for any products or social media platforms mentioned

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EMS Credits

Send Marleine EMS license #

In Chat put in name and facility

Must attend live Zoom Meeting

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Simulation Updates

Working on a virtual simulation format

Our Team is excited to develop this type of format

Developing agendas for in-person site visits

Simulation Workshop specifically for ED's

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Dr. Jeff Quinlan MD FAAFP

Maternal Transfer and Inter-facility Transfer

Jeff Quinlan, MD

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Background

Majority of prenatal transports are for fetal indications

- In the US, infant morbidity and mortality is associated with very low weight births (< 1500 grams)
- These deliveries only make up 1.4% of deliveries

13 percent of females of reproductive age do not live within a 50-mile radius of an obstetric and neonatal intensive care unit

of hospitals without maternity services is increasing which has led to:

- More maternal transfers
- More births in hospitals without maternity care units
- More preterm births
- More out-of-hospital births

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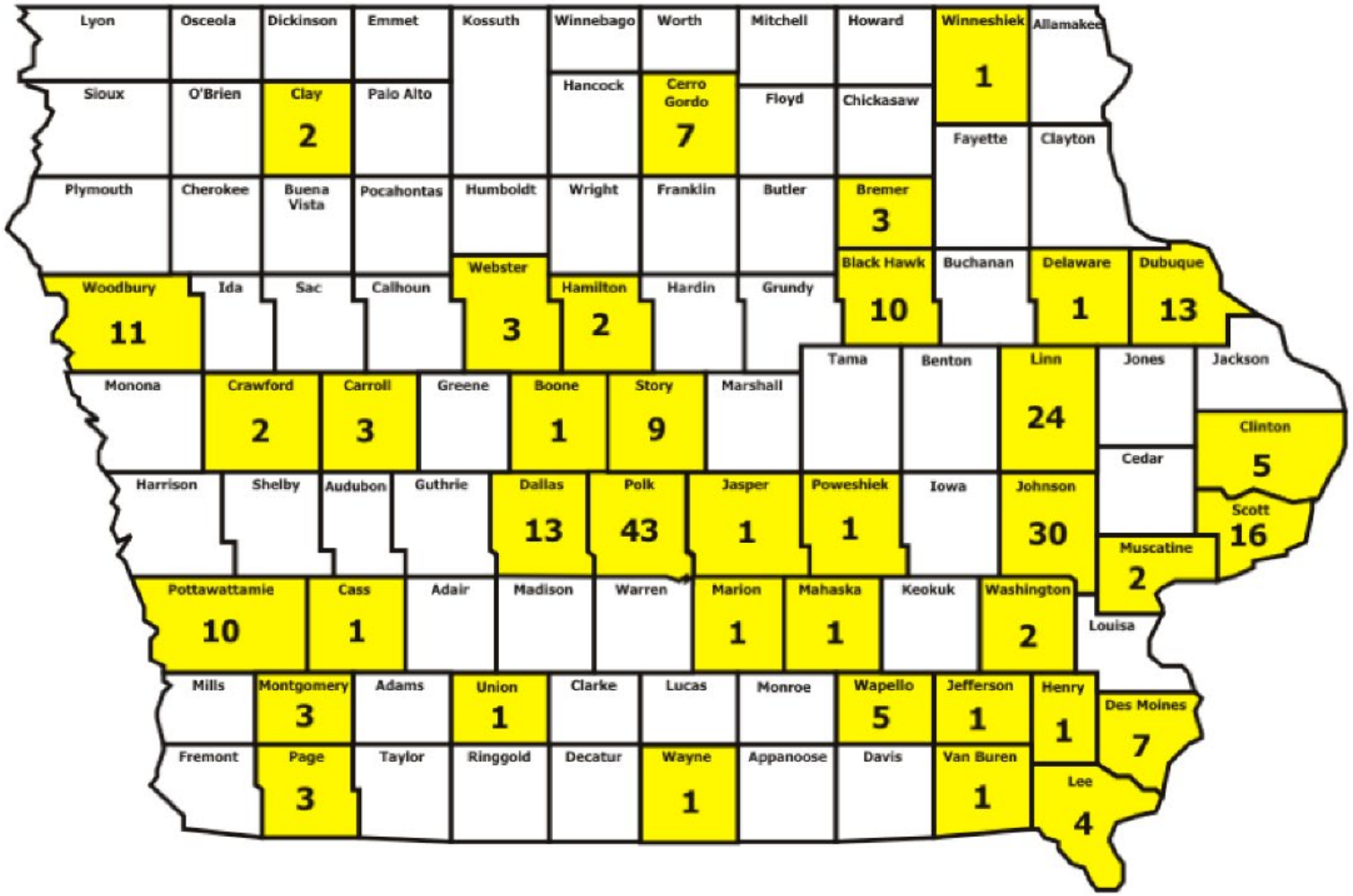
DISTRIBUTION OF OB/GYNS (245)*
2018



*Includes General Obstetrics & Gynecology only

Source: Iowa Health Professions Tracking Center, Office of Statewide Clinical Education Programs, UI Carver College of Medicine, May 2019

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MATERNITY CARE IN THE RURAL USA

In 1985, 24% of rural counties lacked OB services. Today, 54% of rural counties are without hospital based obstetrics.

More than 200 rural maternity wards closed between 2004 and 2014.

Half of rural women live more than 30 mins drive to maternity unit

Higher incidence of

- Chronic conditions
- Poverty
- Travel barriers

Putting pregnant women at risk

Higher incidence of out of hospital birth and other pregnancy complications

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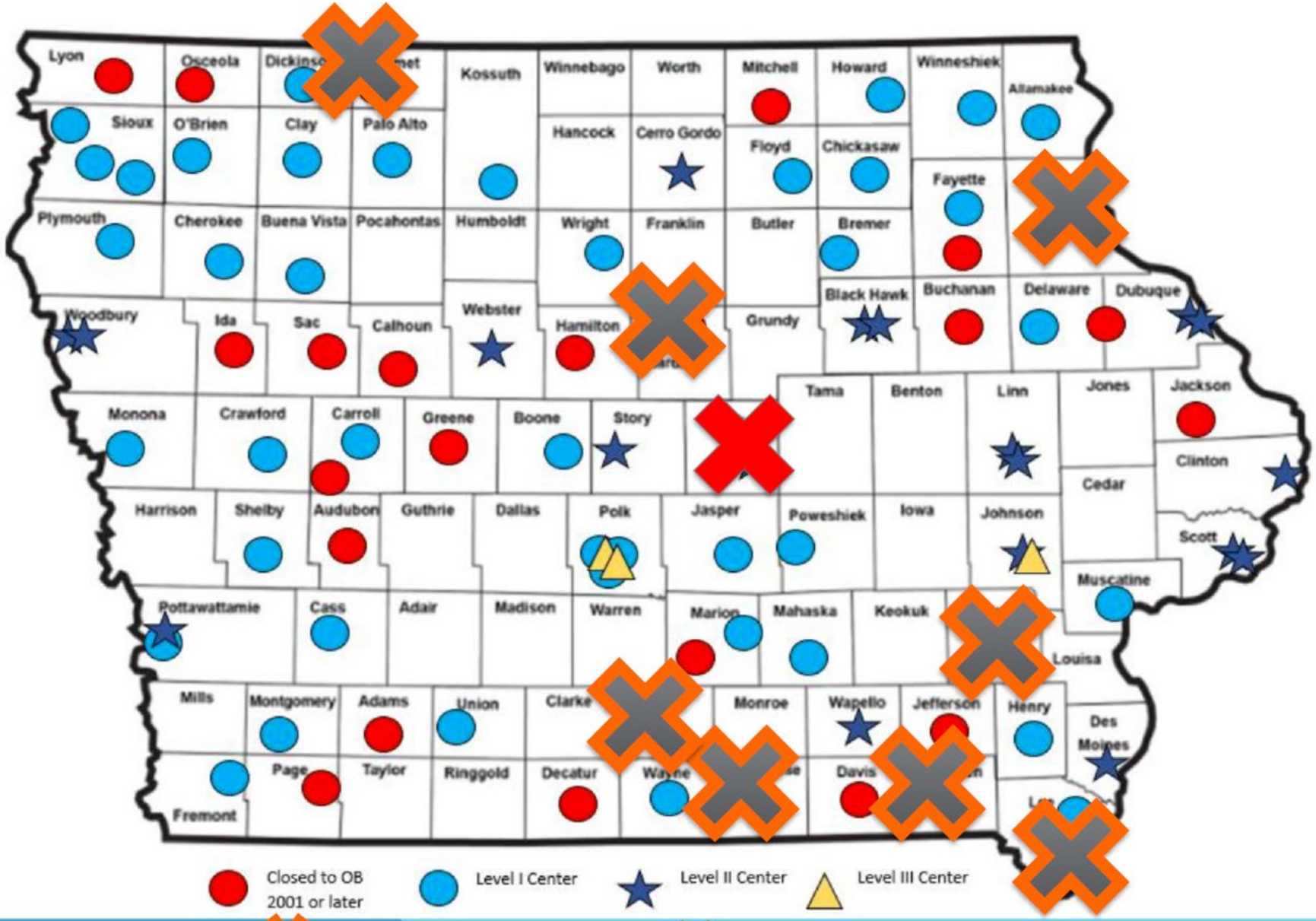

Closed 2018

Closed 2019

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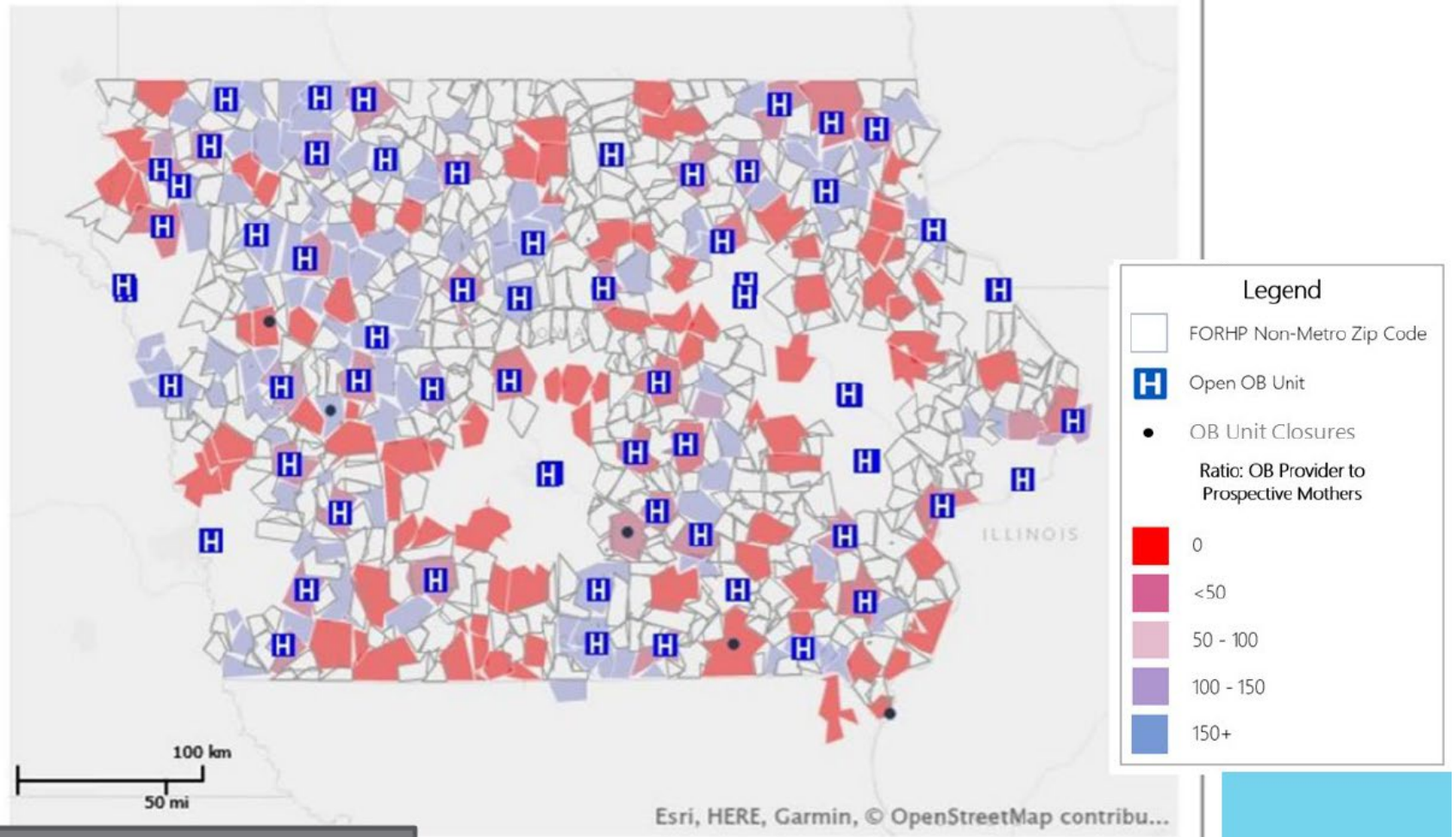
THE CHARTIS GROUP
CHARTIS CENTER FOR RURAL HEALTH

MATERNITY DESERTS IN RURAL IOWA



Access in Iowa is ~18 OB providers per 100,000 prospective mothers

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MATERNITY CARE IN RURAL IOWA 2013-2018
COUNTIES WITHOUT L AND D UNIT

5x incidence of out of hospital birth in counties without L and D unit (2.5%)

Distance to drive to L and D unit

- 24% less than 30 minutes
- 62% 30-60 minutes
- 14% 60 minutes or more

Unpublished data IDPH, UICCOM Office Statewide Programs

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WHY DO MATERNITY UNITS CLOSE?

July 2019 OB Workforce Study from the Wisconsin Office for Rural Health:

Lack of provider coverage

Providers unable to keep up skills

Low or reduced volume of deliveries compared to cost of keeping unit staffed 24 x 7 x 365.

100 births/year seems to be the critical threshold

11 of Iowa's 63 remaining maternity units deliver <100/year

Obstetric Delivery Servies and Workforce in Rural Wisconsin Hospitals, WI office of Rural Health, July 2019.

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Neonatal Levels of Care

- Level 1: Well Newborn Nursery (typically 35 weeks and above)
- Level 2: Special Care Nursery (typically 32 weeks and above)
- Level 3: NICU
- Level 4: Regional NICU

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Levels of Maternal Care

- Level 1: Birth centers, basic care
- Level 2: Specialty care
- Level 3: Subspecialty care
- Level 4: Regional perinatal health care centers

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Emergency Medical Treatment and Labor Act

- Governs transfer of patients from hospitals that accept CMS or DHS funds
- All patients receive a medical screening exam
  - Determines if emergency exists
  - Provides for stabilizing treatment
- Appropriate if:
  - Patient makes a written request
  - Facility does not have capability to treat
  - Facility does not have capacity to treat

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Emergency Medical Treatment and Labor Act

- For pregnant patients at a facility that provides maternity care:
  - Not stabilized until infant and placenta are delivered
  - Otherwise, can only be transferred if:
    - Patient or representative make that request
    - Medical personnel certify that benefits outweigh the risk
- For pregnant patients at a facility that DOES NOT provide maternity care:
  - Transfer benefits may outweigh the risks
- Early labor: Not considered an emergency condition
- If transfer is not medically necessary, patient responsible for cost

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Indications for Transport

- Neonatal indications – infant will require the higher level of care
  - Preferable to transferring the neonate after delivery
- Transfer before delivery is results in better infant outcomes than postnatal transfer
- Transfer before delivery avoids separation of the mother from her newborn

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Maternal Indications for Transport

- Preterm labor
- Preterm rupture of membranes
- Severe gestational hypertension or other hypertensive complications
- Antepartum hemorrhage
- Medical complications of pregnancy such as diabetes, renal disease, hepatitis
- Multiple gestation
- Intrauterine growth restriction
- Fetal abnormalities
- Inadequate progress in labor
- Malpresentation
- Maternal trauma

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Barriers

- Perception (by patients or providers) that facility can:
  - Provide appropriate level of neonatal care
  - Provide appropriate level of maternal care
- Finances

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Contraindications

- Lack of an appropriate modality for safe transfer
- Weather and road conditions too hazardous for safe travel
- Maternal condition insufficiently stabilized
- Delivery is anticipated before transport completed
- Unstable fetal condition threatening to deteriorate rapidly
- Patient declines transfer

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Planning and Logistics

- Transferring facility should initiate stabilization and treatment efforts
- Inter-facility agreements should be in place that formalize the relationship between the transferring and receiving facilities
  - Clearly delineate each facility's responsibilities
  - Service must be available 24 hours/day.
- Formal protocols for all aspects of the transfer process should be developed at both the transferring and receiving facilities

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Planning and Logistics

- The receiving facility should be able to provide the appropriate level of care for both the mother and the newborn
- Good communication between the referring facility, transport team, and receiving facility is essential
- An appropriately equipped, rapid mode of transport to the receiving facility should be available.
- The transport team should be able to:
  - Provide a timely response
  - Have the training and experience to assess the patient's status, determine appropriateness of transfer, and provide appropriate monitoring and care during transport

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Evaluation - Patient Condition

- Vital signs
- Cervical examination
- Membrane status
- Fetal heart rate pattern
- Uterine contractions
- Pertinent laboratory
- Ultrasound results

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Communication

- Essential information for the transport team includes:
  - Gestational age
  - Diagnosis
  - Reason(s) for transfer
  - Patient condition
  - Intended mode of transport
  - Medications
  - Estimated blood loss and blood products transfused
  - Medical/obstetric history

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Responsibility

- Referring physician and hospital are responsible until arrival at the receiving facility
  - Unless the receiving facility is sending the transport team
  - Then receiving facility assumes responsibility for the patient once they leave the transferring hospital
- Each facility should have a clear understanding of its responsibilities before, during, and after the transport
- Medical direction during transport may be provided by the referring physician, accepting physician, medical director of the transport agency, or a combination

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Mode of Transport

- Factors for Determination:
  - Availability of different modes of transport
  - Patient acuity
  - Weather
  - Distance
  - Time
  - Ground conditions
  - Cost
- Air transport requires take-off and landing sites
- Air transport may involve additional transfer of the patient by ground ambulance from take off and landing sites

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Helicopter

- Advantages over ambulance transport:
  - Patients insufficiently stable for ambulance transport may be candidates for more rapid transfer by helicopter
  - Costs can be competitive with ground transport costs
  - Particularly advantageous where timely transport is essential
    - e.g., pregnancy at the limit of viability in advanced preterm labor where delivery at a facility unprepared to handle resuscitation of a peri-viable fetus may substantially impact likelihood of neonatal survival
- Disadvantages over ambulance transport:
  - Limits physical access to the patient

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Equipment

- Depend on:
  - Type of transport
  - Patient acuity
  - Vehicle utilized
  - Distance between facilities
- Minimum equipment required:
  - Assess maternal vital signs
  - Perform resuscitation (of mom and baby) if indicated
    - Includes airway management

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General Equipment

- Maternal transfer form
- Stethoscope
- Thermometer
- Emesis basin
- Flashlight
- Sphygmomanometer (BP cuff)
- Doppler (battery operated or fetal stethoscope)
- Infusion pump (battery operated)
- Sterile gloves (3 pairs, various sizes)
- Peri-pads
- Sterile lubricant
- Antiseptic solution

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IV Fluids and Maternal Medications

- 1000 cc 5% D/W
- 1000 cc Ringer's Lactate
- 2 IV set ups
- Tape
- Tourniquet
- Catheters: 2 each of # 16, # 18, # 20
- Butterfly: 2 of # 21
- Assorted needles and syringes
- Alcohol swabs
- 5 ampules magnesium sulphate 1 g/amp
- 4 ampules oxytocin 10 units/mL
- 2 ampules hydralazine 20 mg/amp
- 2 ampules Valium 10 mg/amp
- Indomethacin 50 mg suppositories or nifedipine 10 mg tablets

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Emergency Birth Sterile Kit

- 1 pair scissors
- 2 Kelly's forceps
- Six 4 x 4 gauze squares
- 1 small drape
- DeLee mucous suction or a mechanical suction and # 10 Fr. suction catheters
- 2 cord clamps
- 2 plastic bags (placenta and garbage)
- Blanket for baby
- Mylar emergency blanket

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Infant Resuscitation Equipment

- Neonatal laryngoscope and small straight blade, size 0
- Neonatal self-inflating bag and masks, sizes 0, 1, 2, to administer 100% oxygen
- Clear endotracheal tubes with stylets and connectors, size 2.5 to 4
- Epinephrine 1:10 000 – 1 mL ampules x 3 or preloaded syringes
- Naloxone 0.4 mg/mL – 1 mL ampules x 3 or preloaded syringes
- 1 mL syringes
- 2 mL syringes
- # 20 needles
- # 25 needles
- Orogastric feeding tubes
- Elastoplast tape and scissors

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Adult Resuscitation Equipment

- Oxygen – check availability and amount in ambulance
- Self-inflating bag and mask
- Airway equipment

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Monitoring During Transport

- Maternal vital signs should be obtained and recorded every 15 minutes
  - More frequently if dictated by the patient's condition
- Frequency of uterine contractions should be noted and documented
- Transported in a left lateral decubitus or sitting position
- Supportive care for nausea, vomiting, and/or anxiety
  - Intravenous (IV) medication options to treat nausea and vomiting
  - Lorazepam 1 to 2 mg may be used alone or in combination with an antiemetic for patients with more significant anxiety issues.
- Continuous electronic fetal heart rate monitoring may be limited
  - space for the monitor
  - early gestational age
  - turbulence or movement
- Type and frequency of fetal monitoring should be discussed by the sending, receiving, and transporting teams

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Key Interventions – Preterm Labor

- Obtain maternal vital signs and assess fetal status
- Perform a vaginal examination if:
  - Intact membranes
  - No contraindications
- Determine fetal presentation
- Check urinalysis
- Obtain Group B Streptococcus (GBS) culture and initiate GBS prophylaxis

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Key Interventions – Preterm Labor

- Test for fetal fibronectin
- Screen for gonorrhea and chlamydia
- Administer magnesium sulfate for fetal neuroprotection
- Administer tocolysis
- Administer betamethasone 12 mg intramuscular (IM) or dexamethasone 6 mg IM prior to transport

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Key Interventions – Preterm Labor with Rupture of Membranes

- Obtain maternal vital signs and assess fetal status
- Confirm diagnosis
- Determine fetal presentation
- Do not perform digital vaginal examination unless:
  - Delivery is believed to be imminent
  - Otherwise, speculum exam usually sufficient
- Assess for clinical evidence of chorioamnionitis

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Key Interventions – Preterm Labor with Rupture of Membranes

- Initiate intravenous (IV) antibiotics for prophylaxis or treatment
- Administer tocolysis
- Administer betamethasone 12 mg IM or dexamethasone 6 mg IM
- Administer magnesium sulfate for fetal neuroprotection

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Key Interventions – Third Trimester Bleeding

- Obtain maternal vital signs and assess fetal status
- Do not perform a vaginal examination until placenta previa has been ruled out
- Determine fetal presentation
- Determine likely cause of bleeding
- Estimate total blood loss and potential for on-going hemorrhage
- Check maternal hemoglobin and hematocrit
- Document any blood products transfused
- Maintain more than one IV site
- Place a bladder catheter to monitor urine output
- If indicated:
  - Administer magnesium sulfate for fetal neuroprotection
  - Administer tocolysis
  - Administer betamethasone 12 mg IM or dexamethasone 6 mg IM

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Key Interventions – Hypertensive Disorders

- Assess maternal symptoms:
  - Headache
  - Visual changes
  - Epigastric pain
  - Nausea and vomiting
- Obtain maternal vital signs and assess fetal status
- Administer a loading dose of magnesium sulfate prior to transport
- Place a catheter and monitor intake and output
- Provide supplemental oxygen as needed to maintain O2 saturation ≥95 percent
- Perform laboratory evaluation for transaminases (aspartate transaminase, alanine transaminase), platelet count, hemoglobin, hematocrit, creatinine, and proteinuria (see "Preeclampsia: Clinical features and diagnosis")
- Document reflexes, edema, visual acuity
- Institute seizure precautions
- Assess for signs and symptoms of features of severe disease
- Administer antihypertensive medications if indicated
- Manage seizure activity

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Case Study:

- Rural Hospital X, Rural County X, Iowa
- Patient presents to the ER check-in desk but refuses to sign in
- She is in obvious labor and asks to talk to a nurse
- She reports to the nurse that she is pregnant with twins
- She has been told that she will need a repeat c-section
- She has also been informed by her OB Provider that Rural Hospital X does not do c-sections
- She reports that she does not have enough money for gas to get to Rural Hospital Y which has the capability to do a c-section

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Case Study:

- What should Rural Hospital X do if a patient presents to their ED in labor but needs a c-section?
- Can the patient be transferred by ambulance?
- If there is no way to do a c-section and the patient has progressed to a point where she is unsafe for transport, what do they do?
- Can EMS by-pass Hospital X and go to Hospital Y (which provides the service) or do they have to come to us since we are the nearest facility?

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