Aim:
- Develop a process for sharing educational material prenatally, with the goal of better aligning expectations and collaboration between caregivers and families with babies at risk for NAS.
- By December of 2014 we will disseminate population specific educational material to 100% of families identified as at risk for delivering an infant with potential for NAS prior to hospital admission.

Setting:
- A single center community-based hospital, 4500-5000 deliveries per year, 28 bed Level III NICU.
- Families with substance exposure has increased from 15 (2012) to 41 (2013) to 51 (2014 as of Sept).

Mechanism:
- Standardized educational material was developed to improve comprehension of and compliance with the plan of care to better align the family’s expectation regarding hospital stay and need for hospital follow up.

Method:
- A community-based hospital partnered with a sister intercity hospital and the children’s hospital to enter the Vermont Oxford Network (VON) iNICQ collaborative for NAS, and used the PDSA process for all initiatives.
- An educational booklet and standardized process was developed to be used in consultations with families prenatally, on admission or within 24 hours after delivery.
  - May 2014: Developed data retrieval system identifying babies with billing codes consistent with NAS.
  - June 2014: Completed educational material.
  - July 2014: Began using educational material in consultation with families.
  - August 2014:
    - Improve collaboration with prenatal registration nurse and Obstetricians to identify families at risk.
    - In progress as of Sept 2014:
      - Improve collaboration with Social Work to work with patients prenatally and during hospitalization.
      - Improve collaboration with outpatient clinics managing chronic medication/drug use/withdrawal.

Measures:
- Reported within is data for July 2014, following one month of the standardized parent education process.
- First point measured by retrospective chart review, charts identified by diagnosis code.
- Further points of measurement: prospectively logged by the admitting or pre-registration nurse and validated using charts identified by diagnosis code.
  - Primary outcome measure: Number of families at risk for NAS who are provided education and material prior to admission.
  - Secondary outcome measures: Number of families at risk for NAS, who are provided education and material after admission but prior to giving birth or after delivery but within 24 hours.
  - Process Measures: Consult check list completion.
  - Balancing Measures: Number of “urgent” not scheduled consultations required.

Results:
- In the month since having the educational material available 7 infants required scoring for NAS. Of those:
  - 57% of families were reached prenatally, 29% within 24 hours of delivery and 14% did not receive material.
- An incidental finding was that families receiving educational material expressed relief and confidence in knowing a structured program exists within the institution.
- Through eliciting this feedback we were able to include a parent in further refinement of the material.

Discussion:
A key barrier in disseminating information to families prior to delivery is the identification of families at risk. Therefore the secondary measure of dissemination of material “as soon as possible” was instituted. Lessons learned include: the need for improved identification of patients at risk, communication with primary care doctors regarding institutional program, improved collaboration with community programs and need to develop a mechanism to measure and quantify parent-reported satisfaction with the process.
Figure 1: Outcome Measures

Dissemination of Educational Material

- Before Admission
- After Admission, Before Delivery
- After Delivery
- None

Percent
**Figure 2: PDSA: Goal, Aim and Measurement**

**Parent Education**  
**Plan Do Study Act (PDSA)**  
**Project Worksheet**

<table>
<thead>
<tr>
<th>Overall goal of project:</th>
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<tbody>
<tr>
<td><strong>Statement of your vision to make things better:</strong></td>
</tr>
<tr>
<td>Have material to share prenatally with at risk moms, to better align expectations and collaboration with the family.</td>
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<table>
<thead>
<tr>
<th>Problem statement:</th>
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<tbody>
<tr>
<td><strong>Define the problem</strong></td>
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<tr>
<td>Drug exposed moms deliver babies with the expectation of going home within 72hrs of their hospital stay, without realization their baby is at risk. Often are uncooperative with POC. Don’t have clear FU plans.</td>
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<table>
<thead>
<tr>
<th>Why was this project selected</th>
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<tbody>
<tr>
<td>Lack of educational material available to provide to mothers on NAS. Inconsistent information given to mother's prenatally and at delivery and lack of parent comprehension. Increased population of narcotic use/addiction in pregnancy and NAS in neonatal population.</td>
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<thead>
<tr>
<th>Constraints and assumptions (barriers)</th>
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<tbody>
<tr>
<td>Don’t always know about prenatal drug use prior to admission- hard to get mother in for prenatal consult. Hard to communicate on level for maternal understanding. Unavailability of support networks- social service, discharge planning. Parent acknowledgement of drug problem and effects on infant.</td>
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<thead>
<tr>
<th>Players and roles</th>
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<tbody>
<tr>
<td>Mother, OB, Providers of drug rehab programs (Methadone), NNP/Neonatologist, PCP, RN, Social Work, Discharge planner, Maternity care navigators/secretary, Well baby coordinator</td>
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<thead>
<tr>
<th>Aim Statement:</th>
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<tbody>
<tr>
<td>We will create a population specific educational material for mothers regarding NAS, and disseminate prenatally to women delivering with known drug exposure:</td>
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1) Prior to admission 40% --prenatal piece (outpatient)  
2) After admit but before delivery 60% --hospital based  
3) Within 24 hrs of delivery 80% --hospital based

<table>
<thead>
<tr>
<th>Specific goals for this cycle</th>
<th>outpatient based interactions</th>
<th>Cycle # 1</th>
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</thead>
<tbody>
<tr>
<td>1) Complete educational material</td>
<td></td>
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<tr>
<td>2) Collaborate with TMC on material</td>
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<tr>
<td>3) Improve collaboration with maternity navigators in identifying pts</td>
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<tr>
<td>4) Improve collaboration with OBs in ID pts</td>
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<tr>
<td>5) Improve collaboration with SW in working with patients</td>
<td></td>
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<tr>
<td>6) Improve collaboration with outpt clinics (methadone/subutex clinics)</td>
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<table>
<thead>
<tr>
<th>Measurement</th>
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<tbody>
<tr>
<td>Identify project measures (how will you measure results?)</td>
</tr>
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</table>

1. **Process measures:** completed check list for provider of prenatal visit; number of prenatal consults/total NAS babies

2. **Outcome measures:** number of patients who come in with educational material/total drug exposed population (could be given by consult or Maternity Navigator)

3. **Balancing measures:** Time consumptions for prenatal visits; number of “urgent” prenatal visits vs scheduled visits

*Developed by Jodi Jackson MD & Betsi Anderson RN, 5-21-2014, Children’s Mercy*
Figure 3: Educational Consult Checklist

**Consult NAS Education Checklist**

1. Obtain detailed history from mom/verify history in chart
2. Supply written material and review with family:
   - SMMC booklet
   - One page handout
3. Discuss 72 hour observation for withdrawal
4. Discuss 5 day observation for methadone and subutex
5. Discuss scoring and provide scoring sheet
6. Discuss criteria for admit to NICU
7. Discuss comfort measures
8. Discuss criteria for dosing
9. Discuss medication dosing
10. Discuss medication weaning
11. Discuss criteria for discharge
12. Discuss follow-up/PIC/special care
13. Offer opportunities for support prior to delivery (Social Work)
14. Document
   - Write note in mom’s chart
   - Print copy in doctors documentation record
   - Alert nursing team of impending delivery