**4 Correlation between medical performance and teamwork in multidisciplinary high fidelity obstetrics simulations**
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**OBJECTIVE:** Teamwork and communication gaps are consistently cited as contributors to adverse outcomes in Obstetrics. The Critical Care in Obstetrics Course provides an innovative experience by combining brief interactive didactics with hands-on simulation. Most participants have never worked together, which creates a unique environment to evaluate the importance of teamwork and communication. The objective of this study is to evaluate the association between teamwork and medical performance in high-fidelity critical care simulations.

**STUDY DESIGN:** Participants were separated into multidisciplinary teams and taken through simulations including placental abruption, eclampsia, sepsis, cardiac arrest, venous thromboembolism, diabetic ketoacidosis (DKA) and thyroid storm. Facilitators completed a validated checklist assessment for each group’s performance in medical care and teamwork. Each element was rated on a scale from 1 to 5, with 1 being unacceptable and 5 being perfect. We evaluated 5 communication measures, including use of closed-loop communication and orientation of new team members.

**RESULTS:** A total of 354 multidisciplinary teams participated in 1,564 high-fidelity simulations. There was a significant correlation between medical performance and teamwork/communication scores for all scenarios (Table 1). The strongest correlation was for total teamwork score as a predictor of good or perfect medical performance.

**CONCLUSION:** The quality of teamwork and communication correlated with the quality of clinical performance in newly formed multidisciplinary teams. This demonstrates the importance of teamwork training among medical providers to optimize management of complex and emergent obstetric conditions.

<table>
<thead>
<tr>
<th>Simulation</th>
<th>Total Teamwork</th>
<th>Closed Loop Comms</th>
<th>Orientation of new team members</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abruption</td>
<td>0.90</td>
<td>0.68</td>
<td>0.00</td>
</tr>
<tr>
<td>Preeclampsia/Eclampsia</td>
<td>0.82</td>
<td>0.56</td>
<td>0.53</td>
</tr>
<tr>
<td>Sepsis</td>
<td>0.80</td>
<td>0.85</td>
<td>0.00</td>
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<tr>
<td>Cardiac Arrest</td>
<td>0.81</td>
<td>0.71</td>
<td>0.47</td>
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<tr>
<td>Venous Thromboembolism</td>
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<td>0.49</td>
<td>0.59</td>
</tr>
<tr>
<td>Diabetic Ketoacidosis</td>
<td>0.81</td>
<td>0.08</td>
<td>0.40</td>
</tr>
<tr>
<td>Thyroid Storm</td>
<td>0.85</td>
<td>0.66</td>
<td>0.32</td>
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</table>

* Spearman Correlation Coefficient
* Total teamwork score was based on objective completion of teamwork components as well as overall performance of team function.
* Orientation of new team members using Situation, Background, Assessment, and Recommendation format.

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**5 Impact of trimester of infection on COVID-19 disease progression in pregnancy**
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**OBJECTIVE:** COVID-19 infection is associated with increased morbidity in pregnancy. We evaluate the effect of trimester of COVID-19 infection on disease progression in pregnant patients.

**STUDY DESIGN:** This is a prospective cohort study of pregnant patients diagnosed with PCR-confirmed COVID-19 infection who delivered at a single urban hospital. Universal COVID-19 PCR testing was performed at hospital admission as well as for asymptomatic patients in inpatient, emergency department and outpatient settings. Disease severity was determined by review of medical records and defined as asymptomatic, mild, moderate, severe, or critical based on National Institutes of Health (NIH) criteria. We evaluated disease progression from asymptomatic to symptomatic infection, stratified by trimester of COVID-19 diagnosis.

**RESULTS:** From March 18, 2020 to May 31, 2021, 1092 pregnant patients were diagnosed with COVID-19, including 67 (6%) first trimester, 309 (28%) second trimester, and 716 (66%) third trimester. There were no significant demographic differences between groups; 87% of patients in all trimesters were Hispanic. Among patients admitted within 14 days of a positive test, 2/15% first trimester, 16 (44%) second trimester, and 24% third trimester patients were admitted for the indication of COVID-19 illness (Table 1). Across all trimesters, 993/1092 (90.9%) of COVID-19 infections were asymptomatic, mild, moderate, severe, or critical (p = 0.79) (Table 2).

**CONCLUSION:** Moderate, severe, or critical illness develops in almost 10 percent of pregnant patients. The frequency of COVID-19 disease progression in pregnancy does not differ by trimester of diagnosis.

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![Figure 1. ROC Curve for Good or Perfect Medical Performance based on Teamwork Scores for Each Simulation](Image)
6 Risk Factors for Mother to Child Transmission of Hepatitis C (HCV): A Prospective Observational Study

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OBJECTIVE: To identify risk factors for mother to child transmission (MTCT) of HCV.

STUDY DESIGN: A multicenter prospective observational study in pregnant people with a singleton gestation and HCV screening antibody signal to cut-off ratio \( \geq 24 \) weeks gestation. The primary outcome was MTCT defined by any one of the following criteria: infant HCV RNA positive at the 2-month visit, RNA or antibody positive at 18 months (a repeat test was used for confirmation if the RNA and antibody tests were discordant), or a clinical result that is either RNA or antibody positive obtained at least 18 months of age with a confirmed clinical diagnosis of HCV. Risk factors associated with MTCT were determined using backward elimination; variables significant at \( p < 0.05 \) were retained. Adjusted odds ratios (aOR) and 95% confidence intervals (CI) were estimated using multivariable logistic regression.

RESULTS: 109,379 pregnancies were screened for HCV; 1,224 were antibody positive and 772 were enrolled. 430 (56%) had follow-up data available to assess MTCT. The main reasons for lost to follow-up were lost contact (24%), refused specimen collection (5%), and infant placed in foster care or adopted (4%). Among those with follow-up data, 26 (6%, 95% CI 4% - 9%) infants were confirmed with MTCT. Risk factors for MTCT included maternal HCV RNA > 10^6 IU/mL (aOR, 95% CI: 8.24, 3.17-21.44) and antepartum bleeding (aOR, 95% CI: 3.23, 1.31-7.97). There was no difference in odds of MTCT among those with and without planned prelabor cesarean (aOR 1.18, 95% CI: 0.26–5.27) (Table 1).

Those with undetectable viral loads did not transmit HCV to their children.

CONCLUSION: This study confirms the MTCT rate of HCV to be around 6%. Level of viremia and antepartum bleeding were the most significant risk factors for MTCT. MTCT did not occur in those with undetectable viral loads, and planned prelabor cesarean did not impact MTCT in this cohort. These findings may influence the selection of patients who may benefit from an interventional trial.