

CHILDREN'S HOSPITAL

Separating Craniopagus Twins: Selecting and Empowering the Team for a "Once in a Lifetime Surgery"



ASSESSMENT:

Abigail and Micaela were born connected at the skull and brain in December 2019 at the University of California at Davis' Children's Hospital in Sacramento, California. Tasked by the lead neurosurgeon with coordinating the twin's separation surgery, the primary author was responsible for selecting and training the nursing team of UC Davis Children's Hospital's first surgical separation of conjoined twins.



"Abigail" and "Micaela" at 4-months old.

PLANNING:

"purple" team members would care for Micaela.

practiced mock codes with the test mannequins in various positions.



OUTCOME:

The day of surgery, the algorithms were clearly displayed and followed. Scrub nurses providing breaks scrubbed in 15 minutes early to observe "flow" and limit hand-off report. Additionally, scrub nurses double-scrubbed from 2330-0415 related to bleeding and critical dissections. Despite scheduling 4-hour breaks for nurses at night, most reported anxiety and inability to sleep and feeling the need to be in the room to help. The team neurosurgeons and anesthesiologists reported the nursing transitions were "seamless". Abigail and Micaela were successfully separated October 2020 in a 24-hour surgery. The nursing team emerged from the operating room with an immense sense of pride and accomplishment.

IMPLICATIONS FOR PERIOPERATIVE NURSING:

When planning for a complex surgical case, an all-RN staffing model allows for flexibility in role assignment. Encouraging team members to develop their own task and staffing algorithms was critical in fostering teamwork and collaboration. By empowering the team members, it increased job satisfaction and subsequently led to a cohesive, high functioning and successful team. These successes ultimately led to the most positive outcome possible in a rare and highly complex surgery—two separate healthy and robust baby girls.



IF <u>SUPINE</u> & 180°:

PRIMARY SCRUB RN: Secure drill cord, scissorcut lines, pull mayo back,

maintain sterility.

Secure drill cord, scissorcut lines, pull mayo back, maintain sterility. PRIMARY CIRCULATORS: prepare to supinate babies.

PRIMARY SCRUB RN:

IF PRONE & 180°:

CODE BLUE EVENT

ORANGE BACK-UP: Unplug cords, move mayo. **ORANGE PRIMARY CIRCULATOR:** Connect defibrillator pads.

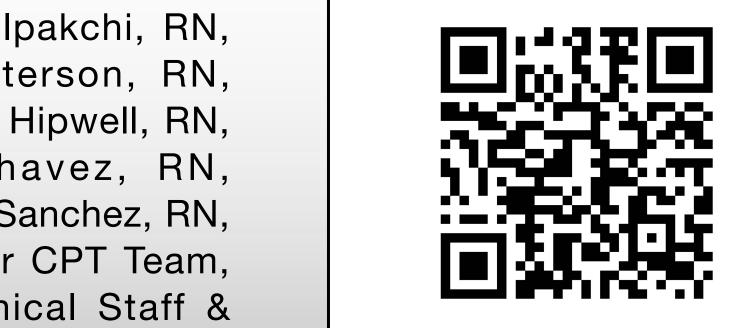
ORANGE PRIMARY CIRCULATOR: Connect defibrillator pads.

PURPLE BACK-UP: Cut & remove drapes. **PURPLE PRIMARY CIRCULATOR:** Position CPR board, start compressions.

PURPLE BACK-UP: Cut & remove drapes. **PURPLE PRIMARY CIRCULATOR:** Place CPR board, start compressions.

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For more information on the twins' journey.

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The primary author was the team leader for Fetal and Neurosurgery at UC Davis' Children's Surgery Center (CSC). Modeled after the "all-RN" Fetal Team, the team leader selected seven CSC registered nurses based on their experience in neurosurgical procedures, complex case management, and personality compatibility. The nurses were divided into two teams; "orange" team members would care for Abigail, and

IMPLEMENTATION:

The nurses practiced scrubbing and circulating numerous complex neurosurgical procedures prior to the separation. Several training sessions were held including: equipment layout, back table setups, instrumentation, and positioning with mannequins fused together simulating the twin's anatomy. The nursing team developed algorithms for general flow, induction, positioning/prepping, draping, emergency events, break relief and scrub rotations. The day before surgery, the nursing team fully staged the operating room. A dress rehearsal was held with all 30+ surgical team members. Team leaders delineated expectations of all team members for the day of surgery. The code sheets and algorithms were reviewed, and the team

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NURSING CARE PLANNING:

KEY COMPONENTS

FAMILY PSYCHOSOCIAL SUPPORT:

- Teaching
- Updates * Emotional support

RN TEAM **COORDINATION:**

- Roles
- Education
- Training

SAFETY:

- Team Breaks
- CODE BLUE Planning

SKIN CARE:

Protection

Prevention

Thermoregulation

MUSCULOSKELETAL

- CARE: Padding
- Prevention
- Positioning

POSITIVE SURGICAL **OUTCOME!**

