

Fall 12-12-2014

Relocation of ORC to OR2

Svetlana N. Schopp

University of San Francisco, svetlana.schopp@gmail.com

Follow this and additional works at: <https://repository.usfca.edu/capstone>

 Part of the [Maternal, Child Health and Neonatal Nursing Commons](#), [Other Nursing Commons](#),
and the [Perioperative, Operating Room and Surgical Nursing Commons](#)

Recommended Citation

Schopp, Svetlana N., "Relocation of ORC to OR2" (2014). *Master's Projects and Capstones*. 82.
<https://repository.usfca.edu/capstone/82>

This Project/Capstone is brought to you for free and open access by the Theses, Dissertations, Capstones and Projects at USF Scholarship: a digital repository @ Gleeson Library | Geschke Center. It has been accepted for inclusion in Master's Projects and Capstones by an authorized administrator of USF Scholarship: a digital repository @ Gleeson Library | Geschke Center. For more information, please contact repository@usfca.edu.

University of San Francisco
CNL Online Program
Prospectus Summary Brief:
Relocation of ORC to OR2

Specific Aim

Upon ORC relocation to OR2 on September 3rd, 2014, the microsystem will aim to maintain safety and quality of care of OB patients undergoing Cesarean Sections through effective teamwork, clear interdisciplinary communication, collaboration, and standardization of processes involved.

Author: Svetlana Schopp, RN, CNL Student

Background: The institution is a 25-bed not for profit rural health care facility and is a designated Critical Access Hospital; it is located in Northern California. In September of 2007, the voters of the district passed a General Obligation (GO) Bond with a 72% support, in the amount of \$98.5 million. This GO Bond provides the funds for various retrofitting projects around the campus. Thus, since 2008 the macrosystem has been undergoing various remodeling and retrofitting as a result of seismic upgrade requirements for the state of California. The Obstetric (OB) unit is next in line to be rebuilt to meet the seismic requirements. While the OB unit is being re-built, it will temporarily be housed on the Medical Surgical unit. This interim OB location does not have an operating room, thus Cesarean Sections (C/S) will need to be performed in the main operating room (OR).

Supportive Data: With this relocation of the OB, operating room dedicated to Cesarean sections (ORC) must be relocated to the main OR. One of the operating rooms within the main OR will be set up as a C/S OR to ensure 24/7 readiness and availability of this service to the patients in the community. The new practice will remain in place for at least two years while the new OB unit is being built and connected to the main hospital building.

- FMEA
Appendix A demonstrates complete results of the Failure Modes and Effects Analysis (FMEA). Following are some highlights. The FMEA team identified two Risk Priority Numbers (RPN) associated with unclear communication between obstetricians and OB RNs and lack of clear guidelines as to when to mobilize for a Cesarean Section. Another area that had a high RPN score was lack of timely initiation of emergency response when STAT C/S is needed. Additionally, the FMEA team scored high the failure mode of when the OB patient experiences post partum hemorrhage; the kit is not readily available in the main OR.
- Process Map Flowcharts
The process improvement team created process flow charts for high risk and low volume scenarios: (1) STAT Cesarean Sections during normal business hours: M-F 07-17 (Appendix B) and (2) STAT Cesarean Sections after hours, on weekends, and holidays (Appendix C). In addition, the team created an algorithm to standardize when to mobilize C/S patient to OR (Appendix D). C/S process algorithm highlights communication and patient flow processes in the new location (Appendix E). The team aimed at developing a standardized approach when responding in an emergency.

Microsystem Status Relative to the Project: Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis (Appendix F) aided in identifying of human and physical resources, processes and activities, physical environment, and trends in microsystem and macrosystem culture (Community Tool Box [CTB], 2014). The SWOT analysis revealed human resources strengths such as skilled clinical staff both nurses and physicians. It demonstrated that the new emergency Code Section, when activated in an emergency, would compensate for limited personnel availability and assist with safe patient transport to OR2 for impending Cesarean Section.

Search Strategies: One of the biggest concerns with this new process is the extended time that it takes to transport patient from OB to OR2. Thus, the literature search was based on industry standards of decision to incision and data that demonstrates the real life attainability as well as sustainability of this 30 minutes standard. Incidentally, the data also demonstrated the impact of the 30 minutes decision to incision standard on maternal and neonatal outcomes. The databases were searched for phrases “decision to incision”, “crash cesarean section”, “STAT cesarean section”, “recommendation”, and “standard”. The articles’ publication dates ranged from 2006 to 2014.

Databases Used: CINHAl Complete, PubMed, Scopus, and EBSCOhost.

Summary of Evidence: Mooney, Ogrinc, and Steadman (2007) assert that a small rural hospital can improve and sustain delivery by cesarean section response times. This can be done through implementing multiple small changes over time, through setting clear goals, promoting interdisciplinary teamwork, and providing effective leadership.

In this three-year study, de Regt, Marks, Joseph, and Malmgren (2009) demonstrate that utilization of collaborative interdisciplinary approach towards better communication and teamwork allowed this facility to implement sustainable innovations in reducing decision to incision times across the spectrum of cesarean deliveries.

In this prospective observational study Bloom et al. (2006) evaluated data over three-year span and concluded that decision to incision interval had no impact on maternal outcomes; while delivery within 30 minutes did not guarantee that infant safety. In addition, the authors emphasize the value of sound clinical judgment in establishing urgency in emergency situations.

Nielsen et al. (2007) performed a 15-month study with mid-study four-month training period for the intervention hospitals. Although this study found no significant differences in maternal or infant adverse outcomes between control and intervention groups, it did discover a significant difference in decision to incision time between these groups: control group at 33.3 minutes versus intervention group at 21.2 minutes, with $P=.03$. This study demonstrates that teamwork training can have positive effect on ensuring that incision to decision time remains as short as possible in emergency situations.

Tolcher, Johnson, El-Nahsar, and West (2014) systematic literature review and meta-analysis of the proportion of emergent cesarean sections performed within 30 minutes and difference in neonatal outcomes in such deliveries accomplished in 30 minutes or less versus in 30 minutes or more. Authors argue that there is no convincing evidence to suggest that neonatal morbidity is worse when the decision-to-incision or delivery exceeds 30 minutes, particularly for the highest-risk category 1 deliveries.

Stakeholders: The stakeholders are everyone who is affected by this process (Mind Tools, 2014). In this case they are OB, OR, and PACU nurses, obstetricians, anesthesiologists, respiratory therapists, pediatricians, and OB patients requiring C/S. The grid in Appendix G demonstrates the stakeholders for this process by power and interest.

Apply the Evidence: The literature review for best evidence based practice for decision to incision included observational studies, systematic meta-analysis reviews, and randomized control trial. The evidence demonstrated that 30 minutes interval of decision to incision is attainable through teamwork and communication training. Thus, a macrosystem must instill and foster effective communication and teamwork among clinicians involved in such emergencies in order to ensure timely and effective emergency interventions. These articles demonstrate that, in an emergency, an objective approach grounded in sound clinical judgment is needed to ensure fetal and maternal safety.

Business Case: Cost of patient transport in new location is \$10,416.72. Cost of transport in the old location was \$727.60. This represents more than ten times increase in cost for patient transport. No extra employees were allocated for the duration of performing cesarean sections in OR2, thus microsystems, including OB and OR, will need to work together to ensure patient's transport is accomplished in a safe and effective manner. Appendix H demonstrates the financial impact of the patient transport to and from OR2.

There is cost of lost revenue due to OR2 being exclusively dedicated to cesarean sections. An average cost of OR per minute is currently \$33.12 per minute. This is based on the last six-month financial data that demonstrates variability of the cost from \$19.65 to \$40.97 per minute. Since other surgical cases cannot be done in OR2, they may be done later in the day or even diverted to another facility. If they are done later in the day, the OR and recovery room staff may be paid overtime or call back. If the cases are diverted to another facility, then hospital completely loses that revenue.

In the event of an adverse outcome to mom or baby the change in location could be viewed as a liability with potential financial penalties. For instance, from 2006 to 2010, CNA and NSO report professional exposures for nurses in obstetrics is the highest with total paid indemnity of \$20,264,713 with average of \$382,353 per case.

Cost of two identical PPH carts and extra instrumentation is approximately \$6,000.00.

Cost of labor hours (200 hours) for CNL is approximately \$16,000.00.

Steps for Implementation: Gantt chart representing the activities timeline is demonstrated in Appendix I. The space between the vertical time bars is 365 days. The entire process from planning to implementation and evaluation is 16 months. As a rural hospital, we perform about ten cesarean sections per month, thus to have adequate number of cases to ensure adequate fine-tuning of the process has occurred, six months will be needed.

First, the FMEA team was formed to evaluate the process for any failures as well as the severity of those failures. In total, there were six FMEA meetings that identified various issues and obstacles to this process change.

New processes were developed and implemented. One process was the formulation and implementation of the Code Section emergency code: it is activated in the case of maternal or neonatal emergency to ensure adequate number of staff is available to transport patient to OR2. The Code Section policy and procedure was developed in collaboration with hospital Safety Committee that is charged with ensuring safe environment of care in the entire

macrosystem. Macrosystem-wide education was rolled out in August via electronic education system (Health Stream) and two Code Section drills were performed.

Prior to process implementation, key stakeholders were oriented to the new OR location. They included RTs, pediatricians, OB staff, and housekeeping personnel.

Since the implementation of this process, Plan-Do-Study-Act (PDSA) approach has been utilized for evaluation and further adjustment.

Supportive Theory: By utilizing Kurt Lewin's Change Theory as a framework to implement this change in process, we will be able to successfully attain our goal of maintaining safety and quality of care to C/S patients. Lewin (1951) outlined three stages before a change can take root in a system: unfreezing, moving, and refreezing (as cited in Mitchell, 2013, p. 32). Currently clinicians are undergoing moving and refreezing stages of the change by adjusting to this new process.

Results/Outcomes:

1. Since implementation of this new process, maternal and neonatal care has been remained of high quality and safe. Staff and physicians have become more comfortable with the new location.
2. As of November 15th, 2014, 26 cesarean sections have been performed, ten of which were elective. Four out of ten were late arriving to the OR. One late patient in the OR arrival was due to misplaced paperwork in OB, two were due to obstetrician performing ultrasound at bedside in OB immediately before going to OR, and last one due to leaving OB unit late. OB staff maintains patient's chart intact, ensuring it is complete; resolved as of October 10th. A recommendation was made for obstetricians to complete any preoperative interventions no later than 20-30 minutes before scheduled patient time in OR; this is work in progress and has not been resolved. Currently, if an elective C/S is scheduled for 0730, OB nurses have only about 5 minutes for hand off report, which may be inadequate. Recommendation has been made for OR staff to transport patients for elective C/S and OB nurse joining in OR2 after hand off report is completed; this has not been resolved yet.
3. Upon initiating C/S cases in OR2, it was noted that suction equipment for neonate resuscitation was not installed in the new location. Immediate resolution on October 17th: suction tree installed next to the neonatal warmer/resuscitation area.
4. Vaginal delivery complications: postpartum hemorrhage, operative delivery with forceps or vacuum assisted. These patients used to be taken into ORC, now are being treated up in OB due to prolonged transport. Need to work with obstetricians, OB and OR staff to develop standardized approach and algorithm to eliminate confusion and ensure timely response.
5. Preoperatively, patient's support person waits in the hallway before he/she can join the patient in OR2. This has been identified as inadequate. The team is working on a more inviting waiting environment.

Recommendations: Continue with Plan-Do-Study-Act cycles to further streamline and standardize the new process. Standardize postpartum hemorrhage processes for both C/S patients and vaginal delivery patients, specifically to clear up expectations when to mobilize to OR. Improve efficiencies for elective cesarean sections timely arrival to OR.

References

- Bloom, S. L., Leveno, K. J., Spong, C. Y., Gilbert, S., Hauth, J. C., Landon, M. B., ... Gabbe, S. G. (2014). Decision-to-incision times and maternal and infant outcomes. *Obstetrics & Gynecology*, *108*(1), 6-11. doi: 10.1097/01AOG0000224693.07785.14
- Community Tool Box. (2014). Section 14. SWOT analysis: Strengths, weaknesses, opportunities, and threats. Retrieved from <http://ctb.ku.edu/en/table-of-contents/assessment/assessing-community-needs-and-resources/swot-analysis/tools>
- de Regt, R. H., Marks, K., Joseph, D. L., & Malmgren, J. A. (2009). Time from decision to incision for cesarean deliveries at a community hospital. *Obstetrics & Gynecology*, *113*(3), 625-629. doi: 10.1097/AOG.0b013e31819970b8
- Institute for Healthcare Improvement. (2004). Failure modes and effects analysis (FMEA). Retrieved from <http://www.ihp.org/resources/Pages/Tools/FailureModesandEffectsAnalysisTool.aspx>
- Mind Tools. (2014). Stakeholder analysis: Winning support for your projects. Retrieved from http://www.mindtools.com/pages/article/newPPM_07.htm
- Mitchell, G. (2013). Selecting the best theory to implement planned change. *Nursing Management*, *20*(1), 32-37.
- Mooney, S. E., Ogrinc, G., & Steadman, W. (2007). Improving emergency caesarean delivery response times at a rural community hospital. *British Medical Journal Quality & Safety*, *16*(1), 60-66. doi: 10.1136/qshc.2006.019976
- Nelson, E. C., Batalden, P. B., & Godfrey, M. M. (2007). *Quality by design: A clinical microsystems approach*. San Francisco, CA: Jossey-Bass.
- Nielsen, P. E., Goldman, M. B., Mann, S., Shapiro, D. E., Marcus, R. G., Pratt, S. D., ... Sachs, B. P. (2007). Effects of teamwork training on adverse outcomes and process of care in labor and delivery: A randomized controlled trial. *Obstetrics & Gynecology*, *109*(1), 48-55. Doi: 10.1097/01.AOG.0000250900.53126.c2OSHPD. (2013). Seismic compliance bills. Retrieved from http://www.oshpd.ca.gov/FDD/seismic_compliance/SB90/index.html
- OSHPD. (n. d.). Seismic retrofit program overview. Retrieved from http://www.oshpd.ca.gov/fdd/seismic_compliance/SB1953/SB1953Overview.pdf
- TFHD. (n. d.) Tahoe Forest Hospital District measure C projects. Retrieved from <http://measurecprojects.com>
- Tolcher, M. C., Johnson, R. L., El-Nashar, S. A., & West, C. P. (2014). Decision-to-incision time and neonatal outcomes: A systematic review and meta-analysis. *Obstetrics & Gynecology*, *123*(3), 536-548. doi: 10.1097/AOG.0000000000000132

Appendix A

FMEA: Relocation of ORC to OR2 (1 of 5)

Steps in the Process	Failure Mode	Failure Causes	Failure Effects	Likelihood of Occurrence (1-10)	Likelihood of Detection (1-10)	Severity (1-10)	Risk Priority Number (RPN)	Actions to Reduce Occurrence of Failure
1. ORC team make determination of needs STATE/S	a. unclear communication	a. Hierarchy of RN fear/intimidation by MD, did not hear MD, not using SBAR (MD & RN);	a. delay of pt care, increased morbidity and mortality (M&M)	8	10	10	800	Work with obstetricians on collaborative solution; Manual placenta extraction, vacuum and forceps delivery; notifying ORC crew; guidelines/clear expectations, stand by ORC crew (on campus, in dept, at home?) & which members of ORC crew.
	b. lack of clear guidelines when to mobilize to OR2	b. lack of standardization, unclear about individual physician's preferences	b. delay of pt care, increased M&M	10	10	10	1000	Work with obstetricians on collaborative solution
	c. unable to locate RN supervisor starting call ORC crew in	c. current communication system does not reach everyone (iPhones, portable phones, hard-wired phones, overhead paging, etc.)	c. delay of pt care, increased M&M	7	1	10	70	
2. Overhead page in hospital: Code Stork OB	a. team members do not know to report their posts	a. involved w/ other emergencies/pts, current communication system does not reach everyone, float RN not in house	a. delay of pt care, team members frustrated	5	1	5	25	
	b. lack of understanding & education of their roles	b. staff new to facility, code not delineated in ID badge, lack of checklist/standardization	b. delay of pt care, team members frustrated	9	10	8	720	
3. Initial calls to Peds. RN supervisor ORC crew, float RN, & PACU RN	a. unable to locate personnel	a. home/cell phone not working, staff did not know he/she was on call, lack of understanding/role assignment, lack of checklist	a. delay of pt care, increased M&M, substandard pt care due to lack of help	2	1	6	12	
	b. personnel unable to get in	b. weather, traffic, car accident, road closure	a. delay of pt care, increased morbidity and mortality (M&M), substandard pt care due to lack of help	1	1	8	8	
	c. personnel unable to get in fast	c. does not have in truck key proper	a. delay of pt care, increased M&M, substandard pt care due to lack of help	5	10	10	500	
	d. unable to reach everyone in timely manner	d. too long to reach everyone (calling of people via home phone, cell, pager)	a. delay of pt care, increased M&M, substandard pt care due to lack of help	10	1	10	100	
4. Pt to OR2 via bed by OB RN, RT, & float RN.	a. lack of help w/transport	a. OB RN in bed w/pt	a. delay of pt care, injured staff	9	1	10	90	
	b. obstacles/patients in hallways	b. pts out on walk in hallway, equipment not put away	b. compromised safety, risk for injury: pt, staff	5	1	10	50	
	c. support person passes out	c. response to stress/emergency (e.g. vasovagal)	c. drain on resources/staff, injured staff or support person	2	1	4	8	
	d. blood/fluid tracked on floor from OB bed	d. secondary to pt's condition	d. injured staff (slip hazard), infection control issue, increased need for housekeeping	3	5	4	60	

Appendix A (Cont'd)
FMEA: Relocation of ORC to OR2 (2 of 5)

	e. Elevator in use/not available/out of svc	e. Both elevators broken, backup generator is down.	e. Delay of pt care, injured staff	1	1	10	10	
4.2 Support person accompanies pt to surgery or is escorted by Med. Surg. RN.	a. Support person too distraught	a. Response to stress/emergency, no one is available to escort support person to surgery.	a. Train on resources/staff, may get violent -> staff safety compromised, pt is distraught	3	5	8	120	
5.1 OB team initiates C/S in OR2.	a. OB team unable to start C/S	a. Lack of multidisciplinary training/involvement, lack of ongoing competency training to initiate C/S, lack of checklist/reference materials, not following checklist, lack of support personnel, not knowing how to operate OR equipment (e.g. Bovie, suction, monitor), not familiar w/ supply location including medications.	a. Delay of pt care, increased M&M	10	8	10	800	Work with obstetricians on collaborative solution
5.2 Support person waiting outside OR2 on a chair (provided).	a. Waiting alone.	a. Lack of personnel.	a. Increased emotional distress of support person, increased chance for litigation/legal liability, increased chance of violence from support person -> staff safety is compromised, decrease in pt/family satisfaction	10	1	3	30	
6. OR crew arrives to OR2 and to join in procedure.	a. Not a smooth transition of pt care	a. Lack of personnel to assume roles, staff arriving at different times	a. Frustrated/distraught for staff (OR and OB), unsafe situation for pt, compromised sterility -> increase risk for SSI	10	1	7	70	
	b. Unable to locate instruments due to chaos	b. Disorganized sterile field, chaos due to emergency, OB personnel unfamiliar w/ contents of trays	b. Frustrated/distraught for staff (OR and OB), unsafe situation for pt, potential for harm to pt as a result of retained surgical item/ sponge or instrument	8	1	8	64	
7. Baby is delivered.	7.1 Baby needs resuscitation: a. Not enough help	a. Lack of NRP trained staff, lack of multidisciplinary ongoing training	a. Delay of pt care, increased morbidity and mortality (M&M), increase in legal liability, increase in M&M to other pts in facility, support person is distraught -> increase for violence	10	1	10	100	
	b. Equipment failure (e.g. gases low)	b. Lack of consistency in equipment checks/checklist/role assignment	b. Delay of pt care, increased M&M, increase in legal liability, increase in M&M to other pts in facility, support person is distraught -> increase for violence	4	10	10	400	Work with RT on collaborative solution
	c. Lack of equipment (e.g. no neonatal cart)	c. Lack of consensus regarding the timeline as to when baby should be transported to nursery, not stocked timely	c. Delay of pt care, increased M&M, increase in legal liability, increase in M&M to other pts in facility, support person is distraught -> increase for violence	5	5	10	250	
	d. Lack of timely initiation of emergency response	d. Lack of NRP trained staff, lack of multidisciplinary ongoing training/consensus	d. Delay of pt care, increased M&M, increase in legal liability, increase in M&M to other pts in facility, support person is distraught -> increase for violence	8	8	10	720	

Appendix A (Cont'd)

FMEA: Relocation of ORC to OR2 (3 of 5)

	7.2. Mom needs resuscitation kit not available	a. Rx had not e-stock meds, back planning by/w/Rx.	a. Delay in pt care, increased morbidity and mortality (M&M), injured staff (slip hazard from blood on floor)	8	9	10	720	
	b. Other medical/surgical emergent conditions (e.g. hypovolemic shock, sepsis, difficult airway)	b. Mom's condition	b. Delay in pt care, increased morbidity and mortality (M&M), injured staff (slip hazard from blood on floor)	2	5	10	100	Work with obstetricians on collaborative solution
	c. Back in timely initiation of emergency response	c. Back in NRP trained staff, back in multidisciplinary ongoing training/consensus	c. Delay in pt care, increased morbidity and mortality (M&M), injured staff (slip hazard from blood on floor)	6	10	10	600	Work with obstetricians on collaborative solution; This also applies to vaginal deliveries (post partum hemorrhage -> STAT to OR)
8. OB personnel transports baby to nursery via isolette to resuscitation bed. Support person accompanies baby.	8.1. Transporting unstable baby: Back in equipment for transport (e.g. portable O2, pulse oxymeter, intubation supplies)	a. Back in consistency in equipment checks/checklist/role assignment	a. Delay in pt care, increased M&M, increase in liability/chance of litigation	8	5	10	400	Work with RT on collaborative solution
	b. No resuscitation bed is available for transport	b. Resuscitation bed was not returned after being used in prior pt	b. Delay in pt care, increased M&M, increase in liability/chance of litigation	4	1	10	40	
	c. No warming source for baby	c. No warming blankets in OR2 warmer	c. Baby may experience hypothermia	2	1	7	14	
	d. OB not prepared for unstable baby	d. Back in communication to ODB	d. Back in help, substandard pt care	4	1	10	40	
	e. No elevator available to transport the baby	e. Elevator(s) in use or not available due to being out of service	e. If baby hand-carried, fall risk -> injury to baby, or staff, baby abduction as this would not be usual protocol	1	1	10	10	
	8.2. Transporting stable baby: Back in equipment for transport (e.g. portable O2, pulse oxymeter)	a. Back in consistency in equipment checks/checklist/role assignment	a. Delay in pt care, increased M&M, increase in liability/chance of litigation	8	5	2	80	Work with RT on collaborative solution
	b. Back in equipment for transport	b. Isolette was not returned back to OR2, another baby is in isolette	b. Delay in pt care, increased M&M, increase in liability/chance of litigation	2	1	2	4	
	c. No warming source for baby	c. No warming blankets in OR2 warmer	c. Baby may experience hypothermia	2	1	2	4	
	d. OB not prepared for stable baby	d. Back in communication to ODB	d. Back in help, substandard pt care	10	1	1	10	
	e. No elevator available to transport the baby	e. Elevator(s) in use or not available due to being out of service	e. If baby hand-carried, fall risk -> injury to baby, or staff, baby abduction as this would not be usual protocol	1	1	2	2	
9. Surgery concluded	a. Back in correct suture for closure	a. Not stocked, backordered	a. Delay in pt care	2	1	2	2	
	b. Retained instrument or sponge	b. No initial counts performed, no x-ray taken at the end of case	b. Pt exposure to x-ray (before closure & after closure), re-open the incision to remove any unintentionally retained items, other injuries: bladder, bowel, vessels, or ureters)	5	8	10	400	Work with obstetricians on collaborative solution

Appendix A (Cont'd)
FMEA: Relocation of ORC to OR2 (4 of 5)

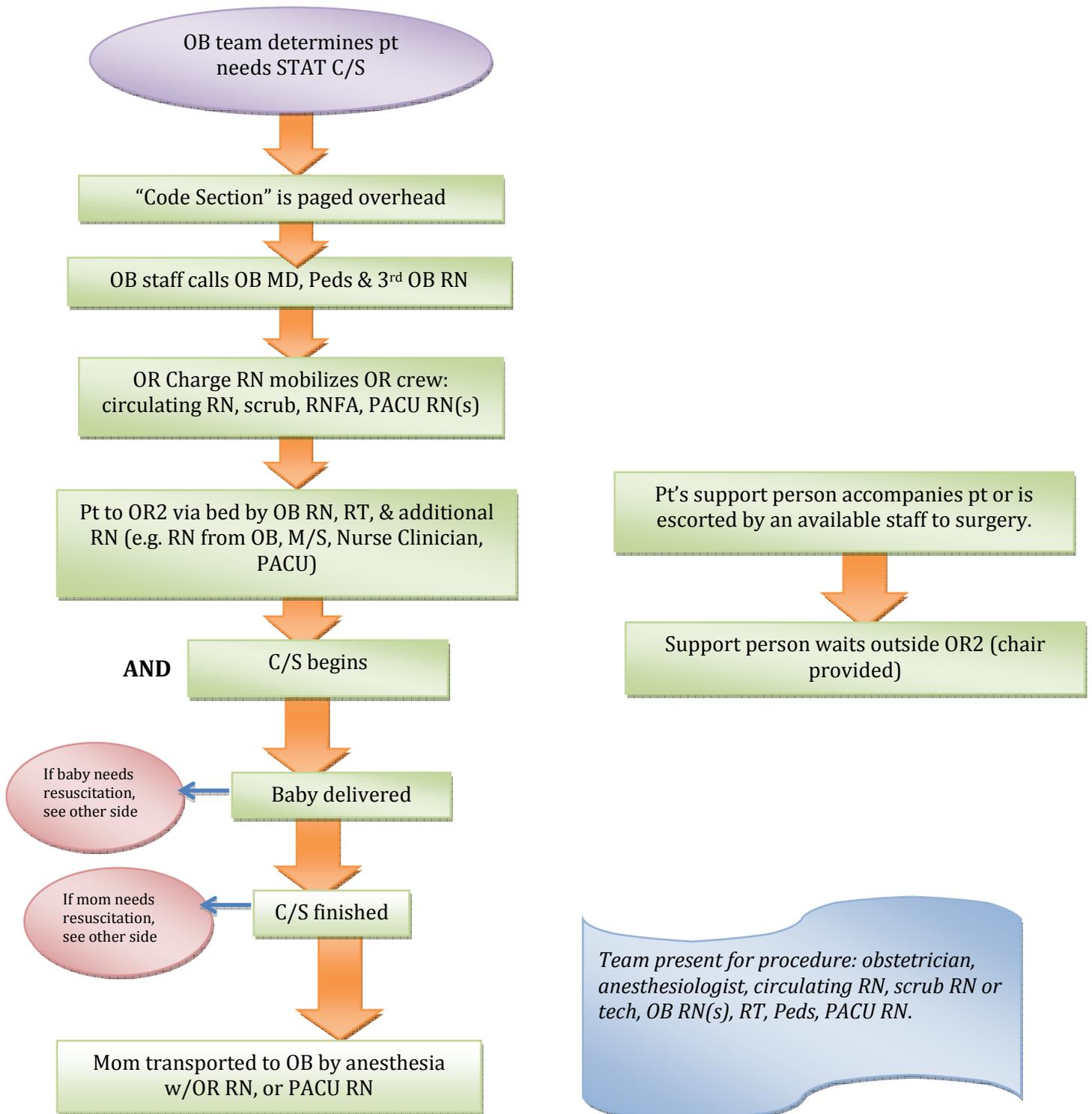
	c. boggy uterus	c. infection, tonic uterus, long labor	c. postpartum hemorrhage/DIC, hysterectomy, increase in MM, decrease in mom's milk supply > failure to thrive for baby	7	5	10	350	
10. Anesthesiologist and circulating RN transport mom to postpartum in OB	10.1 transporting unstable mom to OB; DO NOT stabilize!	n/a	n/a	0	0	0	0	
	10.2 transporting stable mom to OB; mom becomes unstable	a. mom's condition changes unexpectedly	a. delay of care, increased MM, injury to staff, increased risk of injury to staff, no resources while enroute, support persons distraught if the did not go up w/ baby	4	9	10	360	Work with anesthesiologists in collaborative solution
	b. low PSI or no tank available	b. lack of consistency in equipment checks/checklist/role assignment	a. delay of care, increased MM, injury to staff, increased risk of injury to staff, no resources while enroute, support persons distraught if the did not go up w/ baby	2	1	2	4	
	c. lack of monitor for transport	c. both monitors are being used in PACU	a. delay of care, increased MM, injury to staff, increased risk of injury to staff, no resources while enroute, support persons distraught if the did not go up w/ baby	3	1	2	6	
	d. OB unit or PACU do not know mom is in the way up to OB	d. lack of communication to OB or PACU	a. delay of care, increased MM, injury to staff, increased risk of injury to staff, no resources while enroute, support persons distraught if the did not go up w/ baby	3	1	3	9	
	e. anesthesiologist needing to attend to another pt/emergency	e. critical pt in another unit	a. delay of care, increased MM, injury to staff, increased risk of injury to staff, no resources while enroute, support persons distraught if the did not go up w/ baby	2	1	2	4	
	f. elevator(s) in use or not available	f. both elevators broken, backup generator is down	a. delay of care, increased MM, injury to staff, increased risk of injury to staff, no resources while enroute, support persons distraught if the did not go up w/ baby	1	1	1	1	
g. equipment failure	g. lack of consistency in equipment checks/checklist/role assignment	a. delay of care, increased MM, injury to staff, increased risk of injury to staff, no resources while enroute, support persons distraught if the did not go up w/ baby	1	1	1	1		

Appendix A (Cont'd)
FMEA: Relocation of ORC to OR2 (5 of 5)

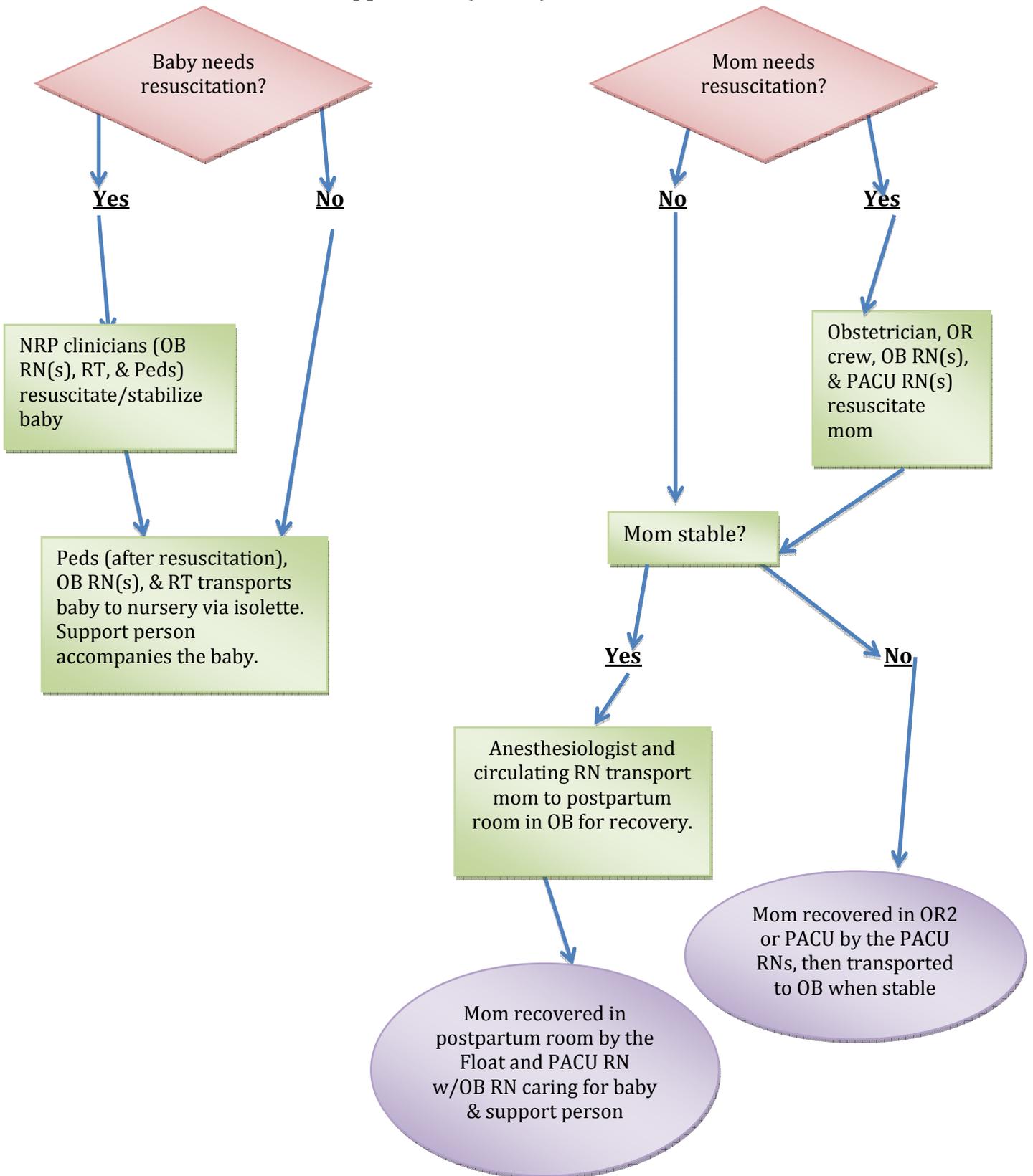
11. Mom recovered in postpartum room by RN/PACU RN, & OB RN/baby as well as support person in the rm.	a. Equipment for PACU RN not working (e.g. monitor is broken, lack of supplies)	a. Lack of communication to OB &/or PACU	a. Increased M&M, not meeting the standard of care	8	8	8	512	
	b. Mom becomes unstable	b. Mom's condition changes unexpectedly	b. Increased M&M, not meeting the standard of care, distress to support person	6	8	10	480	Work with obstetricians on collaborative solution
	c. Postpartum hemorrhage/boggy uterus	c. No standardized hemorrhage protocol available	a. Increased M&M, not meeting the standard of care	4	10	10	400	Work with obstetricians on collaborative solution

Appendix B

STAT Cesarean Sections (Regular Business Hours: M-F, 07-1730) When Performed in OR2

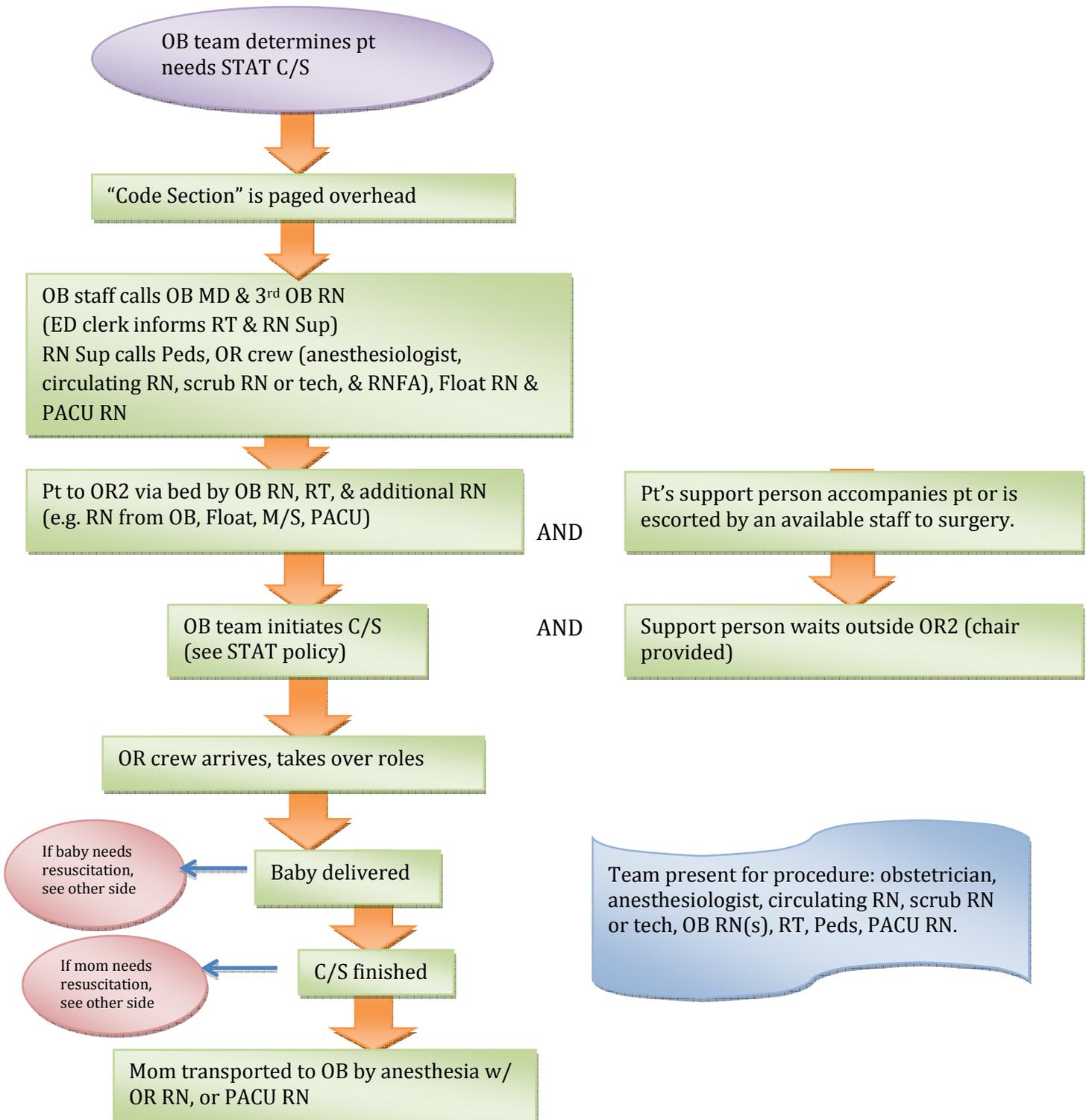


Appendix B (Cont'd)

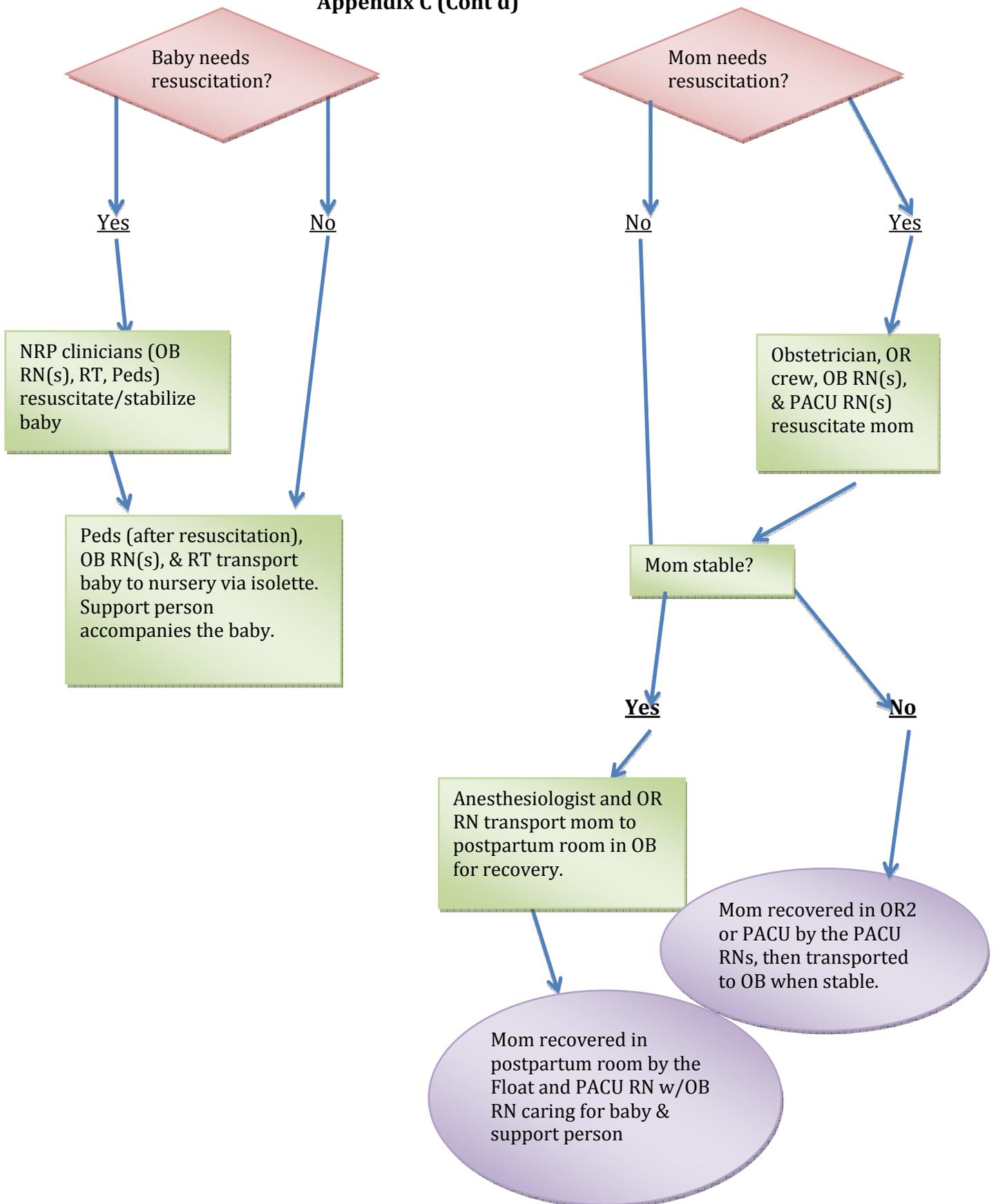


Appendix C

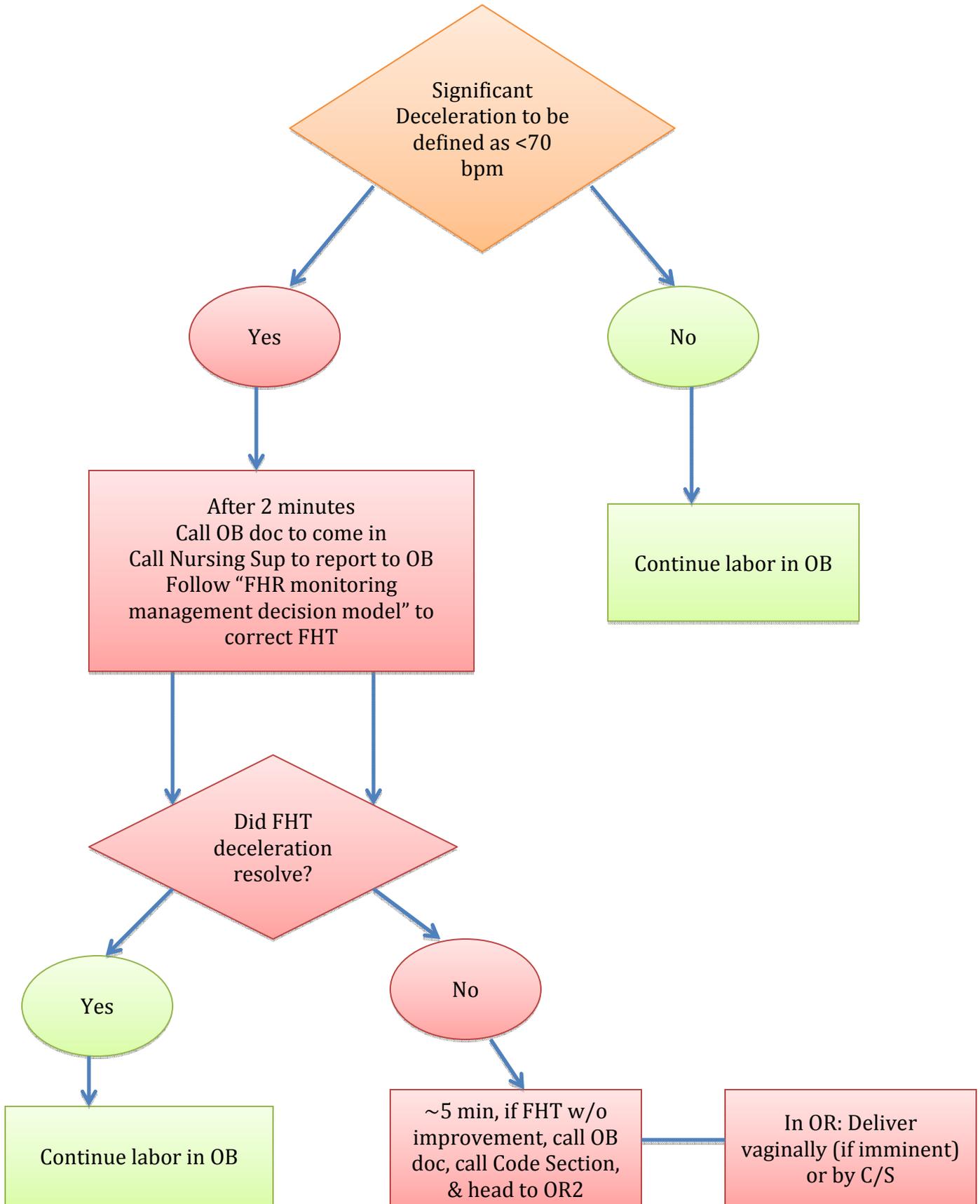
STAT Cesarean Sections (after hours, on weekends, & holidays) When Performed in OR2



Appendix C (Cont'd)



Appendix D
Mobilizing Patient for Cesarean Section



Appendix E

Cesarean Section Process Algorithm for Interim OB Period
(Effective September 3rd, 2014)

	Alerting/Calling in OR team	Alerting/Calling in PACU/Float RN	Preop Transport Pt to OR	OR Report to PACU/Float RN	Postop Transport Pt to OB
STAT after hours, weekends & Holidays	RN Supervisor, upon activation Code Section	RN Supervisor, at the same time as calling in OR team	OB RN, RT, & another nurse as needed; to OR2 directly	PACU/Float RN will likely be in OR2 or will call x3236 to get report	OR RN & anesthesiologist, may need to stay in PACU for recovery
STAT M-F, 07-17	OR Charge RN, upon activation of Code Section	Per Code Section activation, or by OR Charge RN	OB RN, RT, & another nurse as needed; to OR2 directly	PACU/Float RN will likely be in OR2 or will call x3236 to get report	OR RN & anesthesiologist, may need to stay in PACU for recovery
Urgent after hours, weekends, & Holidays	RN Supervisor	OR crew upon their arrival to hospital	OB to coordinate w/OR team or RN Sup; to OR2 directly	PACU/Float RN will set up monitors in postpartum Rm, then call x3236 for report	OR RN & anesthesiologist; depending on pt's condition, may need to stay in PACU
Urgent M-F, 07-17	OR Charge RN	OR circulator when calling report about 15-20 minutes before procedure end	OB to coordinate w/OR Charge RN PRN; to OR2 directly	OR circulator to call report about 15-20 minutes before procedure end	OR RN & anesthesiologist; depending on pt's condition, may need to stay in PACU
Non-Urgent, elective after hours, weekends, & holidays	RN Supervisor	OR crew upon their arrival to hospital	OB to coordinate w/OR team or RN Sup; to OR2 directly	PACU/Float RN will set up monitors in postpartum Rm, then call x3236 for report	OR RN & anesthesiologist
Non-Urgent, elective M-F, 07-17	OR Charge RN	OR circulator when calling report about 15-20 minutes before procedure end	OB RN & OR PCT to PACU or PAAS, about 15 min before scheduled OR time	OR circulator to call report about 15-20 minutes before procedure end	OR RN & anesthesiologist

Edited 09/22/14

Appendix F

SWOT Analysis for Relocation of ORC to the Main OR

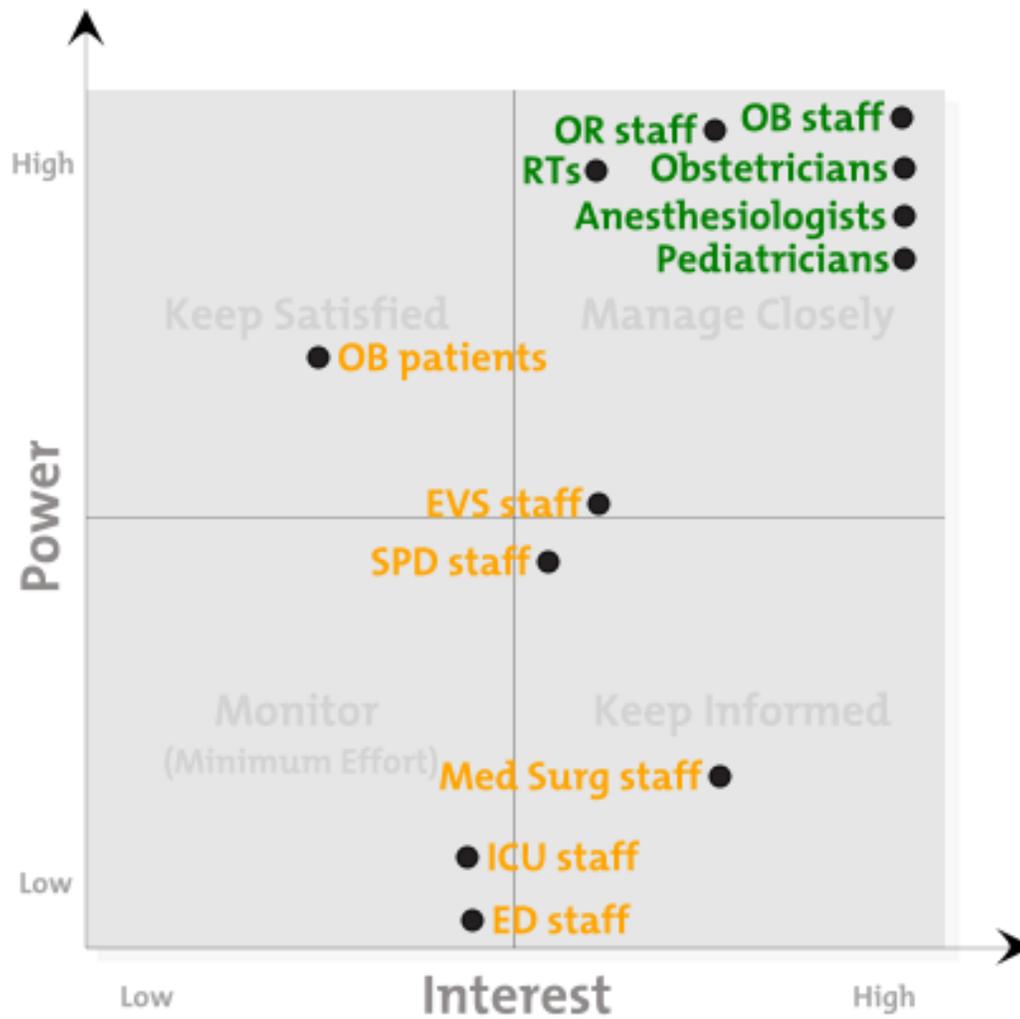
Internal Factors

<i>Strengths</i>	<i>Weaknesses</i>
<ul style="list-style-type: none"> • Skilled staff (OB, OR, PACU, MDs, etc.); • New Code Section emergency code to ensure needed help is available in an emergency • OR team would have faster response time due to not needing to report to OB • Continued ability to provide care to OB pts needing C/S 	<ul style="list-style-type: none"> • Longer patient (pt) transport time (from 30 seconds to 4 minutes or longer) • Limited number of OB staff to assist w/ pt transport and to remain on OB unit for other pts • Less ORs available for other surgical pts • OB staff is unfamiliar with OR2 location • 2 years for interim location

External Factors

<i>Opportunities</i>	<i>Threats</i>
<ul style="list-style-type: none"> • Improve communication among clinicians • Develop checklists to ensure standardized approach in pt care • Increase efficiency in providing optimal patient care in consideration of the longer transport time 	<ul style="list-style-type: none"> • Inability to run another OR electively or in an emergency, revenue loss • May take more then 2 years to build new OB unit due to unforeseen construction barriers

Appendix G
Stakeholder Grid



Green = advocates & supporters

Orange = neutral

Red = blockers & critics

Appendix H

Cost of Maternal Transport

	Number of Staff for Mom Transport	Mom Transport Time (to and from)	Total number of C/S per year (average of 3 years)	Total time for Mom Transport per Year (based on total # of staff)	Annual Cost of Mom Transport Time (based on total # of staff)	Difference in Cost for Maternal Transport
ORC (old location)	2 RNs	2min/case	120	480min = 8hr	8hr x \$72.76 = \$582.08	Base cost
OR2 (new location)	2RNs & 1PCT	20min/case	120	RN: 4,800min = 80hr PCT: 2,400min = 40hr	RN: 80hr x 72.76 = \$5,820.8 PCT: 40hr x 38.5 = \$1,540.0	Increase of \$6,778.72

Cost of Neonatal Transport

	Number of Staff for Baby Transport	Baby Transport Time (to and from)	Total number of C/S per year (average of 3 years)	Total time for baby Transport per Year (based on total # of staff)	Annual Cost of Baby Transport Time (based on total # of staff)	Difference in Cost for Neonatal Transport
ORC (old location)	1 RN	1min/case	120	120 = 2hr	2hr x \$72.76 = \$145.52	Base cost
OR2 (new location)	2 RNs	10min/case	120	2,400min = 40hr	RN: 40hr x 72.76 = \$2,910.4	Increase of \$2,764.88

*Calculations are based on annual SWB compensation package for a full time RN (\$151,336.00 -> \$72.76/hr) and PCT (\$80,073.00 -> 38.5/hr).

Appendix I

Timeline for Relocation of ORC to OR2

