Trimming the Fat: Improving OR Access for Breast Free Flaps

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Background

Every year, Memorial Sloan Kettering Cancer Center (MSK) performs over 250 breast free flap procedures. With a 30% increase in volume between 2016-2018, there was a need to find a way to meet this increase in demand while working within the constraints of limited OR time/space and limited inpatient bed space.

An Operational Excellence (OpEx) project titled "Plastics Breast Free Flap Project" was created and included multi-disciplinary representatives from the entire patient care continuum. With the main goal focused on ways to safely increase the number of flaps done annually, the project team was divided into two sections: the intraoperative workgroup and the length of stay reduction workgroup. Each team was tasked with reviewing current workflows and procedures to see what could be streamlined or done more efficiently while still maintaining a safe and high level of patient care.

Description of Team

The multidisciplinary intraoperative workgroup included two workstreams:

- Workstream one: staff from the pre-surgical area and PACU.
- Workstream two: operating room nurses (Plastics Service Team Leads), surgeons, anesthesia staff, central processing technicians and OR leadership.

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Process

The OR team leads, and project designate (OpEx) worked closely with staff members to generate ideas and solutions to help improve time efficiency in surgical set up and overall patient turn over. The surgeons were consulted on ways to standardize instrumentation, medications, and equipment. The surgeons committed to increase the number of surgical procedures being done in a day with lesser amount of time of preparation in terms of surgical set up through streamlining instrumentation and process standardization as well as decreasing the total number of instruments being used during the case. Separate meetings were held with the Central Processing Supervisor and Operating Room Pharmacist to discuss the plans to change the instrument tray contents and standardize medications used by the team. The service team leads edited pick lists and preference cards to reflect the new trays, standardized medications and supplies. The team leads were also responsible for communicating the changes to all OR staff.

Surgeons and team leads review instruments, supplies and equipment used during free flap cases. → **Reduced overall number of instruments and combined trays to create a universal free flap tray to be used by all surgeons for all free flaps.** → **Team leads worked with CPD to break down current trays and to combine instruments into universal free flap trays.** → **One universal breast free flap picklist created to be used by all 11 plastic surgeons for all breast free flap cases.**

DIEP Free Flap Time Collection

Attendings & Fellows – Verbalize the start & end of each procedure step so your time can be documented.
Circulating Nurse – **Open the RedCap survey link** before OR set-up & **do not** navigate from the page until all time stamps have been completed, or data will need to be re-entered. Don't forget **initial count complete** time!

#	Procedural Step	Start Time	End Time	Interim Tasks
1	**Marking & Prepping**	**Anesthetic induction complete**	**First incision**	• Foley insertion • Patient positioning • Site marking/drawing • Skin prep & draping
2	**Preparation of Recipient Vessels**	**PLA service incision** (1st & 2nd Sides - Bilateral)	**Place moist lap pad in chest** (1st & 2nd Sides - Bilateral)	• Implant removal (if applicable) • Capsulectomy (if applicable) • Exposure & dissection of IMA/V
3	**Exposure of Perforators**	**1st incision of abdomen** (1st & 2nd Sides - Bilateral)	**Fascial incision** (1st & 2nd Sides - Bilateral)	• Elevation of flap(s) from rectus sheath • Dissection of SIEV
4	**Dissection of Perforators**	**Fascial incision** (1st & 2nd Sides - Bilateral)	**Pedicle dissection end** (1st & 2nd Sides - Bilateral)	• Fascial incision • Perforator dissection • Pedicle dissection
5	**Micro Anastomoses**	**Set-up of micro & scope** (1st & 2nd Sides - Bilateral)	**Ischemia end per flap** (1st & 2nd Sides - Bilateral)	• Set-up of micro • Venous anastomosis • Arterial anastomosis
6	**Inserting of Flap**	**Begin inset** (1st & 2nd Sides - Bilateral)	**Finish inset** (1st & 2nd Sides - Bilateral)	• Flap shaping
7	**Abdominal Closure**	**Fascial closure**	**Abdominal suturing completed**	• Table re-positioning • Mesh insertion (if applicable) • Umbilicus sutured • Fascial closure • TAP block

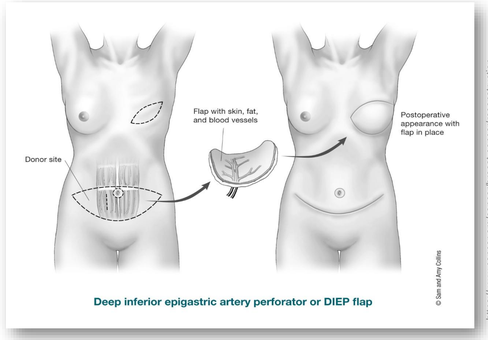
To assist the OR nurses with data collection, time collection posters were posted in each operating room.

MSK OpEx PLASTICS DIEP FREE FLAP GOALS

DAY OF WEEK	INCISION TIME	TOES OUT	LATERALITY
MONDAY	9:45 am	2:45 pm	UNILATERAL
		4:45 pm	BILATERAL
TUESDAY TO FRIDAY	8:00 am	1:00 pm	UNILATERAL
		3:00 pm	BILATERAL

ROLES	EXPECTATIONS
ANESTHESIA	- Follow breast flaps enhanced recovery guidance for anesthetic
NURSING	- Set-up according to standardized picklist - Prompt goal setting at timeout
SURGEONS / PAs	- Communicate completion goal time at timeout - Administer TAP block before fascial incision

During timeout, the surgical team reviewed the free flap goals for the case. This helped set the expectation for the day amongst all team members.



Outcomes

The data collected during this project showed a small decrease of 5 minutes in overall setup time. While the change is small, it has spurred the team to continue to look for ways to reduce complexity of setup and decrease overall time in the operating room. In addition, the standardization of surgical instrumentation into a universal tray made it possible to utilize the same tray across a variety of free flap cases. For example: fibula flaps and soft tissue flaps.

It has also led to the creation of singular picklists and preference cards (with minor deviations noted) for all procedures performed by the plastic surgery service. The inpatient workflow did see a decrease in length of stay (down to 2-days discharge post-op from 3-4 days) which was made possible through the standardization of workflow process, treatment regimen, and recovery approach.

Perioperative Implications

The inter-collaboration with varying disciplines within the hospital setting allowed for a review of current practices and the ability to find areas of improvement. This process created changes in the OR that led to ease of set up through standardization, increase in efficiency and shorter time in the OR.