chosen, leading to 53 center websites after accounting for duplications. The websites were reviewed. Answers to select questions were recorded and assessed.

**RESULTS:** Answers to questions were highly variable between websites with disparate statements noted, including:
1. 13% of websites state that surgery is required for all craniosynostoses.
2. 14% of websites state that if untreated, craniosynostosis mostly or always leads to developmental delay.
3. 95% of websites state there's a combined plastic surgical-neurosurgical team approach. 5% are neurosurgeons working alone.
4. 22% of websites only mention open surgical correction. No sites exclusively mention endoscopic techniques.
5. The maximum age for endoscopic surgery is less than 3 months for 50% of sites, 3–6 months by 44%, and 8 months by 6% of websites.
6. 51% of websites obtain CT-scans routinely. 4% of centers do not routinely scan. 44% do not mention CTs.
7. 76% of websites do not address if blood transfusion is required. 4% of centers claim transfusion is only required for an open approach.

**CONCLUSION:** The most search-engine-optimized craniofacial center websites often are not comprehensive and provide inaccurate and variable information to families.

**42.**

**LETTING GO UNDER CONTROL: RESIDENT AS PRIMARY SURGEON FOR A CONSECUTIVE, NON-SELECTIVE SERIES OF FURLOW PALATOPLASTIES**

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**PURPOSE:** Despite sound anatomic rationale, and evidence of clinical effectiveness, some surgeons consider the Furlow procedure technically challenging and difficult to teach - using it only selectively. The 2016 ABPS MoC cleft palate tracer data indicates only 14% of velar repairs achieved using the Furlow technique. To measure the outcomes of a consecutive series of primary Furlow palatoplasties in which plastic surgical residents functioned as primary surgeon for all steps of all procedures under immediate supervision and guidance of the senior surgeon.

**METHODS:** Retrospective review of 75 consecutive primary palatoplasties over a 6-year span. Plastic surgical residents performed the velar repair using the Furlow technique exclusively and non-selectively for all cleft palate patients (including syndromic). Stringent inclusion criterion for speech evaluation was employed (age > 54 mos). Clinically relevant outcomes were measured.

**RESULTS:** Median age at surgery: 11 months Veau Classification: I (15%), II(45%), III(21%), IV(11%), V(5%), Fistula rate: 5.3%, Re-operation rate for fistula: 4%, Median age at final speech evaluation: 87 months, Incidence of hypernasal resonance > mild (2/6 score): 6.7%; nasal air emission: 0%; compensatory disarticulation: 13%, Re-operation rate for VPI-related symptoms: 4%, Average operative time (including myringotomies): 154 mins.

**CONCLUSION:** The Furlow repair is effective for all cleft types and all patients. These results demonstrate that plastic surgical residents performing the entire palatoplasty procedure under close supervision and guidance can achieve superior clinical outcomes. Facilitating the handover of procedural execution to a surgical trainee without ceding control or reducing safety or reliability is discussed.

**43.**

**5000 FREE FLAPS AND COUNTING: 10 YEARS OF A SINGLE ACADEMIC INSTITUTION’S MICROSURGICAL EXPERIENCE AND A PRACTICAL GUIDE TO DEVELOPING A SUCCESSFUL SURGICAL CULTURE**

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PURPOSE: Academic plastic surgery training depends upon open access to learning reconstructive techniques provided by free vascularized soft tissue coverage. Key components of this approach include recruitment of an accomplished and diverse faculty, broad-based collaboration, patient geographic outreach, and fundamental support from all levels of staff. This study reviews a 10-year experience of microsurgical procedures and illustrates a successful framework for building a harmonized microsurgery team.

METHODS: A 10-year retrospective institutional review was performed for FY 2006–2016. Microsurgical flap type, operative volume, and outcomes were measured across all microsurgery faculty and participating hospitals. Microvascular compromise and flap salvage rates were noted for the six highest volume surgeons, accounting for 97% of all free flap cases.

RESULTS: The 5000th flap was performed in December, 2015 within this institutional study period. Of the 6 highest volume surgeons, 4,847 free flaps were examined for microvascular compromise, with an institutional mean takeback rate of 1.53% across 4 participating hospitals. Overall, 74.4% flaps performed were breast flaps, and the remainder were upper/lower extremity and head/neck flaps.

CONCLUSION: With focused faculty and trainee recruitment, this institution has built the largest clinically productive academic microsurgical program in the country. Collaboration among faculty, staff and residents, all contribute to continual learning, innovation, and quality patient care. This established framework offers a workable and reproducible model in any metropolitan area within the US.

44.

NATURAL BERRY EXTRACTS AS A TREATMENT FOR HEMANGIOMAS

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PURPOSE: Current therapies for infantile hemangiomas (IH) have high risk side effect profiles. A proprietary blend of natural berry extracts (NBE) was studied as a possible alternative. Using a validated murine model we have shown that tumor forming endothelial (EOMA) cells escape cell death through induction of multidrug resistance protein 1 (MRP1) to efflux oxidized glutathione out of the nucleus. We sought to determine whether NBE could inhibit MRP1 to induce EOMA cell death and promote tumor involution.

METHODS: Calcein exclusion was used to measure MRP1 activity in NBE treated (50 µg/ml) EOMA cells. Oxidized and reduced glutathione were measured in subcellular fractions of NBE treated EOMA cells. NBE induced EOMA cell death was measured in vitro and in vivo using immunocytochemistry for activated Bax, Caspase 9 and cleaved Caspase 3. Mice were given a subcutaneous injection of NBE treated EOMA cells (5 x 10^6 cell/100 ul) to examine effects on tumor growth in vivo.

RESULTS: NBE treatment significantly inhibited MRP1 activity and nuclear localization. This resulted in accumulation of oxidized glutathione in the nucleus with activation of the intrinsic apoptotic pathway as shown by significantly elevated Bax, Caspase 9 and cleaved Caspase 3. Mice injected with NBE treated EOMA cells developed smaller tumors in vivo with increased intrinsic apoptosis.

CONCLUSION: This is the first report that NBE inhibits MRP1 resulting in decreased tumor size. MRP1 is over-expressed in many different types of tumors. Thus, NBE may have applications for treatment of IH and many other tumors.

45.

ANALYZING THE CORRELATION OF FIVE INDICATIONS TO THE REGENERATIVE EFFECTIVENESS OF EXPANDED SKIN

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PURPOSE: Skin expansion is a commonly used method for harvesting extra skin tissue for reconstruction. However, the outcome of skin expansion can be unpredictable. Therefore, our goal is to develop a scoring system that can predict the regenerative capacity of expanded skin.