Business Plan

Emergency General Surgery Service Line for an Integrative Healthcare System Proposal

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Project Summary

In 2005, an American College of Emergency Surgery survey found nearly 75% of emergency departments identify inadequate on-call specialty coverage. In 2006, The Institute for Organization Management stated the future of emergency care confirms a shortage of on-call specialists.

Emergency General Surgery (EGS) was defined by the American Association for the Surgery of Trauma in 2013 as "any patient, inpatient or emergency department, requiring an emergency surgical evaluation for diseases within the realm of general surgery as defined by the America Board of Surgery." This classification consists of a large number of different conditions, ranging from abdominal wall hernias to ischemic bowel and excludes presentations due to trauma. Over two million EGS patients will present in the United States each year. [1]

As general surgeons become more focused on a specific skill, like advanced laparoscopic surgery, bariatric surgery, endovascular surgery, breast surgery, colorectal surgery, etc., with this concentration results in less interest in taking emergency call which interferes with elective cases and office practice. This concentration on specific cases diminishes experience and skills in treating bowel obstructions, gunshot wounds, etc.

[1] Shafi S, Aboutanos MB, Agarwal S Jr, etal; AAST Committee on Severity Assessment and Patient Outcomes. Emergency general surgery: definition and estimated burden of disease. J Trauma Acute Care Surg. 2013;74:1092-1097

Executive Summary

The Healthcare System

The Healthcare System has rapidly grown over the last 8 years. A large multispecialty group with 130 sites covering 6 counties, across three states was formed from many acquisitions and organic growth. The organization has 620 providers and over 1,850 associates. The healthcare organization currently serves well over 338,000 within the communities that span over 582 square miles.

In addition to clinical responsibilities, the EGS service line has a strong dedication to education and process improvement. EGS will participate in the development of evidence-based management guidelines to care for our patients. EGS team will train resident physicians, medical students and physician assistants. The team would also educate patients and their families about emergency surgery is an important part of the mission. The surgeons, nurse practitioners and residents carefully explain the disease state, review treatment options with patients and families, set expectations and explain outcomes, while placing an emphasis on alleviating distress.

An EGS Department will provide general surgeons with an elective practice to consolidate care so the performance improvement standards can be implemented, it will improve patient outcomes and there is a systematic approach to quality improvement.

Capital Requirement

The EGS service line will not be seeking funding and will not be submitting a capital request.

Mission

The primary mission of the Emergency General Surgery service line is to provide timely assessment and operative management of the patient with an acute surgical problem in the hospital and in the Emergency Department. The mission is accomplished by a dedicated group of surgeons who concentrate on the care of the patient. This service line will be in place from 7am-5pm. The department strive to help decrease variability in care, diminish cost of care and we work to improve outcomes.

Our Patients

Patients who arrived at the hospital with acute general surgery issues ranging from appendicitis, cholecystitis, diverticulitis and hernias, to major skin infections such as necrotizing of soft tissue infection, gastrointestinal perforation, ischemia, obstruction, hemorrhage, severe or necrotizing pancreatitis and other intra-abdominal emergencies. There is a need to care for difficult and complex cases from surrounding communities that require a higher level of care. Even if the organization's surgeons did not perform surgery, EGS surgeon will help to coordinate recovery from illness.

EGS patients represent a unique group of acutely ill surgical patients at high risk for complications and death. Patients benefit significantly in the EGS model. EGS allows for:

- Earlier surgical evaluation
- Earlier surgical intervention
- Earlier recovery
- Earlier return home
- Fewer patients develop complications

Recent studies have shown that EGS Patients are at higher risk for medical errors and complications following surgery, with EGS patients up to eight times more likely to die compared to patients undergoing the same procedure electively.[2] Approximately half of all patients undergoing EGS will have a post-operative complication.[3] Patient experience is at the center of the Healthcare System.

At least three surgeons currently employed by the Healthcare System have self-identified as being highly interested in the delivery of EGS services.

EGS surgeons will work in the hospital setting, only having an office once a week for post-operative exams. The EGS surgeons will not have a private practice, nor do elective cases. This

[2] Kwan TL, Lai F, Lam CM et al Population-based information on emergency colorectal surgeryand evaluation on effect operative volume on mortality. World J. Surg. 2008; 32: 2077-82.

[3] Kassin MT, Owen RM, Perez SD et al Risk factors for 30-day hospital readmission among general surgery patient. J. Am. Coll. Surg. 2012; 215: 322-30

service line will provide quick, often instant care for the systems inpatient population. EGS will allow surgeons at home to know their patients can be seen for urgent or emergent issues.

The development of this service line will include recruiting two Board Certified Surgeon and a Nurse Practitioner. The sponsoring multi-disciplinary physician group allows for a direct referral source from over 470 providers as well as numerous care providers outside of this organization's system.

The EGS service line will be managed by a Medical Director who is currently a Board Certified Surgeon and has a Sub-Specialty in Surgical Critical Care, with the support of an Administrative Coordinator. The surgeons and mid-level providers will rotate to provide a 4-hour office day once a week to see their post-operative patients, followed by one medical assistant which will be provided by the current, established general surgery practice.

Management

While the department will be managed by the Medical Director, the reporting structure will run through the Surgical Division Operations Leadership team; next level-up for the EGS Service Line would be the Surgical Division Section Manager and Surgical Division Physician Section Manager and finally with the Assistant Vice President of Operations at the top of the reporting structure. Existing administrative leadership was preferred based on an experienced, comprehensive understanding of business operations and fiscal management. The sponsoring organization utilizes a dyad leadership model that couples each level of administrative leadership with a clinical lead allowing the organization to leverage the strengths of business management while receiving clinical feedback from the physician leader in the dyad partnership. This balanced approach has proven to be successful in the larger hospital-based organization.

Organizational Plan

Currently, the supporting Healthcare System structure already has a very strong surgical group that span across 6 counties. The general surgery group consists of sixteen surgeons and two physician assistants. The EGS service line would be treated as an independent operating unit, with its own quality metrics, workflow and financial goals. The leadership will be individualized per department, with the section manager and higher levels of administration sharing the responsibility for managing this department within the surgical division.

SWOT Analysis

A SWOT analysis of this new line of service has been performed and a representation of the analysis is presented below. The goal being to provide high-quality care and improves the patient experience, while improving the overall health of the patient and aligns with the organizations mission to become the healthiest community in America.

	STRENGTHS	
Implementation with in a highly successful existing Surgery Specialty Division	Current Market Share	Healthcare System support EGS service line
	WEAKNESSES	
Concern from several of the general surgeons within the group concerned that giving up daytime call, could lead to less business for their private practice	New Providers insurance credentialing takes anywhere from 30-250 days	Trauma surgery is a small sub-specialty which is challenging for recruitment of trained individuals
	OPPORTUNITES	
Increasing Emergency/Urgent Care for the community	Improving Patient Care Outcomes	Increased referrals from both internal and external sources
	THREATS	
Lack of buy in from all department general surgeons	Existing competitor healthcare system has a level 5 trauma center, 12 miles from our healthcare system	Not having a dedicated fully staffed operating room5 days a week

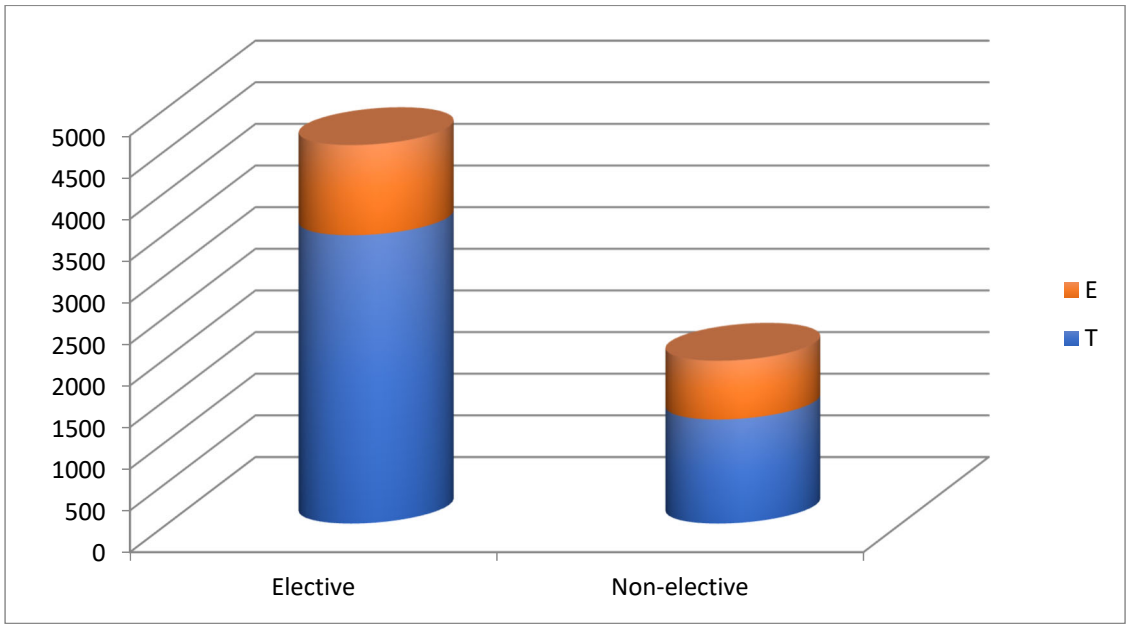
Strategic Relations/Key Stakeholders

There will not be an initial formal strategic relationship associated beyond those required to operate the department within the sponsoring organization. Strategic relationships with other entities will be considered in the future to better the overall health of the community in which this system serves. Key stakeholders in this project are defined as the patients in the community, health care providers in the system, hospital-based service departments, third party vendors, like insurance companies and employees.

Service Volume

Potential service volume was estimated by a case review of the 16 general surgeons working during the time period of January 1, 2018 through December 31, 2018. Since the case numbers were gathered, two surgeons have left the group. In addition, two surgeons plan to leave the group during the year of 2019. All 16 surgeons performed a total of 7,616 cases. Of this total, 2,344 were "non-elective" cases. "Elective" cases numbered 5,272.

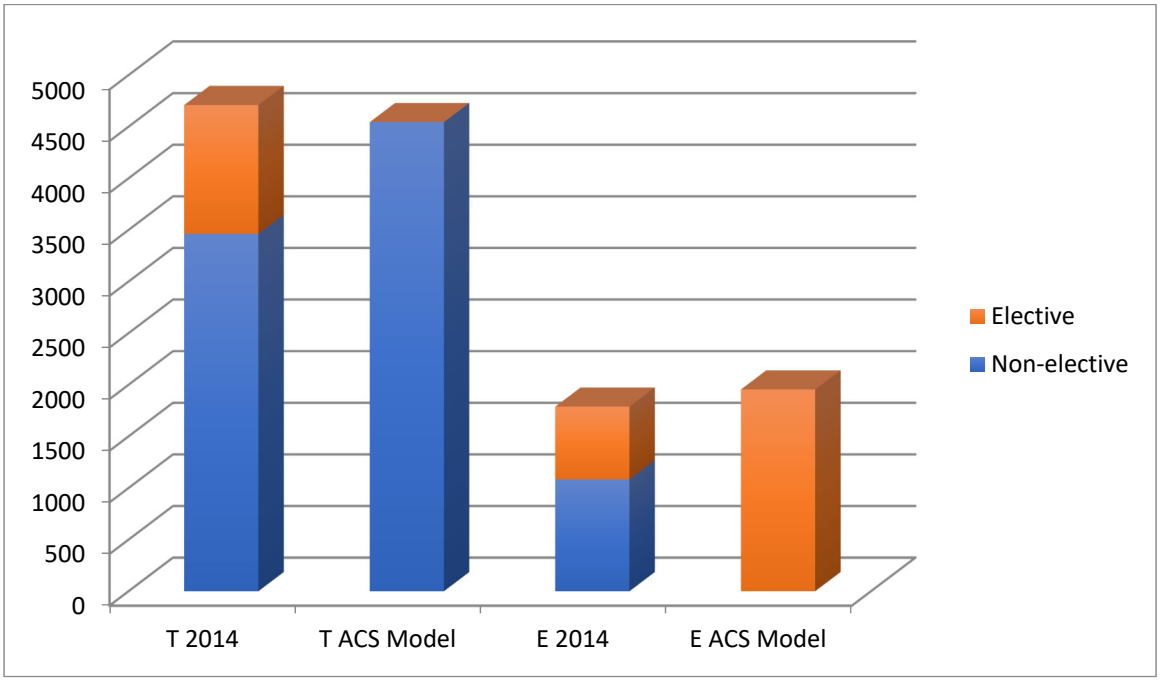
Those surgeons desiring to move to a purely elective practice were identified and their numbers were analyzed. These will be referred to as "T". Surgeons wishing to move to an EGS model were similarly analyzed. These will be referred to as "E". Total elective cases numbered 4,544. Non-elective cases measured 1,954.



Group T performed a total of 4,710 cases; of these cases, non-elective cases were numbered at 1,249. Group T elective cases, plus the elective volume from Group E was calculated. This

resulted in a total potential elective case number of 4,544. This was a net loss of 3.5% of cases. This does not however, take into account that an additional 728 cases were done electively by those surgeons who either left or were leaving.

Group E performed 1,788 cases. The volume of non-elective cases was 705. Group E non-elective cases plus the non-elective volume from Group T was calculated. This resulted in a potential non-elective volume of 1,954. This is net gain of 166 cases or 9.2% of prior volume. This does not take into account that 390 cases were done non-electively by those surgeons who had left or were leaving.



While it is clear that Group T will lose cases, review of literature from other institutions reveals that both groups will ultimately benefit.

Agreement was reached that all new Emergency Department consults for urgent and emergent general surgical issues should be considered as part of the service volume for EGS. In addition, any new direct admits for urgent and emergent general surgical issues from primary care physician's offices or any new inpatient consults for urgent and emergent general surgery issues from primary care or consultants would be considered as part of the service volume for EGS. Examples of disease states that would be included in this group would be appendicitis, cholecystitis, skin and soft tissue infections, acute abdomen, bowel obstructions or perforations and other.

Surgical complications from a recent elective operation by a non-EGS surgeon (within 90 days) should be discussed with the operating surgeon or team. The primary surgeon should handle an anastomotic leak after colectomy for colon cancer. This is best for continuity of care and is best for overall patient satisfaction in the event of a complication. Patients with non-urgent problems that require complex, non-urgent surgical management such as colon cancers, breast cancers, etc., should be ideally handled by the General Surgeons.

It is important to anticipate an increased need for additional services performed by other personnel once EGS becomes available. For example, implementation of EGS may result in an increased number of minor procedures such as lines, chest tubes, bedside percutaneous tracheostomy and bedside wound VAC changes. For this reason, one of the service line goals would be to have all physicians be ACLS certified and able to do conscious sedation.

Timeline

Since this is a dramatic change in the practice of surgery for not only several surgeons but also for the hospital system, all general surgeons in conjunction with the healthcare systems leadership determined that a "phased roll-out" would be best to implement the EGS service line.

The initial daily work schedule for the EGS team would be as follows:

7 AM to 5 PM - coverage of non-elective cases by EGS

5 PM to 7 AM - traditional call schedule coverage

It is anticipated that there would be enough volume for two EGS surgeons per week.

This initial phase allows surgeons from the elective team to pursue daytime duties without interruption. The 5 PM cutoff allows EGS to finish cases and consults that are received later in the day without accruing more emergent cases in the evening. Call coverage by elective team general surgeons would allow non-emergent cases to be handed off to EGS the next day. For example, a stable abscess can be posted to the EGS room for the next day. Emergent cases would need to be covered by the on-call physician in the traditional manner with appropriate triage. For example, patients with free air or patients who are bleeding will need care provided by the on-call surgeon. These patients can largely be distributed to EGS for post-op care.

It is therefore essential that the collaboration between the EGS team and the hospital include the implementation of a dedicated EGS operating room at the time this phase is started. This is paramount to the success of an EGS service line and must be available five days a week starting at 7:00am. This room cannot be booked for elective outpatient cases. Other surgical services seeking to use the EGS room should be required to call the EGS that day and clear the use of the room first.

Future staged work schedule for EGS alone would include the following options to fit needs that are identified as the program evolves:

- 24-hour coverage of one of the three hospital campus' by EGS for non-elective cases
- General surgeon's transition to call coverage for their elective patients
- By this stage, it is anticipated that there will be a need for three EGS Surgeons and three Nurse Practitioners

Plan of Evaluation

Any proposed change in a business model necessitates a plan to evaluate the effectiveness of the promised product in light of the changes to the system. The EGS plans for an ongoing plan of evaluation similar to processes used for years in the field of trauma surgery.

The first step is establishing a patient registry. This will require personnel who can gather patient identifiers and input data into a registry. This data will be used for quality improvement and to ensure that the model is delivering promised changes in patient care.

With the advent of phase one of the EGS service line, the healthcare systems general surgeons desire to begin implementation of a tracking system. This will function as a QI system and will be analyzed periodically.

QI measures that should be tracked on an ongoing basis include the following:

- Daily census of the service
- Daily new consults to the EGS service
- Time of consult
- Time when consult was seen
- The service consulting EGS

- Admission date and time
- Operating room date and time
- Discharge date and time

Specific disease state parameters should include the following:

- Reason for consult
- Post-operative diagnosis
- Operative procedure
- Surgeon performing procedure
- Post-operative complications (wound infections, DVT/PE, MI)

Patient satisfaction parameters should be tracked as well and should include:

- The current metrics that are tracked
- Perception of time to OR

Provider satisfaction of all surgeons (general surgeons and EGS surgeons) should be measured using a standard provider satisfaction survey used by the institution.

Finally, timed with the initiation of phase one, the EGS team in conjunction with the general surgery team, will begin to identify common EGS issues and create standardized protocols to facilitate improvement of care. The development of protocols for care will help improve patient care in a multitude of ways, including through the natural transition from one team to another and through the hand-offs inherent in providing care via a team approach.

Operational Plan

Implementation of service lines must be decided by the organizations Executive AVP, (Assistant Vice President), Council. The makeup of this group consists of both the Administrative and Physician AVP's for the surgical division, medical specialty division and primary care divisions of the supporting organization. Once a decision is made, the business plan would be delivered for final approval to the Chief Operating Officer, Chief Financial Officer, and the Chief Executive Officer. The COO and CEO have heard the resounding need for this service line within the Healthcare System and have committed their support in the presentation of this proposal. Other departments that would be impacted by the approval of this additional department would include, Facilities, Purchasing, Human Resources, Training & Development, Operations, Quality

Compliance & Legal Services Team, and the Central Billing/Revenue Cycle Department. Below is an organizational chart for this proposed department.

Organizational Chart
Chief Executive Officer
Chief Operating Officer
Chief Financial Officer
Assistant Vice President of Surgical Operations
Physician Assistant Vice President of Surgical Operations
Section Manager Surgery Division
Physician Section Manager Surgery Division
EGS Medical Director
EGS Coordinator

As with any new service line or physician/provider onboarding, potential temporary roadblocks would include a delay in providing services based on lengthy credentialing processes with each insurance payor. Although the process is initiated the day the provider's signed contract is returned, the turnaround time can vary from 30 days to currently up to 250 days depending on credentialing various payors.

Implementation of this service line is targeted for the third quarter of 2020. For this plan to come to fruition, many actions would need to occur before March 2020. The business plan would need to be presented and achieve approval. The healthcare organization would need to commit to one fully staffed and equipped Operating Room, Monday through Friday for the hours of 7am-5pm. Support departments throughout the supporting healthcare organization would systematically be notified to begin credentialing and recruitment processes immediately for providers and in January 2020 for an EGS Coordinator. This would help to set the tone of the organization's culture, routine policies and orient the Coordinator to the Surgical Division.

Marketing Plan

Locally the supporting organization has an incredible presence in the inpatient-service area. This building is currently located on the main campus of the supporting organizations centrally located hospital main campus. There will be no additional signage needed to have the EGS department added to directional signs and building marquees. The health systems social media accounts currently reach over 55,000 followers which would lend to a quick and efficient notification to a large portion of the local community with minimal effort and investment. The system hosts several health care provider education/networking sessions quarterly, as well as numerous sponsored community events (Hernia, Breast Cancer Awareness, Colorectal Cancer Awareness for example), where the announcement of this new service line would be applicable as well as gain visibility. A marketing brochure will be created to be distributed all patients who were cared for by the EGS Providers. These brochures will be stocked in each nurse's station in the main hospital in the Healthcare System.

Financial Plan

The University of Missouri Hospital Columbia on the impact of Acute Care Surgery to Departmental Productivity stated their total annual wRVUs rose 8% for their general surgeons. [4]

- Total annual wRVUs rose 8%
- 14% increase in monthly operative wRVUs
- 15% decrease in E&M services
- Job Satisfaction increased by 5%
- Overall operative volume decreased by 9%

Budget

Anticipated budgetary points include the following:

- Physician salary support
- Increase in available operating room nursing personnel
- Increase in contracted number of anesthesia personnel
- Cost of an additional five half-days a week of operating room use
- Support for personnel to gather QI metrics as noted above

This will be offset by:

- Decreased length of stay
- Decreased use of on-call personnel
- Decreased use of tangible items during those diminished length of stay days
- Diminished operating room delays
- Streamlining use of office time for EGS team members

A breakdown of operating expense is below in the following table:

Staff Salaries	$29,408
Staff PTO Expense	$1,792
Staff Bonuses	$600
Total Staff Salaries	**$31,800**
Staff Benefits (Including Payroll Taxes)	$1,032
Staff Dues and Licenses	$50
Total Staff Benefits	**$1,082**

[4] Impact of Acute Care Surgery to Departmental Productivity .Journal of Trauma-Injury Infection & Critical Care: October 2011-Volume 71-Issue 4 – pp 1027-1034

Total Staff costs	**$32,882**
Administrative Supplies	$200
Housekeeping Supplies	$50
Consumables- Software	$500
Total Supplies Cost	**$750**
Rent	$19,322
Insurance	$7,800
Janitorial Services	$800
Building Maintenance (interior/exterior)	$50
Pest Control	$75
Total Occupancy Cost	**$28,047**
Administrative Overhead & Purchased Svc.	$32,250
Total Other General and Admin	**$32,250**
Depreciation of Medical Equipment	$650
Depreciation of Office Equipment	$200
Total Depreciation	**$850**
Total Operating Expenses	**$94,779**

Projected Cash Flow Statement

Projected Cash Flow - Budget	
Gross Charges-Physicians &APP	$1,760,845
Total Deductions- Contractual, Charity, Bad Debt	$644,000
Total Operating Revenue	$1,116,845
Operating Expense	$94,779
Total Net Income	$1,022,066

Three-Year Income Projection

Three Year Income Projection -Profit/Loss	Year 1	Year 2	Year 3
Information prorated by start date(s)			
Total Gross Patient Revenue	**$1,760,845**	**$2,424,975**	**$2,870,455**
Contractual Deductions	$578,480	$832,247	$965,469
Charity	$12,300	$13,580	$15,910
Bad Debt	$53,220	$43,342	59,250
Total Deductions & Discounts	**$644,000**	**$889,169**	**$1,040,629**
Total Operating Revenue:	**$1,116,845**	**$1,535,806**	**$1,829,826**
Provider Salaries including a 10% value-based incentive bonus projections	$711,000	$1,111,000	$1,204,500
Staff Salaries	$31,800	$32,595	$33,573
Total Benefits Provider and Staff	$129,012	$202,387	$213,363
Purchased Services	$32,250	$33,218	$34,214
Supplies	$250	$300	$350
Rent including insurance	$19,322	$19,900	$20,497
Malpractice insurance	$5,880	$5,880	$5,880
Maintenance/Janitorial, etc.	$925	$1,015	$1,115
Depreciation/Amortization	$850	$767	$680
Total Operating Expenses	**$931,289**	$1,407,062	**$1,514,172**
Income (Loss) from Operations	**$1,116,845**	**$1,534,806**	**$1,829,826**
Net Income (Loss)	**$185,556**	**$128,744**	**$315,654**

Conclusion

The mission of the supporting organization is dedicated to working together with our patients, communities, and colleagues to provide high quality, integrated and patient-centered care. Development of an EGS service line is the first step in improving the quality of care offered to our patients. Using this platform as a stepping-stone, the systems general surgeons anticipate that creating a dedicated team for the acutely ill in-hospital patient would allow for the future delivery of advanced surgical services. It is anticipated that future needs will be revealed in the arena of surgical critical care. The systems general surgeons who wish to perform solely elective cases will be freed to perform more complex surgeries that require advanced monitoring. The EGS team can be extended to provide surgical critical care services at that time. In addition, delivery of complete surgical services to the population that we serve can be further extended to include care of the injured patient.