Developing Academic Cardiovascular and Thoracic Surgeons in Emergent Centers: Joy and Art of Leadership

Editorial

Mahatma Gandhi propounded the seven deadly sins to be wealth without work, pleasure without conscience, knowledge without character, commerce without morality, science without humanity, worship without sacrifice, and politics without principle. Without intending to disgrace or to trivialize this noble list, I would add an eighth: medicine without teamwork and to be precisely treating a cardiac patient without teamwork.

Fifteen years ago, a symposium, associated with and supported by the American Association for Thoracic Surgery (AATS). "Developing the Academic Cardio-thoracic Surgeons". It was presented on April 20, 2000, at the 80th Annual Meeting of AATS, Toronto, Ontario, Canada and published in the Supplement of the Journal of Thoracic and Cardiovascular Surgery on April 2001 issue [1]. Since that time I was trying to emphasize on that topic. Achieving the position of HOD (head of department) of a cardiovascular and thoracic surgery (CTS) training program in Egypt is like many things in life-both a tremendous honor and a demanding responsibility. Since then, three main changes can be noticed; namely; the title of the department (from cardiothoracic to cardiovascular and thoracic surgery in spite of keeping the same acronym CTS) and the contributions of new subspecialties like interventional cardiology, TAVI, TEVAR, hybrid techniques, interventional bronchology and endoluminal esophageology. Thirdly, simulation programs have been super added.

Academia is always in a state of flux. What seems like a solid foundation or set of rules for engagement in one era can rather rapidly change. When you pursue a position of any of the 6 styles of leadership (visionary; coaching style; affiliative; democratic; pacesetting; and commanding) within an academic medical center, you have to deal with at least four major concerns during the interview and after you arrive at your new institution. How are you going to make a contribution in the four major areas of academic responsibility

  a. Clinical care,

  b. Education, and

  c. Research?

  d. Administration to run an important, revenue-dependent department such as CTS? To do so, you have to be able to objectively assess the SWOT (strengths, weaknesses, opportunities, and threats) related to each of these issues.

Clinical Care

Confucius, 450 BC said: "Tell me.....and i will forget, show me..... and i may remember, involve me.....and i will understand". i can simply say "practice makes perfect". To establish leadership within an academic medical center, a surgeon must first establish his or her quality as a surgeon. In bygone eras you might be an effective academic leader without a credible reputation as a surgeon, but such credentials are less likely to be successful in the current competitive clinical marketplace.

The Egyptian surgical specialty health care system has championed a decentralized approach to patient care. In addition, local hospitals are looking for ways to fill inpatient beds, and interventional cardiology programs want in-house surgical backup for their elective interventional procedures. We have trained excellent surgeons and sent them into the community. Our products or trainees fulfilled the 7P's (product, price, place, promotion, physical evidence, process, and people). Such community medical centers then demand not only secondary surgical services but also tertiary and in some cases even quaternary services. Such local expansion of complex surgical services usually comes at the expense of the original academic medical center.

What if principle? Despite rigorous medical education and training, are medical students, residents, and physicians equipped to handle all the situations they may face? Over the course of our careers as practicing physicians, administrators, and educators, we've encountered a remarkable number of scenarios not covered by formal medical education and training. Some are common and others are unusual. Some are life-threatening with near misses or misses and others aren't. However, all are important and potentially challenging. Whenever these scenarios occur, people usually assume that you can and will handle them-just because you are or will be a physician!

CTS training can benefit greatly from simulation considering the high risks and broad range of open, minimally invasive, and endovascular techniques that trainees are expected to learn. Moreover, as the incidence of cardiovascular and thoracic

Ezzeldin A Mostafa*

Professor of Cardiovascular & Thoracic Surgery, Ain Shams University Hospitals, Egypt

*Corresponding author: Ezzeldin A Mostafa, Professor of Cardiovascular & Thoracic Surgery, Ain Shams University Hospital Cairo, Egypt Tel: (+202) 2 685 2806; Fax: (+202) 2 682 0970; Email: ezzeldinmostafa@ymail.com

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disease grows, the CT surgical workforce is projected to decline by 50% over the next 10 years, creating a tremendous demand for well-trained CT surgeons. Simulation may help by increasing learning opportunities for residents, eliminating costs of cadaver and animal use, decreasing the use of operating room (OR) time at teaching institutions, and integrating new technologies into patient care more smoothly. Simulation also may lay the foundations for uniform certification and assessment standards for graduating CT fellows. The 2007 VSC and the establishment of the Thoracic Surgery Directors Association Boot Camp in 2008 have been important recent events to spur advancement of CT surgery simulation. In addition, the Joint Council for Thoracic Surgery Education is currently developing a simulation curriculum with specified modules and assessment tools specific for training programs.

Three broad categories of surgical simulators include the simple bench model (SBM), virtual reality simulator (VRS), and human performance simulator (HPS). Discussions at the VSC identified several areas in need of simulation, including cardiopulmonary bypass (CPB), coronary artery bypass (CAB), VATS, open lobectomy, and endovascular procedures.

The simulation programs had become an integral part of the residency training experience. Throughout the years of training, fundamentals of cardiac and thoracic surgery are taught in a simulated environment. Training in specific procedures are also taught and practiced in a deliberate and distributed method. The level of complexity of the procedures increases as the resident's level of experience advances accordingly.

They are aiming at:

a) To determine the practical and logistical considerations using the various cardiac and thoracic simulation models;

b) To investigate competency assessment utilizing direct observation and video clips of simulation performance evaluated by live and independent educators.

c) To investigate the use of "deliberate practice" with simulation as a means of more efficiently teaching proficiency in cardiac and thoracic technical skills; and

d) To develop new innovations in CTS simulation in an effort to facilitate and further teaching methodologies.

All of these studies have shown evidence for the unmistakable value of simulation in CT surgery training; however, most educators also agree that there are important limitations to simulation-based training. As medical understanding advances and new techniques are developed, original models may become outdated and require costly upgrades or complete replacement. Also, simulation may never mimic the feel of living human tissue, the complexity of human physiology, or all the psychosocial nuances of real patient care. Thus, simulation is not meant to eliminate the need for genuine patient interaction and real OR experience, but to serve as an important adjunct for safer transition to independent patient care and continued practice.

Education

All of life is problem-solving (Sir K.R. Popper). "Good leaders are good readers." I can bravely say> "Good readers are good leadres"

We've all heard this phrase, and we know that highly successful people invest in their education. They read for inspiration, for information, for motivation and for examples. We also know that most people read very little, and it shows in their lives. One of the best things you can do is spend just 15 minutes a day reading a positive, educational book to enrich your life, and yet most people never do. I urge you to buy and read! Think about your values, learn how other people organize their time and create the life of their dreams. There are no "secrets," just models and choices that make all the difference.

Teaching CTS in the year 2016 not getting easier. Most of our training programs last 5 years, and most of our residents going in practice perform both general thoracic and adult cardiac surgical procedures. Often the first year of CTS training is dominated by attempts to prepare and pass the MD examinations. The volume of bread-and-butter index operations for a training program may be decreasing. The case mix often reveals an increasing complexity of disorders among patients denied care in the community.

In addition, new technology has introduced substantial challenges due to the marketplace demands of off-pump revascularization (OPCAB) and minimally invasive incisions. The knowledge base continues to increase. Surgeon in training need clinical experience in the non-surgical components of cardiothoracic education-cardiothoracic anesthesia, cardiac catheterization, echocardiography, pulmonary medicine, and oncology. The opportunities to introduce new techniques and tools in surgical education are expanding with the introduction of concepts such as surgical simulation, robotics, an internet-based learning. Developing methods to determine competency

How to unleash your unlimited potential and develop a super memory? *An amazing thing, the human brain, is capable of understanding incredibly complex and intricate concepts yet at times unable to recognize the obvious and simple. Therefore, try to use the KISS principle. Keep it Simple and Stupid.* With this goal planner, the blueprint of success, you can unlock your true potential to awaken the true power of your brain. The KISS or the simpleology is the express track or goal planner to improve memory, reading all these topics, and super intelligence.

An idiom and a mnemonic should be recalled for how to use the book. As regards the idiom "A picture is worth one thousand words". As for the mnemonic: *Nobody Can Give Money to ATM* (Automatic Teller Machine)*; where *Nobody:* Names, Numbers and Mnemonic (silent m); *Can:* Charts; *Give:* Guidelines; *Money:* Management; *To:* Tables; and *ATM:* Algorithms, Tables, and Management protocols (MIS); Medical, Interventional, and Surgical.

Research

The ancient writer tells us in Proverbs that *"Without a vision, the people perish."* And Thoreau told us that *"The mass of men lead lives of quiet desperation."* No doubt because the masses are without a vision for their lives.

What is your strategic vision for your future, your ideal life? Is it written down? Do you review it and think about it often? Have you "enthroned" it in your heart? Is your life organized around goals and objectives that will ensure your vision is reached? "If

one advances confidently in the direction of his dreams, and endeavors to live the life which he has imagined, he will meet with a success unexpected in common hours." And that's worth thinking about. Have a visionary leadership: Inspire. Believe in own vision. Empathetic. Explain how and why people's efforts contribute to the 'dream'. Move people towards shared dreams. Have an impact of the style on the (department) climate. Do not resist change, when changes require a new vision or when a clear direction is needed. Change Radically.

The era of surgical descriptive physiology is rapidly disappearing. Although more research Egyptian pounds are available for translational research than ever before, multidisciplinary research must be described, mechanistic biology must be emphasized, and a successful record in publication must be demonstrated to obtain funding at the national level. In many ways, funding is more accessible for those who understand funding principles, who have done preliminary foundation research, and who can write a comprehensible grant proposal. The surgical competition is not as vigorous as it was in earlier eras.

The Redcap system has championed a decentralized approach to infographics and biostatistics of patient care.

Remember the 8th sin: The trick, of course, is finding a supportive environment, developing appropriate, respectful multidisciplinary interactions with basic scientists, asking the right questions, and making research a priority in an environment where clinical activity can always be viewed as a logical and appropriate excuse. Other areas for clinical research are outcomes research and clinical trials, but once again, meaningful clinical research requires priority and resources.

Administration

Most of us received little or no formal administrative training during our residencies or in our junior faculty roles. Running a department of CTS requires us to play different administrative roles concomitantly, such as department or medical center administrator.

Training is needed to understand the complex health care marketplace in periods of rapid evolution (managed care) and to understand the essential components of leadership. National and international courses are available to help with the essentials of these issues. The local administrative resources within the institution are essential to both short- and long-term success as a department chief. A standardized checklist include the following: (a) strength of advocate mentors; (b) strategies to overcome stereotyping and role modeling; (c) practice makes perfect; (d) do your homework; (e) interview skills; (f) assessment skills; (g) negotiating skills; (h) understand personal strengths; (i) strategic vision; (j) operational systems; and (k) respect your family's needs.

What are the stages of team development? The Tuck man stages of team development can be used for identifying factors that are critical for building and developing small groups. Tuckman's stages of team development model seeks to explain how a team develops over time. The five stages of development are: forming, storming, norming, performing, and adjourning. The adjourning stage was added later in 1977. According to Tuckman, all of the phases are necessary and inevitable - in order for the team to grow, to face up to challenges, to tackle problems, to find solutions, to plan work, and to deliver results.

Random thoughts, It is important to not under estimate the following concepts:

i. The need for a clinical profile (you will find few strong department chiefs who cannot operate),

ii. The magnitude of the responsibility for education,

iii. The difficulty in establishing an academic niche in the current marketplace,

iv. The importance of developing administrative skills, and

v. leadership.

Remember the 8th sin: Your success will be measured by the accomplishments of your team, not your personal accomplishments. You must take care of the people who rank below you in the institutional hierarchy and not to worry a great deal about those who rank higher. If you do your job, your boss will know. You have to assume the people who work for you are capable and competent, and you have to delegate responsibility early and often. Most times your team members will respond if they believe in the vision and respect your operational system. Keys to success include being fair, consistent, and honest. When you accept the position, you become responsible for a new extended family. Be careful what you wish for. The hospital or health management information system (HMIS) has championed a decentralized approach to all departments and other specialties caring about patients

Finally, errors in healthcare are not random events. They are rooted in systemic causes which are deeply embedded in the architecture of healthcare organizations and are amenable to change. The totality of these individual, team-related, and organizational factors that influence our decisions and actions are called "the human factors." The human factors are decisive for the outcome of complex socio-technical systems, such as healthcare.

To my students: You will remember some of what you hear, much of what you see, and almost all of what you experience and understand fully. 'Happiness comes when you believe in what you are doing, know what you are doing, and love what you are doing'.

Abbreviations: SBM: Simple Bench Model; VRS: Virtual Reality Simulator; HPS: Human Performance Simulator; CPB: Cardiopulmonary Bypass; CAB: Coronary Artery Bypass; HMIS: Health Management Information System

References

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