

The impact of Covid-19 on Head and Neck Surgery, Education and training

Jatin P. Shah¹

¹Memorial Sloan Kettering Cancer Center, New York, NY. 10065

April 28, 2020

The year 2020 began quietly, except for the news of a novel virus outbreak, felt to be a local problem in Wuhan, China. In the United States, economy was booming and the world had great expectations of a wonderful 2020., What followed has stunned the world with a ‘never seen before’, calamity, the Covid-19 Pandemic, , with over one and a quarter million individuals infected, and over 70000 lives lost so far.. The havoc created by this global tragedy has impacted upon many lives in many ways. We need to quickly think and to plan, as to how our professional and personal lives will be conducted in the days, weeks, months and years ahead.

At the moment there is total chaos, in every part of the world, particularly in New York city. The day to day life is disrupted, regular patient care of diseases and cancers is in disarray, with the focus of medical care shifted to the management of patients with Covid-19. Surgery is limited to emergencies, and cancer cases that can be, are postponed without a negative impact on their outcome. The Great majority of hospital beds are occupied by Covid-19 patients, and sudden make shift hospitals are created to accommodate the surge. Temporary morgues in refrigerated trucks are to be seen at every local hospital in New York city to ‘house’ the over 4700 patients who have died in the last two weeks. What comes next, and when this will end is unknown; our future, and the future of the world is frightening in its uncertainty.

With a fragile future, how do we conduct our day to day activities, and plan to retain our robust education and training programs, to educate and train the next generation of Head and Neck Surgeons? The major onslaught of the first wave of cases and mortality from those exposed to the disease may slow down in the weeks to come, as observed in China, but life is unlikely to return to normal in the foreseeable future. “Business as usual” will not work, since we do not know the impact of the aftermath of this Pandemic, the risk of a rebound second cycle of splurge in the number of cases worldwide in the fall and winter, and the potential risk of annual outbreaks from Covid-19., We have great expectations from our scientists, that we will find a therapeutic solution for the treatment of Covid-19, and great hopes that a vaccine would be developed in the future to prevent infection. , We have to develop strategies, to modify, devise and reshape our current methods of education and training to sustain a robust training program and continue to support our current work force geared to educate and train succeeding generations of students and trainees. (1) The drastic changes that have affected our work and life during the past two months, has taught us, that remote communications, education, teaching, learning and training is possible, and has to be incorporated in our current systems.

Communications: Human communication for ever has been practiced on a one to one basis with the production of sounds/ verbal speech and the ability to hear and interpret spoken words. Science and technology permitted the transmission of spoken words to be heard at a distance with the introduction of the megaphone. Advancing technology, gave us the Radio to hear people from remote distances, and television gave us the capability to see and hear people ‘live’ from remote distances. The internet and

development of social media made human communications, a ‘norm’ in the current generation. We can now communicate with not one but multiple individuals thru multiple platforms and applications. The development of these technologies in remote communication can easily be applied to remote learning.

Academic Activities: The usual academic activities occupying good part of our working week involves, Lectures, Grand Rounds Tumor Boards, Case conferences, Journal clubs and other similar activities. All of these activities had required, physical presence and an assembly of individuals, but, we have come to realize that nearly all of these activities can be conducted remotely thru the internet. Live video lectures, and Grand Rounds can be easily and effectively delivered thru webex or zoom conferencing where hundreds of people are able to see / hear the speaker live with the ability to interact with two way conversations. Case conferences and tumor boards can be conducted quite effectively on these platforms with screen sharing. The need to be ‘physically present’ is not essential for conducting most academic activities. Even after the passing of the current pandemic, such activities may continue to be conducted on such platforms. This would be convenient and effective, and can offer such activities to an even larger audience. We can imagine a future where every Institution and Academic Center will have an open “on line book”, where every learning activity is available to world..

Remote Learning: With easy access to internet in every part of the world, remote learning has become a way of life in many domains of education and learning. This is vividly demonstrated by a plethora of on line courses available from many Universities around the world. In the specialty of Otolaryngology / General Surgery / and Head and Neck Surgery, even operative surgery is possible to be learnt, by watching expertly demonstrated surgical procedures performed by leading surgeons and surgical educators, on the web sites of the American College of Surgeons (ACS), American Academy of Otolaryngology Head and Neck Surgery, (AAOHNS), the International Federation of Head and Neck Oncologic Societies (IFHNOS) and other similar organizations., Remote learning in all domains of surgical education is feasible and available.

Validation and Certification: Testing and examinations have traditionally required the candidates to report to a designated location, where the examination in paper form is handed to the candidates to be completed in the designated time frame, while a proctor is supervising the candidates. That is no longer necessary. Multiple choice written examinations can be taken securely on line, with defined time limits.. Many Universities and Colleges offer these examinations coordinated and conducted by commercial examination companies such as *Exam Soft*. Offering such examinations on line is less labor intensive, more cost effective, more practical and may attract a larger number of students from remote locations to participate.

Traditionally oral examinations are conducted “in person”, where the candidate and the examiner /s, meet in private and conduct face to face conversation with questions and answers. The purpose of this exercise is to assess the candidates immediate assessment, judgment and knowledge However, with modern technology and two way private video platforms , such an encounter can be effectively conducted remotely. .

Global On Line Fellowship(GOLF): The IFHNOS has taken a lead on developing the first remote learning , on line fellowship program in head and neck surgery and oncology, which has been in existence for the past six years. (2) The Global On Line Fellowship (GOLF) program was introduced in 2014. It is a two year curriculum, with seven written multiple choice on line examinations, a one month of observership and an oral examination. (www.ifhnos.net/global). Nearly 400 candidates have registered from 48 countries during the past six years, and 244 have graduated. *The goal of this program is to improve the knowledge base and judgment of surgeons in their own home environment, without displacing them, within their resources, in their institution or place of practice, and on their own patients.* This program has been very successful and is received enthusiastically in all parts of the world. In the past the oral examinations were conducted on site in various locations in Australasia, Central Asia, Europe and Latin America. Beginning this year, IFHNOS plans to conduct the oral examinations on line, either using Webex , Zoom, or a similar technological platform.

Telemedicine: Medical consultations, conversations and office visits in the private office or in clinics is the mainstay of practice in head and neck surgery, where follow up visits form a large percentage of our office

or clinic volume. With the risk of loco regional failure of up to 40% and the risk of developing multiple primaries approaching 35%, post treatment follow up or surveillance have been emphasized thru decades. This takes a significant amount of investment of time , effort and personnel on the part of the clinician, and an expense, in travel and investment of time away from work and home on the part of the patient. In the past when surgery was the only treatment of mucosal cancers of the head and neck the follow up schedule recommended was very laborious. The common practice was once a month the first year, every other month the second year, every three months the third year, every four months the fourth year, and every six months thereafter. After discovery of a second primary or a recurrence patients were put back on the same schedule. In head and neck surgery the stringent follow up schedule was designed on the basis that nearly 80% of the patients who were to recur, would have recurred in the first 24 months, with a median time to recurrence of 9 months. However, with the combination of surgery and radiotherapy, the loco regional recurrence rates declined significantly, and the median time to recurrence was also prolonged. Thus the need to see the patients every month in the first year, or every two months in the second year, became less compelling. Many have argued against such intensive physician /patient personal interactions, and suggested less stringent follow up schedules. Multiple trials of close follow up vs less stringent follow up for similar staged patients have been proposed, but rarely accepted or came to fruition. (3). The absolute benefit of detecting an asymptomatic recurrence or a new primary during routine follow up examination is questioned, compared to the patient who reports for examination when the earliest symptoms develop suggesting a recurrence. Although, there are no randomized trials to compare this, the probability of a major difference in outcome is unlikely. In addition, only a very small number of patients are found to have recurrence or a new primary which is totally asymptomatic during a routine follow up examination. Some institutions and practices have transitioned the follow up care of low risk patients to “survivorship clinics” run by Physician Assistants / Advanced practice providers (APP) or nurse practitioners. This second level of care for low risk patients will reduce the follow up volume for the clinician, but will still not do away with the inconvenience of travel, and investment of time and cost of the service, on the part of the patient.

It is in this arena, that telemedicine will play an important role. Many patients who are at low risk of recurrence can be followed by telemedicine on a video call. If during that call, the care giver finds the need for a close physical examination, the patient may be asked to see his / her primary care physician, closer to home, and a clinical picture, intra oral photograph or a picture of larynx / pharynx done with a fiberoptic laryngoscope can be sent to the head and neck surgeon. Imaging studies can be read and reviewed on line and avoid the need for “physical presence” of patient and surgeon. This practice will require a culture change amongst head and neck surgeons, and their trainees. We will have to train our Residents / Fellows in developing a work ethic of practicing telemedicine.

Physician compensation for remote consultation: . The current methodology of payment is “procedure” based. (CPT). To adequately compensate the specialist for his time, talent, expertise and opinion, a new methodology or codes will need to be developed from current procedural terminology (CPT) to current expertise terminology (CET). An entirely new payment schedule will be required dependent on the extent of consultation; mail review, telephone, video consultation, tumor board , involving multiple physicians will all require redefinition. For many institutions, including our own this already exists for the International patient, and has been high lighted by the current Covid outbreak..

Fellowship Training: The events experienced in the past few weeks has put a significant strain on the practice of medicine in general, and head and neck surgery in particular. They have forced us to think and develop strategies for transition of our current practices in patient care, education and training to innovative solutions, and prioritize the levels of patient care. Only within the past several days numerous guide lines have appeared in all media and means of communications to strategize the optimal use of operating room space and staff. Conduct of safe surgery avoiding exposure to aerosolized viral transmission, and prioritizing patients at high risk of an adverse outcome if surgery is not performed have been put into practice. Routine and elective cancer surgery is being postponed. If the pandemic continues for several months, the current fellows in training will not have the volume of the required surgical cases to gain the experience necessary for completing the fellowship. One solution to address this problem is to extend their fellowship by 3-6 months.

However, this may prove to be impractical due to a variety of reasons. These include, commitments made to incoming fellows who will start their training on July 1st , additional salary support, housing, and the fellows themselves may have made personal or professional commitments for their respective post fellowship careers. We will need to develop ongoing tele education, much as is being done with the IFHNOS GOLF program , with similarly defined goals and expectations to be met before certification Another potential solution is to implement regular operative techniques group discussions with faculty members with video demonstration of surgical techniques highlighting the finer details of operative procedures and the “dos” and “dons” in the operative procedure.

Experiencing the huge impact of the Covid Pandemic on the society and economy of the globe, and the severe strain it has put on the health care systems has been a humbling experience. It has brought the realization, that all medical and surgical training programs, have a component of disaster management.

Surgical manpower: We need a complete reassessment of man power needs, how many surgeons were lost during this Pan endemic? How many more Senior surgeons have elected to take early retirement/ were some lost to Covid? What are the manpower needs for increasing remote evaluation? What new technology is needed ?Current platforms like Zoom , cannot handle the chaos . what are the Privacy issues of remote consultation ?We have many challenges to face, but with challenge comes opportunity.

The challenge created by the Covid-19 Pandemic has brought reality to life and humility in our minds, and has given us the appreciation of the “luxuries and comforts” in which we practiced, taught and trained head and neck surgery. I have shared my thoughts for dealing with these difficult times , and any such future calamity that may come, to keep our education and training programs sustainable by embracing technology and alternative means to teach and train our younger generation.

Acknowledgment: The author appreciates the input from Dr. Murray Brennan, Director of the International Center of Memorial Sloan Kettering Cancer Center, in the preparation of this manuscript.

Full author list: Jatin P. Shah, MD, PhD(Hon), DSc(Hon), FACS, FRCS(Hon), FDSRCS(Hon), FRCSDS(Hon), FRCSI(Hon), FRACS(Hon) Prof. of Surgery, E W Strong Chair in Head and Neck Oncology Memorial Sloan Kettering Cancer Center, New York, NY. 10065. e mail: shahj@mskcc.org

References:

1. Shah JP. Training of a Head and Neck Surgeon. In Head and Neck Surgery by DeSouza C. pp 1514-1526. Jaypee publishers, , India 2009.
2. Shah J,, O’Neil P., and Brennan M. Global On line fellowship. JACS. 2020. (In press)
3. Shah J and Harrison L. Personal communication. (1996)