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OTHERS

Evolution of Indian Units as International Training Centres—the Experience of Plastic Surgery Unit of Ganga Hospital

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Abstract
With improvement of healthcare in India, it is now possible for specialty surgical units to become a destination for teaching and training. From a humble beginning of 5 beds in 1972, Ganga Hospital, a specialty centre for trauma, orthopaedics and plastic surgery has now become 600 beds performing 26,000 surgeries per year. In the process, the Plastic Surgery Unit has attracted 2165 surgeons from 70 countries. Indian surgical units have the benefit of numbers, but numbers alone can not get international visitors. Consistent quality outcomes, good documentation and availability of data, transparency in processes are appreciated by the visitors. It has also been found that in addition to the founder, the units must have number of reputed surgeons in the team to attract visitors because the international visitors also have a choice of place to choose and look for value for time and effort.

Keywords Training · Education · Plastic surgery · Microsurgery · Fellowships

> 'If you would not be forgotten as soon as you are dead, either write something worth reading or do something worth writing' – Benjamin Franklin.

As a surgeon you can leave behind a legacy, by your surgical skills excelling in patient care, by finding solutions to problems and making them available to the masses or in a third way by building an institution which serves as a centre of teaching and training. We can also say that the order in which they are stated is the process of evolution. The third stage can be reached only by crossing the first two. Indian hospitals becoming an international destination for teaching and training is a goal worth pursuing and is attainable. One just needs to study the models that exist, and we do hope that sharing our experience will serve as a beacon for some youngster to create such centres. This is written up in the words of the senior author, but the team has made it happen. Growth of the unit in patient care and becoming a teaching centre goes hand in hand.

Where Do We Stand Today?

Ganga Hospital is a specialty centre primarily for the specialities of trauma, Orthopaedics and Plastic, Hand and Microsurgery. It is at Coimbatore, a Tier 2 city in South India. Coimbatore has a population of 2.8 million. Called as the 'Manchester of South India', for the numerous textile mills, it has now become a hub for quality tertiary medical care and education.

Presently, Ganga Hospital has 600 beds, 36 operation theatres and performs around 26,000 surgeries per year. A source of pride for us is that in addition to delivering quality healthcare, we are a preferred destination for surgeons to observe our work. The Plastic, Hand and Reconstructive Microsurgery department has received 2165 surgeons from 70 countries and 136 cities of India as on July 2021to observe the work done. (Table 1, Fig. 1). While many hospitals take pride in stating that they receive patients from many countries, we take pride in stating that we receive surgeons from many countries.

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Table 1 The countries from where surgeons visited Ganga Hospital

1	Afghanistan	25	Italy	49	Russia
2	Argentina	26	Jamaica	50	Rwanda
3	Australia	27	Japan	51	Saudi Arabia
4	Bangladesh	28	Jordan	52	Singapore
5	Barbados	29	Kenya	53	South Africa
6	Belgium	30	Kyrgyzstan	54	Spain
7	Bhutan	31	Libya	55	Sri Lanka
8	Brazil	32	Malaysia	56	Sudan
9	Brunei	33	Mongolia	57	Sweden
10	Canada	34	Morocco	58	Syria
11	Columbia	35	Myanmar	59	Tanzania
12	Cambodia	36	Namibia	60	Thailand
13	Denmark	37	Nepal	61	Togo
14	Dubai	38	New Zealand	62	Turkey
15	Egypt	39	Nigeria	63	UAE
16	Ethiopia	40	Norway	64	Uganda
17	Finland	41	Oman	65	UK
18	Germany	42	Pakistan	66	Ukraine
19	Ghana	43	Palestine	67	USA
20	Hong Kong	44	Panama	68	Uzbekistan
21	Indonesia	45	Philippines	69	Vietnam
22	Iraq	46	Poland	70	Yemen
23	Ireland	47	Portugal		
24	Israel	48	Qatar		

Ganga Hospital was founded by Mrs. and Dr. J G Shanmuganathan (parents of SRS) in 1972 with 5 beds in a rented building. In 1978, it became a 16-bed hospital in its own premises. It was converted into a specialty centre in 1991 following our training abroad. At that time, we had 35 beds and 4 operation theatres and a medical staff strength of 3—Dr. S. Raja Sabapathy, plastic surgeon with a special interest in hand and microsurgery, Dr. S. Rajasekaran an orthopaedic surgeon, with special interest in spine surgery, and a house officer. From such humble beginnings, now it has blossomed into an international training centre. Looking back, we do not seem to have done anything extraordinary, but subconsciously appear to have taken some steps which led to achieving our goals and, in the process, also became a preeminent centre for teaching .

Nurturing a Dream

We have been very lucky to have parents and teachers who helped us have high ambitions. We really wanted to excel in everything that we did. Sustaining big dreams is possible if only you have a bigger purpose. I (SRS) finished my M Ch in Plastic Surgery in 1985 and came to Coimbatore. Even though it was financially tough, I used to subscribe for the American Journal of Hand Surgery (JHS). At that time, there were only four subscribers to JHS (Am) in the whole country! JHS (Am) published articles on the experiences of the Bunnell Fellows of the American Society for Surgery of the Hand (ASSH). ASSH awards the Bunnell Fellowship to future leaders of the American Hand Surgery to enable them to travel round the world to all the best centres and bring back the experience. It is a great concept and provides the future leader an exposure to the best centres of the world in

Fig. 1 The world map showing the countries from where the trainees have come to Ganga Hospital

the field of his interest. In all the articles, I found that Bunnell fellows went round the world with stops in the UK, a centre in the Europe and then Singapore, Hong Kong, or Japan or Australia and back. If the candidate started from the west coast, the order was reversed. All of them flew across India. As I read that, I thought one day we need to make the Bunnell fellows not overfly India but must drop in our place. I dreamt of it in 1985 and it really took just a little over 20 years to make it a reality when Dr. Martin Boyer visited us, as the ASSH Bunnell fellow in the year 2007. I am writing this because nothing happens without an intense wish or desire. Once we have that somehow it will happen if we continue to nurture the idea and persevere.

What Does an Overseas Trainee Look for?

India and China are blessed with huge population and hence they have the patient volume which no other country can ever imagine. This is true of all specialties from Obstetrics to Geriatrics and everything in between. An early learning was that volume will neither bring you overseas visitors nor make you a respected teaching unit. Due to the population advantage, India and China will have most babies being born in the two countries, but that will not make an American or a European resident travel to India to learn to deliver children. The same could be said of every specialty. You must have something special that makes a surgeon visit you when they have a choice of places to go.

This lesson was strikingly brought to me during a conversation with Mr. David Elliot, Past President of the British Society for Surgery of the Hand and Editor of Journal of Hand Surgery and a good friend. I had always nurtured a wish that we must become a centre for advanced learning. During one of his visits to Coimbatore for a conference, I took David to Coconut Lagoon a resort in Kerala to show some of our country. During the evening tea, I mentioned, 'David, I want the best of the British Trainees to visit Ganga for training. How can we make that happen?'. David, a great systematic thinker, immediately replied. 'Raja, it is possible, but you have to think this way. The best of the British trainee has also got a choice. If he / she must choose you, then you need to be better than the rest or have something special to offer. Now let us see the centres where they go'. On the paper napkin and then on the laptop he put the names of the centres round the world, some in the USA, some in Europe, Singapore and Australia. He then asked to list what they offer, the fields of their sub-specialization, reputation of the institution leaders, monetary compensation. Then, in the end of the table, he wrote Ganga and asked me to fill up the columns. I was finding it difficult to fill many columns starting from the funding area. When I looked very thoughtful, David said, 'You can still make it happen with your micro course, showing quality results in a high volume setting with a special emphasis as to how they can use it in their practice (Fig. 2). They importantly will be looking for quality and best practices. Quality cannot be a now and then affair, but

Fig. 2 Picture marking the landmark course—Dr. Shenol Sasankan from Trivandrum holding the 1000th trainee board flanked by Mrs. and Dr. JG Shanmuganathan. Dr. Cornelius Masambu (Uganda), Dr. Naomi Leah Kekisa (Uganda), Dr. Komla Sena Amoutou (Togo), the other trainees hold the Acland Practice Manual

must occur each time, every time, in every patient practised by everyone in the unit. If you could make quality outcomes a commonplace with volume, then things will happen.' That is a prime requisite to become an international destination for teaching and training.

David also said, 'You would need to be officially recognized. If you don't have official recognition, no good person would like to come. Bright young people do not want to have a gap in their CV. If your work does not merit international recognition, if a person spends two or three months with you some may mistake that he has gone to India on a trip to Himalayas!'. David during his presidency of the British Society for Surgery of the Hand was instrumental in recognizing the Bruce Bailey Fellowship we offered to British Trainees. [1]

Gaining Recognition—First Local and then Global

Just as the saying 'Charity begins at home', reputation also must start at home. When I studied all the major international units of the world, all of them enjoyed great reputation in the local community. The locals felt proud to have the institution in their place. That starts with doing good to the community. Subconsciously, we appeared to have done that. We were the first in the area to do reconstructive microsurgery and continue to be the leaders in the field. When we started in 1991, the nearest microsurgery centre was 200 miles away. Though we had monopoly of the field, we were accessible to all, no replant was turned away based on affordability. We instituted variable pricing model to make quality care accessible to all. In addition, the innovative measures like 'On Arrival Block' and 'in theatre resuscitation' allowed us to push the boundaries in trauma care. [2] Perhaps the most important step was the bold decision not to insist on advance payment or payment on arrival of a trauma patient and doing what is needed on the first day built up trust in the community. [3] People felt that 'if you get hit, if you go to Ganga, they will take care'. That helped us to build volume.

Practicing it was not an easy affair. Strength of conviction, willingness of the emerging team to go the full mile and the support of our parents made it happen. We continue to adhere to the same principles even today and people in fact visit our centre just to see how this 'Ganga Model' works in reception of major trauma. Many visitors ask if that would work in their centre. I always feel that any good thing will always work provided you are willing to work on it till it works.

Documentation—a Key to Success

We were fortunate to have worked with doyens in the field and in their centres which attracted international recognition. It was the period of the late eighties, when India had not opened up and it was tough to go abroad. Once you went abroad and worked in world-renowned centres it was tougher for people to make the decision to come back.

I trained in the UK at Stoke Mandeville Hospital, Aylesbury and Canniesburn, Glasgow for 2 years and did the prestigious Kleinert Fellowship in Hand and Microsurgery at Louisville, USA for a year. Louisville was the Mecca for Hand Surgery those days. I should thank Mr. Bruce Bailey at Stoke Mandeville who suggested that I go there and helped me with it. Louisville at that time had about 30 hand fellows, 20 of them being international fellows. Being in such an energetic academic environment was very stimulating. It also made me feel that on going back we have to create a 'Louisville of the East' at Coimbatore.

One striking thing that we found in our training abroad was that the size of the institution did not matter. Some of the world-renowned institutions were relatively small, but the work was great. All of them assessed the patients carefully, operated them well but most important they documented the findings extraordinarily well. That was a great revelation for me. Good institutions followed up their patients well and documented the progress. In my training in India, the Hand Surgery department at Stanley Medical College came close to big centres, but all others fell way short. One may do a surgery for 3 to 4 h and the notes would be completed in 3 to 4 min. I understood that if we are to become a good ***respected*** centre, then we need to speak with ***authentic data.*** If you ask me to list the steps which led to our success, I will put the institution of practices of documentation as one of the top five. I just started writing notes as we would do in Louisville, and that in fact led to improved clinical care. Our discharge summaries had a lot of detail, and we were the first to give photographs of the injuries along with the discharge summary. All patients took their discharge summaries to their family doctors. Those doctors were pleasantly surprised that such work was being done.

We started our work in 1991, when India was just opening up its economy due to the measures of the then government. Information technology field was coming up and software engineers were flying out in droves to all parts of the world for employment. Every village at least had one person who was working abroad. Fax machines were becoming commonplace and the relatives of the injured sent a fax copy of the discharge summaries to their sons abroad. They showed it to their doctor friends. We used to give detailed discharge summaries and often the query

used to be answered with the words, 'even in America, we would have done just that… extremely gratifying to note that it has been done in a small city in India… etc.'. This has a multiplier effect and helps to build good volume. I am convinced that arguments of 'volume, too busy to write, too short of people' to explain poor documentation can not be accepted as an excuse for not practising good documentation. That is the first and a fundamental step to becoming an international centre of repute.

You Are Never Alone—Visitors Appreciate Transparency

In the early nineties, we used to have visitors once every few weeks or months, then at least one all the time, and we reached 148 visitors in 2019. Now we have a few of them all the time. They come from different backgrounds, but all have one thing in common. Visitors are here with a purpose to see what was making Ganga special. All are keen observers of things happening around them. [4]

Transparency in what is being done is appreciated by the visitors. They have total access to everything that we do. They are with us when we see the patients for the first time, talk about the surgery and *the cost of care* and they also see as to how we respond when we treat people with lesser means and how we handle complications. From the time I step into the hospital to the time I leave, I am never alone. The visitors have no loyalty or affinity to our institution when they come, though they might develop one when they leave. They are here to see how we handle situations—good and bad. They view everything with a critical eye. In the times of social media, it just takes minutes to flash a news that could either make or mar your reputation. So, one must walk the talk all the time. [5]

That could even be a stress to people. But I enjoy it and welcome it. I tell our team that our visitors are our best quality control inspectors. They force us to be at our best all the time. We have an NABH inspection every day!

It Needs Many Stars to Attract a Visitor

As was mentioned earlier, one just needs to study successful models that exist to achieve anything. Then, it is easy to build up. Louisville Hand Surgery served as the great example to me. When I was there in 1989, Louisville always they had at least 20 international fellows. The founders Harold Kleinert and Kutz were great and amazing but so were the rest of the staff. Each was good in their own way and were authorities in their subspecialty. A group of such people working together makes a formidable combination and a great source of attraction for the bright trainees. There is so much going on, so much of wisdom around, the centre becomes a great place to go and is great value for time. It was the late eighties when I understood it. The Indian scenario at that time offered a stark contrast. The good surgeons never took in bright young surgeons as their assistant or partners. Perhaps it was the fear of competition. Good general surgeons were helped by MBBS doctors and good super specialists either had an MS candidate or an MBBS doctor as their assistant. Team building and bright surgeons working together did not happen. Unfortunately, it still has not changed as much as we would wish even today.

From the beginning, we thought that we should take in bright people as our fellows who could be stars on their own and nurture them up. We did that and it helped in two ways. One, it led to the development of subspecialties like brachial plexus surgery, hand and wrist surgery, microsurgical trauma reconstruction, maxillofacial and cleft surgery, diabetic foot surgery, burns, breast and aesthetic surgery and oncological reconstruction. So much so, whenever we start developing a subspecialty interest, I used to say that we must be amongst the best three in the country or not be there at all. A high volume of quality work going on in so many aspects tilt the choice of the trainee when he considers travelling. It all starts with the founder taking in bright people and all staying together. To become an international destination for training, you need several stars in the centre.

'Atithi Devo Bhava'—True but It Is also Hard work

Though welcoming guests is part of our culture, practically it is not easy in our country. There are so many formalities to go through, right from obtaining visas, getting Medical council permission to securing clean, safe and reasonably priced accommodation and local transport. Before each overseas visitor arrives at Ganga, every one would have at least 25 to 50 e-mail communications. We received almost everyone at the airport. We wanted the first interface with the country to be pleasant. You need to be aware of all the rules and regulations—registration of overseas visitors with the police department, the visa regulations in force, etc. and not knowing them cannot be an excuse. You need to build up a good secretarial team to address the needs of the visitors. Things are a bit easier now, probably due to our familiarity of the processes, but I really wish the formality hurdles would become smaller so that we really mean it when we say, 'Atithi Devo Bhava'.

Rewards—It Is just Not for You, You Help in Nation Building

It is said to teach is also to learn. We have learnt a lot from our visitors. It allows your mind to be more open and see things from different perspectives. A situation can evoke contrastingly different responses from a trainee from the developed world and a trainee referred to us from a war-torn country sponsored by organizations like 'Médecins Sans Frontières' – Doctors without borders. You learn to understand them all. We also come to understand that at the end of the day irrespective of the race, religion or economic status all find joy in the same small things. Roderick Dunn, our first Bruce Bailey fellow, commented when he left, 'We all laugh and cry for the same things'.

Limits Are What You Set for Yourself

Edmund Hillary, after conquering Everest, said, 'It is not the mountain that we conquer, it is ourselves'. While becoming an international destination for teaching and training, there can be no limits to how far you go. We just loved teaching and sharing knowledge and were consistent in our efforts. We set up numerous domestic and international fellowships and partnered with the industry. In all our dealings we made sure that we give more than we get. I found transparency with no hidden agendas helps in growth.

When the news spread around of the value of the time spent in Ganga Hospital, major international organizations funding reconstructive surgery training and projects saw us as a reliable partner for their activities. Thus, we became the service arm for training candidates selected by Resurge Africa, B First of the British Association of Plastic and Aesthetic Surgeons, Operation Smile, Médecins Sans Frontières (Doctors without borders), International Medical Education Trust (IMET), Interplast Australia, CORSU of Uganda and many more. These organizations knew the ground reality that existed in the countries they served and recommended good people to us. All of them went back and made a big difference in the lives of the people.

But some moments do give you inner satisfaction. It happened during the Presidential address of Dr. Neil Jones, at the Annual Meeting of the American Society for Surgery of the Hand in 2016 [6]. The theme of the address was 'Teaching Hands – Pass it on'. He proposed the creation of travelling fellowships in the ASSH for the future 'super stars', to visit high-volume micro and reconstructive surgery centres. He created two fellowships, one to China and one to India, and Ganga was the centre he had chosen in India. The fellows are selected on a competitive basis, spend 3 months with us and they are a pleasure to have. Each of them becomes our ambassadors and also contributes to science [7–9]. Similarly, Martin Boyer after his Bunnell visit established Washington University – Ganga relationship whereby 50 of the Wash U fellows and residents have visited Ganga [10]. William Mayo while speaking of teaching the young said, 'They give me their energy and enthusiasm and I give them my experience and, in the end, I get the better of the bargain'. Very true, all the visits of these young people made us a lot better.

Carrying on—Keep Deeply Rooted in the Basics

A senior German surgeon when asked what he felt when he received an award since he has received many accolades in the past replied, 'All these awards and recognitions are enjoyable only when your patient on your operation table in your hospital does well every day'. That sums up the state of mind that one must possess when we face a lot of visitors. We have tried our best never to allow us to lose the fact that the purpose of our existence is to take care of the sick who come to our centre and all others are secondary. In this we again try to follow the words of William Mayo who aptly summarizes the relationship of patient care and advancing knowledge,'The best interest of the patient is the only interest to be considered, and in order that the sick may have the benefit of advancing knowledge, union of forces is necessary.' [11]. Thus, it has been a joyful 30 years, and one which we look back with satisfaction. We are sure that by adhering to some simple principles of good patient care, Indian surgical units could become the preferred centres for teaching and training.

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