

## General Surgery (GS) Residency Selection Process: A Comparison Between Singapore (Singhealth) and United States

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Completion of medical school training is a milestone in every doctor's career which represents a starting point from which the next phase of medical training begins. Traditionally, this phase starts with the trainee as a houseman, then a medical officer and onwards to go through further training if desired. For those who are surgically inclined, one would apply for Basic Surgical Training (BST) and then after completion of MRCS part 1, go on to Advanced Surgical Training (AST). The total time commitment for BST and AST average 6 years. This system, however, is gradually phased out.

Recently, the Ministry of Health (MOH) has decided to embark our trainees on a different path of surgical training and has adopted the residency system modelled after that in the United States (US). General surgery residency was among the first residencies to roll out live, and as of 2013, this programme is in its 4th year of implementation. The Accreditation Council for Graduate Medical Education -International (ACGME-I) has visited this programme and re-accredited it till 2016. Entry into General Surgery (GS) residency can be attained directly from medical school or as a house officer (HO) / medical officer (MO).

This paper seeks to compare and contrast the differences in the selection processes for general surgery residents in Singapore (Singhealth) and the United States.

### Singapore

In Singapore, the GS residency is hosted by 3 Sponsoring Institutions (SIs) which house various hospitals under their umbrellas: (i) Singapore Health Service comprising Singapore General Hospital, Changi General Hospital, KK Women's and Children's Hospital; (ii) National University Health System comprising National University Hospital and Jurong General Hospital; (iii) National Healthcare Group -Alexandra Hospital Pte Ltd (NHG-AHPL) comprising Tan Tock Seng Hospital, Khoo Teck Puat Hospital and Institute of Mental Health. All applications to any of the 3 SI general surgery programmes in Singapore are submitted to MOH to create a portfolio. The application portfolio consists of

personal statement, transcripts, hospital postings (HO/MO), curriculum vitae (CV) and referees (3 for graduating seniors and the dean's letter of recommendation acts as the 4th referee and 4 for HO/MO). The referees are contacted electronically by MOH to enter their comments and scores for the applicant on a standard questionnaire.

Candidates are encouraged to go to the various SI open houses to learn more about their programmes as well as have discussions with the respective programme faculty and advisors. Each programme also has its unique website to convey information to prospective applicants. These programmes individually do not have a formal interview schedule as MOH discourages formal interviews by the SI. However, the equivalent mechanisms are in place to get to know the applicants better as well as assess their fit into these respective SI.

The next step is for the applicants to sit through the formal interview conducted by MOH called the Multiple Mini Interviews (MMI). Candidates are required to complete a circuit of 4 interview stations,<sup>1</sup> each lasting approximately 10 minutes. Candidates will be presented with a short case scenario for each station and allowed 2 minutes of reading time. The actual interview will last for about 8 minutes and the responses assessed on pre-determined domains that include but not limited to:

- (a) Teamwork and collegiality
- (b) Communication skills
- (c) Compassion
- (d) Professional and ethical conduct
- (e) Personal attributes

MOH will then inform the SI of those candidates who have been successful at the MMI, and this list of candidates will be ranked by the SI for matching. If the SI feels that a particular candidate is outstanding but did not make it for the MOH list after the MMI, they can request for him or her to be added back to the list accordingly (WK Wong, December 2013, personal communication).

At Singapore Health Service (Singhealth), the programme

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identifies interested candidates at the open house. After the review of CVs, the programme director sends out invites to prospective residents for a “chit chat” session which is an informal sit down session with 3 faculty members to get to know the candidate better and, at the same time, to allow the candidate to find out more about the programme. Typically, a session lasts 30 minutes. Notes are taken from all these meetings which are used during the final selection process (PC Cheow, December 2013, personal communication).

Aside from the contents of the portfolio submitted to MOH, comments regarding the candidates are sought from all surgical faculties. These may be from interactions as a student, HO or MO. In an effort to get to know how these candidates function as members of a team, comments are also sought from the current residents and registrars as their interaction with the candidates which might differ from that with the consultants.

Finally, all the information from the MMI, portfolio, faculty comments and staff interactions are compiled and presented at the rank meeting. This rank meeting is separate for students and HO/MO at this time since 2 separate rank lists have to be presented to MOH. Members of the rank meeting include programme director, core faculty, representative head of departments and any interested faculty member. The confidential rank list generated from this meeting would be circulated to all the faculty again for comments prior to its final submission to MOH.

Candidates, on the other hand, also have a deadline for the submission of their rank lists. They are allowed to apply for up to 3 different specialties if one of their choices includes the clinician scientist track. Otherwise, a maximum of 2 clinical specialties. A matching process then ensues under the purview of MOH, and the applicants and SI will be notified of the results.

## United States

In 2010, a total of 246 accredited general surgery programme were available throughout in the US. All programmes have their unique characteristics and selection criteria. For this comparison, I will focus on 3 institutions—namely Brown University, Duke University and Washington University. Highly sought after programmes have successful application rates of around 1% i.e. there is one residency position for every hundred applicants. Almost all applications come from the graduating medical school class.

A prescreen is conducted on all the applications. In general, any failures in the United States Medical Licensing Examination (USMLE) scores or courses in medical school will be eliminated. The information is then reviewed once the file is complete through the Electronic Residency Application Service (ERAS).

ERAS is a service that transmits applications, letters of recommendation (LoRs), Medical Student Performance Evaluations (MSPEs), medical school transcripts, USMLE transcripts, Comprehensive Osteopathic Medical Licensing Examination (COMLEX) transcripts, and other supporting credentials from applicants and their designated Dean's Office to the respective programme directors.

Applications are scored objectively based on medical school transcripts, sub-internship grades, dean's recommendations, clerkship grades, class rank, research activities, leadership activities etc. (M Awad, December 2013, personal communication). Every programme has a different weightage to each of these components which add up to a final score.<sup>2</sup> Based on these, about 100 applicants are invited to participate in the interviews which happen 3 times to allow for schedule clashes with other programmes. Sometimes, programmes in the same geographical area will cluster their interview schedules to minimise travel time and cost for the candidates.

There is no formal open house for the candidates to get to know programmes. In general, since most of these programmes are established, their reputation is already well known in the community, and it is easy to find out by either speaking with current residents of the programmes or graduates of the programmes who may be in the candidate's medical school faculty or clinical faculty. Residents are often connected to others who are in the same “interview trail” and would share programme information with one another.

Candidates would usually select 10 to 15 programmes to attend the interviews for, it is a compromise between cost, risk of interview burn-out and maximising chances of matching into a residency which can be very competitive depending on the discipline of interest and programme.

Typically, residents have a social gathering prior to or immediately after the interview date with the residents e.g. at dinner or drinks. This is to allow the candidates to interact more freely with the residents without faculty oversight, and encourage them to ask questions or voice concerns about the programme. It also gives the residents a chance to get to know the candidates better personally to see if they would be a good fit for the programme.

On the day of interview, each candidate is usually interviewed by the chairman of department or programme director and 2 to 3 other faculty members.<sup>3</sup> These sessions may be also attended by a senior resident. The setting of the interview can be one-to-one or multiple faculty present. The interview format is usually left to the discretion of the interviewer(s) but often includes the following themes: presentation, personality, goals, work ethic, verbal skills. A subjective score is given for each interview session and combined to give a final subjective score (D Harrington, December 2013, personal communication).

The total score is then tabulated from the objective and subjective scores using each programme unique algorithm and shown to all faculty involved at ranking meeting. All comments made during the interview sessions are reviewed and resident feedback is welcome. These come from the social event i.e. dinner, informal sessions while waiting during interview day, lunch and during the tour of facilities given by the residents. A final rank list is submitted to the National Resident Matching Program (NRMP) for the match.<sup>4</sup>

On the administrative side, the match is conducted by the NRMP. The NRMP is sponsored by 5 organisations: the American Board of Medical Specialties (ABMS), the American Medical Association (AMA), the Association of American Medical Colleges (AAMC), the American Hospital Association (AHA), and the Council of Medical Specialty Societies (CMSS). Each year, the NRMP conducts a match that is designed to optimise the rank ordered choices of students and programme directors. Registration starts in August with 1 December as the final deadline. From mid January to February, candidates and programmes submit their preference lists. Results of the match will be announced in the third week of March.<sup>5</sup>

### Recommendations to Improve on the Singapore Selection Process

Choosing a surgical residency is a big decision for any graduating students, be they HOs or MOs. It entails a period of 5 years for clinical training and comes with it, a certain lifestyle. Ideally, all applicants would have worked at the SI of their choice prior to putting in an application for residency, however this is not practical for most of them. Unlike the BST/AST system where the faculty has close contact with the candidates and knows their personality, work ethic, clinical skills and acumen etc, the new residency system does not allow this luxury. As such, the selection of residents for residency is a crucial task for the faculty. With attrition rates of 17% to 26% in the US, no system or metric is perfect, constant improvements are needed with tweaks taking into account the local context.<sup>6</sup>

As the Singapore system allows entry into residency from different levels i.e. graduating medical students both from graduate and undergraduate medical schools, HO, MO and foreign registrars, the metric to judge these candidates cannot be uniform. Someone with more clinical experience should be expected to have conducted more research and perhaps pass basic examinations like MRCS part 1.

In line with that concept, a prescreen by MOH using the MMI does give some valuable information. We should add to that, a formal interview process by each SI to allow the candidates and faculty to better understand each other. All 3 SIs have their unique characteristics and may suit candidates

differently. An interview session would help bring forth these characteristics. An informal session with existing residents should be encouraged e.g. dinners or interactive games where personality traits not otherwise exposed during interviews can be uncovered. Consideration for overseas graduates must be given to attract the best students in the region and returning students so at least 2 dates should be set aside for interview activities.

While interviews are essentially a subjective assessment of the candidate, thoughts should be given to best add objectivity to the process. Predetermined domains e.g. work ethic, verbal skills, goals, presentation may be utilised for questions to be asked around them. A scoring sheet with comments can then be designed. This comes in handy during rank meetings as the faculty often have met too many candidates and may not remember every detail about them. These sheets will serve a useful reminder to the faculty.

The ranking of candidates should be done on one list where all applicants irrespective of clinical experience are critically looked at together. This would then be more streamlined than putting up a list for HO/MO and another for graduating students. Also, mandating a set quota for one group versus another should not be encouraged. We should instead focus on the strengths and weaknesses of each candidate and rank the person as such and accept a mix of residents by the match results. After all, a diverse vibrant group of backgrounds in the residency programme often is the best mix for a successful one.

There has been a long tradition for the current system of surgical training and we are proud of this heritage. Now we are entering into the next phase of training with the residency programme. The push towards academic medicine in Singapore causes us to strive to push past the current status quo by placing more emphasis on education and research. This should however not detract from our core mission as surgeons to heal patients who have given us their trust to help them in times of sickness and pain. It is with this in mind that we look at our selection process to determine who our next generation of surgeons will be.

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