

Name of training program: Fellowship in Endocrine Surgery

Name of Program Director (PD)

Asst Prof Rajeev Parameswaran FRCSI FRCS UK FAMS
Senior Consultant
Endocrine Surgery
National University Hospital Singapore

Duration of training program

1 year

Number of fellows per training program

Maximum 2 Clinical Fellows

Funding

Paid fellowship by NUH or self-funded

Objectives of training program

The fellowship aims to provide advanced endocrine surgical training and research opportunities in the field of endocrine surgery. This will be conducted at the National University Hospital in the division of Endocrine Surgery emphasizing on the best management of patients with complex endocrine surgical problems, besides providing the operative skills to successfully start a career in endocrine surgery. The program is aimed at surgeons who have completed their higher surgical training or working as junior consultants to further improve their experience in the field. The fellow will be fully supervised by SMC-approved supervisor from Department of Surgery, NUH only.

Entry requirements

- Applicants must be eligible for conditional registration with Singapore medical Council
- Applicants must have completed general surgical residency or equivalent training program from their respective countries
- Ability to communicate well and work in a team
- Proficiency in spoken and written English

Training

The fellows will be exposed to 3 domains of training – clinical exposure, didactic teaching and research.

1. Clinical exposure (50%)

The fellow will have exposure to the various endocrine and general surgical cases performed by the division Consultants, and the training will be fully supervised. They will follow the established international curriculum of endocrine surgery which includes thyroidectomy (open, endoscopic and robotic), parathyroidectomy, adrenalectomy (laparoscopic and open), reoperative endocrine surgery and neck dissections. They will also receive training in ultrasound of the thyroid and parathyroid glands, including fine needle cytology. Partake in the daily ward rounds is essential. There will not be any on calls or night duty for this job.

2. Formal didactics (20%)

The fellow will attend all the weekly multidisciplinary meetings, mortality and morbidity meetings, clinic-pathological conferences, and the monthly multidisciplinary thyroid eye clinic sessions. The fellow will participate in the weekly pre-operative meetings of cases scheduled for the following week, and engage in teaching of the residents, MO's and medical students attached to the firm.

3. Research (30%)

The program also provides ample opportunities for research (clinical and basic science) under the mentorship of one of the Senior consultants. The research exposure will provide the following:

- Develop and implement a clinical research project
- Develop skills to critically evaluate the scientific literature
- Develop a basic understanding of statistics and epidemiology
- Understand ethical behaviour in conduct of research
- Submit protocols for IRB approval
- Acquire skills in scientific writing
- Present research at National and International Meetings

Rotation to other institutions under National Health University System

There will be no rotation to other hospitals and CFs will only practice in Department of Surgery, NUH only.

Supervision of fellowship

The fellow will be fully supervised by SMC-approved supervisor from Department of Surgery, NUH only, both in the clinical, theatre and research settings. The program director will be responsible for research supervision in all the projects engaged by the fellow.

Assessment of fellows

The consultants will provide feedback to the fellowship program director on the progress of the fellow every 3 months. The program director will provide feedback to the fellow at quarterly intervals. The fellow is expected to keep a logbook of all the procedure performed which will be reviewed at 6 monthly intervals. The fellow will also evaluate the program and the faculty at 6 monthly intervals.

Criteria for termination of fellowship training program

Deficiencies in the fellow's performance will be first evaluated by the Program Director. Any inadequacies will be evaluated by the PD and the division following feedback from various sources and prompt remedial measures will be instituted.

1. Committee

The committee will be comprised of the PD, Senior and Junior Consultants and Associate Consultants of the firm and the PD will chair the committee.

2. Review

The PD will review the performance of the fellow every 3 months, and any deficiencies will be addressed with the fellow. Where remediation is required, the necessary actions will be recommended by the committee.

3. Action

The committee will make recommendations which may include, but not may be limited to, no cause for action, remediation, probation, suspension or termination. The committee may recommend removal of probationary status or suspension, or specific remediation imposed on the fellow.

4. Academic standards

To include but not limited to the following: action may be taken if the Fellow fails to meet the academic standards, fails to be prepared for the assigned projects on repeated basis, demonstrate inadequate preparation for meetings or conferences, fails to complete the assigned projects on time or in a timely manner or lack of motivation in research.

5. Patient care activity

To include but not limited to the following: action may be taken for failure to meet the standards of care expected of a fellow at similar level of training, failure to maintain medical records in a timely manner as described in policies, delinquent medical records, delinquent in completing surgical logs to record operative and non-operative case activity.

6. Personal conduct

To include but not limited to the following: action may be taken for consistently reporting late to work or in attendance at conferences, insubordination to faculty or senior doctors, violation of professional standards established by the program or the hospital, conduct detrimental to the care of patients or the reputation of the program or the hospital.

Feedback mechanisms for the fellow

Fellow is encouraged to provide feedback to the PD during the quarterly review. If the fellows has any concerns on the PD, he or she may approach the Head of the Division or the Head of the Department.

Previous fellows who successfully completed/ or in the program

1. Dr Mechteld Christine de Jong, Netherlands, currently working as a Consultant Endocrine Surgeon at Leeds Teaching Hospitals NHS Trust 2021-2022
2. Dr Diluka Pinto, Sri Lanka, currently working as a Consultant Endocrine Surgeon at Ragama Teaching Hospitals Sri Lanka 2022-2023
3. Dr Dan Cortes, Philippines, currently fellow in the division (2023 -2024)

Publications by the fellows for the years 2021-2024:

Peer reviewed journals

1: **Pinto D, Parameswaran R.** Adrenal insufficiency post unilateral adrenalectomy in non-cortisol secreting tumours. *Gland Surg.* 2023 Oct 30;12(10):1328-1331. doi: 10.21037/gs-23-335. Epub 2023 Oct 26. PMID: 38021202; PMCID: PMC10660178.

2: Zheng V, Rajeev R, **Pinto D, de Jong MC**, Sreenivasan DK, **Parameswaran R.** Variant anatomy of non-recurrent laryngeal nerve: when and how should it be taught in surgical residency? *Langenbecks Arch Surg.* 2023 May 9;408(1):185. doi: 10.1007/s00423-023-02928-y. PMID: 37160507.

3: **Pinto D, Parameswaran R.** Role of Truncated GalNAc Glycans in Cancer Progression and Metastasis in Endocrine Cancers. *Cancers (Basel).* 2023 Jun 21;15(13):3266. doi: 10.3390/cancers15133266. PMID: 37444377; PMCID: PMC10340074.

4: Aw A, **de Jong MC**, Varghese S, Lee J, Foo R, **Parameswaran R.** Systematic cohort review of pheochromocytoma-induced typical versus atypical Takotsubo cardiomyopathy. *Int J Cardiol.* 2023 Jan 15;371:287-292. doi: 10.1016/j.ijcard.2022.08.053. Epub 2022 Aug 30. PMID: 36055473.

5: **Parameswaran R, de Jong MC**, Kit JLW, Sek K, Nam TQ, Thang TV, Khue NT, Aye TT, Tun PM, Cole T, Miller JA, Villa M, Khiewvan B, Sirinvaravong S, Sin YL, Muhammad R, Jap TS, Agrawal A, Rajput R, Fernando R, Sumanatilleke M, Suastika K, Shong YK, Lang B, Bartalena L, Yang SP; Asian Graves Consortium Study. 2021 Asia-Pacific Graves' Disease Consortium Survey of Clinical Practice Patterns in the Management of Graves' Disease. *Endocrine*. 2023 Jan;79(1):135-142. doi: 10.1007/s12020-022-03193-7. Epub 2022 Sep 21. PMID: 36129592.

6: **de Jong MC, Pinto D, Parameswaran R**. Reduced uptake pattern on Ga-DOTATATE-scan may indicate necrosis predicting aggressive behavior in pheochromocytoma and paragangliomas (PPGLs). *J Surg Oncol*. 2023 Oct;128(5):764-768. doi: 10.1002/jso.27388. Epub 2023 Jul 5. PMID: 37403579.

7: **de Jong MC**, Mahipal M, Ngiam KY, Tan WB, Yang SP, **Parameswaran R**. The impact of lymph node ratio on disease recurrence in papillary thyroid microcarcinoma. *Ann R Coll Surg Engl*. 2023 Sep;105(7):632-638. doi: 10.1308/rcsann.2022.0094. PMID: 37652084.

8: B Chern; **D Pinto**; JH Lum; **R Parameswaran**. Nearly half of patients with. Anaplastic thyroid cancer may be amenable to immunotherapy. *Biomedicines*. 2024. Eprint ahead of publication. DOI: [10.3390/biomedicines12061304](https://doi.org/10.3390/biomedicines12061304).

9: **D Pinto, MC De Jong, R Parameswaran**. Challenges in genetic screening for inherited endocrinopathy affecting the thyroid, parathyroid and adrenal glands in Singapore. *Annals of the Academy of Medicine, Singapore*. 2024. [10.47102/annals-acadmedsg.202368](https://doi.org/10.47102/annals-acadmedsg.202368).

10: **De Jong MC, Parameswaran R**. Revisiting the Evidence for Routine Transcervical Thymectomy for the Prevention of Thymic Carcinoid Tumours in MEN-1 Patients. *Oncology*. 2022;100(12):696-700. doi: 10.1159/000526775. Epub 2022 Sep 14. PMID: 36103839.

11: Chandran M, Yeh LTL, **de Jong MC**, Bilezikian JP, **Parameswaran R**. Cognitive deficits in primary hyperparathyroidism - what we know and what we do not know: A narrative review. *Rev Endocr Metab Disord*. 2022 Oct;23(5):1079-1087. doi: 10.1007/s11154-022-09750-9. Epub 2022 Aug 22. PMID: 35994179.

12. **D Pinto**, TC Vasciuc, **R Parameswaran**. Centralization of adrenal surgeries and improved volume outcomes: Good, but is it practical globally? *Gland Surgery*. 2024. In Press.

Textbook chapters

1. **MEN-2: Hyperparathyroidism**. Chapter 47. **de Jong MC, Pinto D, Parameswaran R**. 50 Landmark Papers every Thyroid and Parathyroid Surgeon Should Know. Edited by Sam Wiseman, Sebastian Aspinall. Taylor & Francis 2023

2. **Case studies in Thyroid and Parathyroid Surgery 2023.** Editors: Rajeev Parameswaran., & Agrawal, Elsevier Publishers
 - a. Thyroid chapters:
 - i. Papillary microcarcinoma
 - ii. Histological surprise of malignancy in a goitre
 - iii. Implications of Bethesda cytology category 4
 - iv. Intracranial metastasis from follicular thyroid carcinoma
 - v. Locally advanced medullary thyroid carcinoma
 - vi. Lymphoma of the thyroid
 - vii. Persistent hypercalcitoninemia
 - viii. Stridor post thyroidectomy
 - b. Parathyroid chapters:
 - i. Discordant scans
 - ii. Surgical Conundrum and Challenges Surgery in MEN-1
 - iii. Parathyroid carcinoma
 - iv. Parathyroid surgery in MEN-2A
 - v. Persistent hyperparathyroidism
3. **Cases studies in Adrenal Tumours 2024.** Editors: Amit Agrawal, Roma Pradhan, Rajeev Parameswaran. Elsevier Publishers
 - i. Adrenal cyst
 - ii. VUS in paediatric PPGL
 - iii. Subclinical Cushing's syndrome
 - iv. Case of recurrent pheochromocytoma

Faculty of Endocrine Surgery at NUHS

1. **A/Prof Ngiam Kee Yuan**, Head of Division, Endocrine Surgery

Interests: General endocrine surgery, Minimally Invasive Endoscopic and robotic surgery, Ablative therapies for thyroid and parathyroid.

Research: AI & Data Mining, clinical data research

2. **Asst Prof Rajeev Parameswaran**, Senior Consultant & Previous Head of Division, Group Lead for Endocrine Surgery (National University Hospital Alexandra Hospital, Ng Teng Fong General Hospital)

Interests: Endocrine cancers, Inherited syndromes of the endocrine gland, General endocrine surgery, Reoperative endocrine surgery, paediatric endocrine surgery

Research: Mouse models in parathyroid disease; aberrant glycans in endocrine cancers, data-based research, systematic review and meta-analysis

3. Asst Prof James Lee, Consultant in Endocrine & General Surgery, Alexandra Hospital and National University Hospital

Interests: General endocrine surgery, minimally invasive surgery

Research: Data mining and AI

4. Adj A/Prof Sujith Wijerethne, Consultant in MIS and Endocrine Surgery, Head of Surgical Services, Alexandra Hospital

Interests: General endocrine surgery, minimally invasive surgery

Research: MIS data research

Visiting Consultants at NUH providing Endocrine Surgery Services

1. Emeritus Prof Abu Rauff
2. Prof Cheah Wai Keat, Ng Teng Fong Hospital
3. Asst Prof Oh Han Boon, Ng Teng Fong Hospital
4. Dr Joel Lau, Ng Teng Fong Hospital