

## HAND & RECONSTRUCTIVE MICROSURGERY FELLOWSHIP ATTACHMENT PROGRAMME IN NTFGH

Components	Information
<b>1 Division/ Department</b>	Department of Hand & Reconstructive Microsurgery, NUH , NUHS
<b>2 Title of Programme</b>	Hand & Reconstructive Microsurgery Fellowship
<b>4 Overview</b>	The key objectives of the fellowship are:
4.1 Background information	1. Attainment of fundamental clinical skills and knowledge in Hand and Reconstructive Microsurgery
4.2 Goal/ aim(s)	2. Increased exposure to and proficiency in the skill and art of microvascular surgery 3. Participation in research in the field of Hand and Reconstructive Microsurgery
4.3 Duration	12 months (1 year)
4.4 Hyperlinks/URL Sites	E-mail: <a href="mailto:hand_fellowship@nuhs.edu.sg">hand_fellowship@nuhs.edu.sg</a> URL: <a href="https://www.nuh.com.sg/our-services/Specialties/Orthopaedics-Reconstructive-Microsurgery/Hand%20and%20Reconstructive%20Microsurgery/Pages/HRM-Education.aspx">https://www.nuh.com.sg/our-services/Specialties/Orthopaedics-Reconstructive-Microsurgery/Hand%20and%20Reconstructive%20Microsurgery/Pages/HRM-Education.aspx</a>
<b>5 Pre-requisite /eligibility requirement(s)</b>	A basic medical degree, preferably registrable with the Singapore Medical Council. Postgraduate qualification in Hand Surgery, Orthopedic Surgery or Plastic Surgery.
<b>6 Course/Training Syllabus</b>	<p><b><u>Components of Clinical Training Programme</u></b></p> <p><b><u>Syllabus</u></b></p> <ol style="list-style-type: none"> <li>1. Anatomy of the Hand and Upper Limb – including understanding of the detailed relationships of all the tissues of the hand; surgical physiology affecting function of the hand</li> <li>2. Biomechanics of the hand, wrist and upper limb – both in normal and pathological conditions</li> <li>3. Clinical assessment of the hand – includes qualitative diagnosis and quantitative functional assessment and investigation such as electrophysiological and radiological studies.</li> <li>4. Hand Trauma – includes healing of all the tissues of the hand. The fellow should be familiar with management of skin loss, fractures, joint injuries, tendon injuries, nerve and vascular injuries and specialized injuries like fingertip injuries, high-pressure injection injuries, and burns. Principles and techniques of amputation of digits in trauma.</li> <li>5. Skills training – includes nerve coaptation and microvascular anastomosis in laboratory practice and bone fixation skills. The trainee should be competent in basic skin cover including V-Y advancement and cross-finger flaps; bone fixation techniques; tendon and nerve repairs.</li> <li>6. Infection of the hand and upper limb – includes clinical diagnosis, pathology and principles of surgical management.</li> <li>7. Common degenerative conditions and diseases in the hand – includes pathology, diagnosis and treatment of common hand conditions like tenosynovial disorders and nerve compression disorders; common conditions like mucus cysts and ganglions; common tumours like nodular synovitis, benign soft tissue and bone tumours.</li> <li>8. Rehabilitation of the hand – includes rehabilitation modalities and techniques, hand function assessment methods and tools; rehabilitation protocols and integrated rehabilitation programmes; orthotics and prosthetics of the upper limb.</li> <li>9. Replant surgery – includes principles of replant surgery. The trainee should have acquired the skill to perform digital replant surgery.</li> </ol>

	<p>10. Trauma and diseases of the wrist – includes carpal bone fractures, instabilities and their fixation and reconstruction; avascular necrosis; wrist fusion; arthroscopic surgery of the wrist joint.</p> <p>11. Other diseases in the hand and upper limb – includes pathology, diagnosis and treatment of the rheumatoid / arthritic hand and Dupuytren’s disease.</p> <p>12. Major hand trauma surgery – includes competence in assessment and management of mutilating hand injuries; emergency treatment; reconstructive options; pedicled flaps. Principles and techniques of surgical amputation in the hand and upper limb.</p> <p>13. Reconstructive microsurgery – includes principles of microsurgery; anatomy and physiology of free tissue transfer; familiar with cutaneous flaps, vascularized bone grafts, free muscle transfer, toe transfer.</p> <p>14. Major replant surgery – includes assessment, surgical techniques, principles of reconstructive replantation surgery; knowledge of pathophysiology, complications, long term morbidity and reconstruction options, expected functional outcome.</p> <p>15. Post – traumatic deformities and contractures – understanding of aetiology; analysis of diagnosis; indications for corrective procedures.</p> <p>16. Congenital hand deformities – familiar with classification abnormalities, corrective or reconstruction surgical procedures.</p> <p>17. Diseases I trauma that affect hand function – familiar with management of palsies of the upper limb including peripheral nerve lesions / injuries, brachial plexus injuries, tetraplegia, cerebral palsy, stroke / brain injury.</p> <p>18. Malignant tumours – includes management and micro-reconstructive options in relation to limb salvage and its outcome.</p> <p>The training programme also includes participation in ward rounds, outpatient clinics, surgery, emergency calls and weekly academic teaching.</p>
<p>7 <b>Training Method</b></p>	<p><b><u>Rotation(s) to other institution(s)/departments</u></b></p> <p>Our clinical fellows will work mainly in the Department of Hand &amp; Reconstructive Microsurgery, NUH for 9 months out of the 12-month fellowship. For the remaining 3 months, they will be rotated to the Hand &amp; Reconstructive Microsurgery Service, Department of Orthopaedic Surgery, Ng Teng Fong General Hospital (NTFGH) and Alexandra Hospital (AH). In essence, they will be only be working within the NUHS cluster while closely supervised by Hand Surgeons employed either by NUH or NUHS. When at NTFGH and AH, the clinical fellows will be supervised by Dr Andre Cheah and Dr Sandeep Sebastin respectively.</p> <p><b><u>Supervision Method</u></b></p> <p>Each clinical fellow will have an assigned primary supervisor for the entire period of the fellowship, who will be of at least consultant grade. For the 9 months they spend in NUH, he/she will be attached to one of our four teams in NUH where at least two other consultants will also function of supervisors of their daily work. For the 3 months they are rotated to NTFGH, they will be supervised by Dr Mark Puhaindran, Director of the Hand &amp; Reconstructive Microsurgery Service, Department of Orthopaedic Surgery, NTFGH.</p> <p>Last but not least, Dr Chan Chung Ming, the fellowship director, who works at both NUH, will be responsible for their training, supervision and welfare during the programme. In addition, Dr Andre Cheah receives guidance from and report to A/Prof Alphonsus Chong, the Group Director, Hand &amp; Reconstructive Microsurgery, NUHS for all matters including our fellowship programme.</p>

<p><b>8 Assessment and Evaluation</b></p>	<p>Each clinical fellow shall keep a Log Book of his/her work and progress. They should also keep a record of the laboratory practices sessions and dissections carried out. This shall be reviewed by their primary supervisor.</p> <p>Clinical fellows will be assessed through the Microsurgery course grade, consultant review (ward, operating room and clinic performance).</p> <p>They will be required to acquire the following surgery skills:</p> <ol style="list-style-type: none"> <li>1. Anatomical hand dissections</li> <li>2. Course and successful laboratory practice in microsurgery</li> <li>3. Skin repair and grafting</li> <li>4. Local and regional flaps in the hand</li> <li>5. Surgery for common hand conditions</li> <li>6. Tendon repair and reconstruction / grafting</li> <li>7. Tendon transfer</li> <li>8. Tenolysis and arthrolysis</li> <li>9. Hand fracture fixation and bone grafting</li> <li>10. Wrist fracture fixation and bone grafting</li> <li>11. Corrective osteotomy</li> <li>12. Joint reconstruction</li> <li>13. Wrist arthroscopy</li> <li>14. Nerve repair and grafting, transpositions</li> <li>15. Digital replantation</li> <li>16. Major replantation</li> <li>17. Free tissue transfer</li> <li>18. Congenital hand reconstruction</li> </ol> <p>Clinical fellows will have to attend compulsory reviews with the fellowship director and their supervisor at the 3rd, 6th and 9th month of fellowship. Ad hoc meetings with their team supervisors will take place if and when the need arises.</p>
<p><b>9 Criteria for Early Termination</b></p>	<p>Medical negligence/poor performance, as determined by the primary supervisor and fellowship director, endorsed by the Group Director, Hand &amp; Reconstructive Microsurgery, NUHS.</p>