

Curriculum Vitae of Dr Ganesh Bavikatte
MBBS, MD (Medicine), FRCP (London), FEBPRM (Europe)

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Present Posts:

- **Consultant and Clinical Lead**- Neuro Rehabilitation Medicine, The Walton Centre NHS Foundation Trust
Cheshire and Mersey Rehabilitation Network, Liverpool.
- **Clinical lead** North West Assistive Technology
- **Honorary Senior Lecturer**, School of Medicine, Liverpool University

Professional Qualifications:

1998	MBBS
2002	MD Medicine
2007	MRCP (U.K.), MRCP (London)
2010	ITQ Level 2 for IT users, NHS Manchester
2011	PGCE course workplace-based postgraduate medical education/ accredited clinical supervisor, North Western Deanery.
2012	Medical Leadership in Practice (MLIP course), Manchester Business School/ North Western Deanery
2012	FEBPRM (European Board- Physical Medicine and Rehabilitation)
2012	CCT (Rehabilitation Medicine), U.K.
2014	Cardiff University Law School- Medico-Legal Foundation certificate (CUBS)
2016	FRCP (London)

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Memberships:

General Medical Council (GMC)

Medical Defence Union (MDU)

British Society of Rehabilitation Medicine (BSRM)

Royal College of Physicians (London)

British Medical Association (BMA)

Member of the Association of Personal Injury Lawyers (APIL)

European Board of Physical and Rehabilitation Medicine

International Society of Physical and Rehabilitation Medicine

Professional Experience

I am a consultant, honorary senior lecturer, and clinical lead in the rehabilitation department at the Walton Centre in Liverpool.

I specialise in traumatic brain injury, polytrauma, neurorehabilitation, and stroke rehabilitation. In addition, I am an expert in using botulinum toxin to treat spasticity. My subspecialty interests include hyperacute rehabilitation, polytrauma rehabilitation, stroke rehabilitation and neurorehabilitation following complex injuries.

I run neurorehabilitation, spasticity and combined neurotrauma clinics with neurosurgeons, psychology, and charity organisations. I manage patients in Level 1 hyperacute and Level 1b specialist rehabilitation units. In addition, we take patients with acquired brain and spinal cord injury and patients with polytrauma and critical illness due to other acute medical and surgical illnesses. Our service was reported as exemplary by a national peer group team. I also have broader experience managing patients from acute and subacute units and community settings.

As a clinical lead, I am responsible for the smooth running of our service and specialist rehabilitation delivery according to national standards.

I am actively involved in undergraduate, postgraduate and multi and interdisciplinary teaching, audit, and research projects, which have led to posters and publications on an international platform to raise specialist rehabilitation profiles. I have also conducted national and international workshops. I author peer-reviewed journals and participate in professional societies like the British Society of Rehabilitation. I am the lead investigator for several research projects.

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Books

- **Editor and main author**
Bavikatte et al., Spasticity: Early and Ongoing Management. Common Patterns, Botulinum Toxin Treatment, Ultrasound Localisation, Post-treatment Exercises. 1st Edition, June 2017.

Book Reviewed by Dr Boardman, ACNR 2020; 19(3):23
- **Editor and main author**
Bavikatte et al., Drooling of Saliva: Salivary glands, Management options, Botulinum toxin, Ultrasound localisation- 1st Edition, 2019
- **Co-Editor and Co-Author**
"A Practical Approach to Interdisciplinary Complex Rehabilitation" Elsevier Publication
1st Edition - 31st January 2022
Paperback ISBN: 9780702082764
- **Ganesh Bavikatte, David Mackarel**
Chapter 9: Botulinum Toxin for the Management of Spasticity
IFNR Textbook of NeuroRehabilitation, 2024

Past National Roles

- National Manager, British Society of Rehabilitation Medicine, UK representative to the European Board of PRM, 2021- 2024.
- Chair of the Specialist Group for Assistive Rehabilitation Technology (**SIGART**), British Society of Rehabilitation Medicine, 2021- 2023.
- Co-opted member, NICE (National Institute for Health and Care Excellence) Guideline scope Head injury: assessment and early management (update), 2021- ongoing
- Chair of the Specialist Group for Assistive Technology (**SIGEAT**) - British Society of Rehabilitation Medicine 2015-2021
- Member of the national clinical reference group (CRG) – specialist Rehabilitation 2013-2018

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Past Regional Roles

- **Clinical Lead** Major Trauma Rehabilitation 2012-2024

Guidelines and International Roles

- Examiner of the European Board of PRM. 2021- 2024.
- National guidelines development group Spasticity in adults: Management using botulinum toxin 2nd Edition.
Royal College of Physicians/ BSRM 2017-2018
- **Traffic light system**- worked with internationally leading experts to develop an "Early warning scoring system for spasticity". This tool is for earlier prediction, identification, and spasticity management following a stroke.2018-2019
- **Toxnet group** - developing an international consensus statement to improve care and service for patients with spasticity, 2017- 2023.

Research and Innovation

I undertake several research and innovation projects in the field of rehabilitation.

Ongoing Projects and discussions

- U.K. Chief investigator for **PATTERN** – Multi-pattern treatment of upper and lower limb spasticity following stroke and TBI with Inco botulinum toxin. 2019-ongoing.
- Innovation projects: I started and led the project VERA (Virtual Engagement Rehabilitation Assistant), which combines Artificial Intelligence, Virtual reality, interactive gaming, and personal assistance. VERA provides personalised support to patients throughout the rehabilitation journey from 2018 to the present.

The initial prototype has been developed and implemented in the Complex Rehabilitation Unit inpatient setting at The Walton Centre, and the first research study has been completed. This study looked at VERA's acceptability, usability, and feasibility in an inpatient rehabilitation setting and identified barriers and enablers for implementation. As most rehabilitation is community-based, the project team is securing NIHR funding to support a second study to evaluate its use in a community setting.

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- The principal investigator for the **Brain-computer interface study**, 2019-ongoing
- a) EEG-based Awareness Detection and Communication in Prolonged Disorders of Consciousness and Physical Disability
- b) Brain-Computer Interface Technology Use Involving People with Disorders of Consciousness or Locked-in Syndrome: The Lived Experience of Families and the Impact of Person-Centred e.q. Practice by the Interdisciplinary Team-IRAS-272691.
- **PI for EPITOME study:** a prospective, multicountry study to estimate the incidence of and provide a best practice model for monitoring the development of post-stroke spasticity
- Neurocrine: Dyskinesia Due to Cerebral Palsy. A Phase 3, Randomised, Double-Blind, Placebo-Controlled Study to Assess the Efficacy, Safety, and Tolerability of Valbenazine for the Treatment of Dyskinesia Due to Cerebral Palsy

Previous

- **NHSc research project:** Acceptability (including gastrointestinal tolerance and compliance) of a high-energy adult enteral formula with food-derived ingredients.
Acceptability and Tolerance Study of Compleat® 1.5 HP
Nestlé Health Science
- U.K. Chief investigator for **ASPIRE**- An international, multi-centre, prospective, observational study at selected North America, Europe, and Asia sites. 2015-2017.
- Research Collaborator for **FABRICA** Fatigue in Acquired Brain Injured Children and young Adults (FABRICA) is a national multi-centre research study exploring the experiences of children and young adults affected with an acquired brain injury (ABI). The University of Liverpool conducts the research with Alder Hey Children's Hospital and The Walton Centre collaborator centres.
- Principle investigator for **ABOLISH**- An international, multi-centre, prospective, observational study. 2020, terminated due to the COVID situation.
- Principal investigator for **TONIC-Stroke** (Trajectories of Outcomes in Neurological Conditions) pilot project, 2018-2019.

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- The principal investigator for **Guided Self-rehabilitation** for long-term spasticity management, Pilot project, 2015-2016.
- Co-investigator for **ReMemBrlin** Study- the study of memory problems after Traumatic Brain Injury, 2014-2016.
- Supervising investigator for MRes Clinical Sciences (CNCS) project: Prevalence, Causes and Consequences of Sleep Disorders in Acquired Brain Injury, Liverpool University, 2014

Supervisor, PhD student projects, University of Liverpool

- A virtual assistant for promoting independent recovery and wellness
Supervisory team: Dr P Paoletti, Dr K D'Aout, **Dr Ganesh Bavikatte**
<https://www.liverpool.ac.uk/study/postgraduate-research/doctoral-training-programmes/projects/>
- Helping hand: A soft assistive device for upper-limb rehabilitation and assisted living
Supervisory team: Dr P Paoletti, Dr J Gardiner, Dr S Fichera, **Dr Ganesh Bavikatte**

Publications and Presentations

- Kathryn Jarvis, Julie Cook, **Ganesh Bavikatte**, Nicola Branscombe, Steve Donovan, Jo Haworth, Charlotte Lawrence. A pilot exploration of staff and service-user perceptions of a novel digital health technology (Virtual Engagement Rehabilitation Assistant) in complex inpatient rehabilitation. Disability and Rehabilitation: Assistive Technology. Published online: 14 May 2024. <https://doi.org/10.1080/17483107.2024.2351499>
- AM Alam, A Easton, **G Bavikatte**, S Mahendran, BD Michael. Sequelae of neurological infection – patient perspective, clinical presentations and management in primary care. 20 December 2022.
DOI:10.1002/tre.894
- J Wissel, R Allison, **G Bavikatte**, MM Sposito, De Mello, B Rawicki, P Winston, G Francisco, J McGuire, A Picelli, A Bailey, A Zuzek, D Simpson Content Validation, of a Post-stroke spasticity Risk Classification system: Cognitive interviews with Clinicians. International Journal of Stroke, 2021;16(3 Suppl): 53-53

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- Gerard E. Francisco, Alexander Balbert, **Ganesh Bavikatte**, *et al.*
A practical guide to optimising the benefits of post-stroke spasticity interventions with botulinum toxin A: An international group consensus J Rehabil Med 2021; 53: jrm00134
DOI: 10.2340/16501977-2753
- **Ganesh Bavikatte**, Gerard E. Francisco, Alberto Esquenazi, *et al.*
Onabotulinumtoxin A treatment in patients with upper limb and lower limbs spasticity from the ASPIRE study ISPRM International Society of Physical & Rehabilitation Medicine - 2021 Congress June 2021
- **Ganesh Bavikatte**, Gerard E. Francisco, Alberto Esquenazi, *et al.*
Onabotulinumtoxin A treatment in patients with upper limb and lower limb spasticity from the ASPIRE study AAPM&R American Academy of Physical Medicine & Rehabilitation - 82nd Annual Assembly November 2021
- **Ganesh Bavikatte**, Gerard E. Francisco, Alberto Esquenazi, *et al.*
Onabotulinumtoxin A treatment in patients with upper limb and lower limb spasticity ASPIRE study. MDS International Parkinson and Movement Disorder Society - 25th International Congress of Parkinson's Disease and Movement Disorders Sept 2021
- **Ganesh Bavikatte**, Gerard E. Francisco, Alberto Esquenazi, *et al.* Wolfgang H. Jost OnabotulinumtoxinA Treatment in Patients with Upper Limb and Lower Limb Spasticity from the ASPIRE Study. Presented virtually on 12th February at Physiatry '21, the Associated of Academic Physiatrists (AAP) Annual Meeting (February 9-13, 2021)
- **Ganesh Bavikatte**, Jorge Jacinto, Thierry Deltombe, Joerg Wissel.
Communication Botulinum toxin services: European recommendations for challenges and opportunities during the COVID19 pandemic. *Toxins* 2021;13: 584. <https://doi.org/10.3390/toxins13080584>
- **Ganesh Bavikatte**, Ganesh Subramanian, Stephen Ashford, Rhoda Allison, Dawn Hicklin. Review Article, Intervention and Management of Post-stroke Spasticity: Expert Consensus recommendations. *Journal of Central Nervous System Disease* 20th September 2021
<https://doi.org/10.1177/11795735211036576>
- Alberto Esquenazi, **Ganesh Bavikatte**, Daniel S Bandari *et al.* Long-Term Observational Results from the ASPIRE Study: OnabotulinumtoxinA Treatment for Adult Lower Limb Spasticity *PM&R* November 2020
DOI : <https://doi.org/10.1002/pmrj.12517>
- Jörg Wissel, **Ganesh Bavikatte**, Maria Matilde *et al.* Development of an Early Identification Tool in Post-Stroke Spasticity (PSS): The PSS Risk Classification

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System. *Archives of Physical Medicine and Rehabilitation*, 01st November 2020; 101:11

DOI : <https://doi.org/10.1016/j.apmr.2020.09.101>

- Francisco GE, Balbert A, **Bavikatte G** et al. A practical guide to optimising the benefits of post-stroke spasticity interventions with botulinum toxin-A: an international group consensus *Journal of rehabilitation medicine*: November 2020
DOI: 10.2340/16501977-2753
- Boardman A, **Bavikatte G**. An overview of Prolonged Disorder of Consciousness for the General practitioner" *BJMP* 2020;13(1): a007
- Carda S, Invernizzi M, **Bavikatte G**, et al. Original Article: The role of physical and rehabilitation medicine in the COVID-19 pandemic: the clinician's view *European Journal of Physical and Rehabilitation Medicine* 19th May 2020
DOI: 10.23736/S1973-9087.20.06317-0
- Carda S, Invernizzi M, **Bavikatte G**, et al. Letter: The role of physical and rehabilitation medicine in the COVID-19 pandemic: the clinician's view. *Ann Phys Rehabil Med* 18th April 2020;
DOI : <https://doi.org/10.1016/j.rehab.2020.04.001>
- Francisco GE, Bandari D, **Bavikatte G**, et al. High clinician and patient reported satisfaction with individualised onabotulinumtoxin A treatment for spasticity across several etiologies from the ASPIRE study. *Toxicon*: X September 2020;7: 100040
<https://doi.org/10.1016/j.toxcx.2020.100040>
- Francisco GE, Jost WH, **Bavikatte G**, et al. Individualised Onabotulinumtoxin a Treatment for Upper Limb Spasticity Resulted in High Clinician- and Patient-Reported Satisfaction: Long-Term Observational Results from the ASPIRE Study. *PM&R* 17th January 2020 <https://doi.org/10.1002/pmrj.12328>
- **Bavikatte G**, opinion article, post-stroke spasticity care – a new approach. *European Hospital* 11/12/2019
<https://healthcare-in-europe.com/en/news/post-stroke-spasticity-care-a-new-approach.html>
- Jost WH, Bäumer T, Laskawi R, et al. Therapy of Sialorrhoea with Botulinum Neurotoxin. *Neurol Ther* 2019;8(2):273–288 <https://doi.org/10.1007/s40120-019-00155-6>
- Morgante F, **Bavikatte G**, Anwar F, Mohamed B. The burden of sialorrhoea in chronic neurological conditions: current treatment options and the role of incobotulinumtoxinA (Xeomin®). *Ther Adv Neurol Disord* 2019;

12:1756286419888601. Published online 2019 28th November. DOI: 10.1177/1756286419888601

- Francisco GE, Bandari DS, **Bavikatte G**, *et al.* The Adult Spasticity International Registry (ASPIRE) Study: Real-World Treatment Utilization and Effectiveness of OnabotulinumtoxinA in Post-Stroke Patients Treated for Spasticity (P5.048) *Neurology* 2018; 90(15 Supplement): P5. 048
- Bell C, Hackett J, Hall B, *et al.* Symptomatology following traumatic brain injury in a multidisciplinary clinic: experiences from a tertiary centre. *Br J Neurosurg* 2018;**32(5)**;495-500
- Francisco GE, Bandari DS, **Bavikatte G**, *et al.* Comparison of onabotulinumtoxin A utilisation across various etiologies of spasticity from the adult spasticity international registry study: ASPIRE. *Ann Phys Rehabil Med* 2018; **61**: e69
- Esquenazi A, Jost W, **Bavikatte G**, *et al.* An examination of real-world onabotulinumtoxin A utilisation for the treatment of lower limb spasticity: The Adult Spasticity International Registry (ASPIRE) study. *Ann Phys Rehabil Med* 2018; **61**: e68
- Gerard F, Bandari D, **Bavikatte G**, *et al.* Comparison of OnabotulinumtoxinA Utilization and Effectiveness across Various Etiologies of Spasticity from the Adult Spasticity International Registry Study: ASPIRE. *Mov Disord* 2018; 33: S58-S59
- Francisco G, Bandari D, **Bavikatte G**, *et al.* Comparison of OnabotulinumtoxinA Utilization and Effectiveness across various etiologies of Spasticity from the Adult Spasticity International Registry Study: ASPIRE, *Neurology* 2018; 90 (15 Supplement): P5. 045
- Francisco GE, Bandari DS, **Bavikatte G**, *et al.* Adult Spasticity International Registry Study: methodology and baseline patient, healthcare provider, and caregiver characteristics. *J Rehabil Med* 2017; **49**:659-666
- Francisco GE, Bandari DS, **Bavikatte G**, *et al.* The Adult Spasticity International Registry (ASPIRE) Study: 1-Year Results (P4. 034), *Neurology* 2017; 88(16 Supplement): P4. 034
- Jost WH, Francisco GE, Bandari D.S., *et al.* The Adult Spasticity International Registry (ASPIRE) study 1-year results. *Basal Ganglia* 2017; 15
- Francisco G, Bandari D, **Bavikatte G**, *et al.* Baseline Demographics and Clinical Characteristics of Patients Treated for Spasticity in the Adult Spasticity International Registry (ASPIRE Study) (P3. 296) *Neurology* 2017; 86 (16 Supplement), P3. 296

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- Francisco GE, Bandari DS, **Bavikatte G**, *et al.*: Poster 66: The Adult Spasticity International Registry (ASPIRE) Study: Treatment Utilisation Patterns in Patients Treated for Both Upper and Lower Limb Spasticity. *PM&R* 09/2017; 9(9): S158., DOI: 10.1016/j.pmrj.2017.08.023
- Francisco GE, Bandari DS, **Bavikatte G**, *et al.*: Poster 79: The Adult Spasticity International Registry (ASPIRE) Study: 1-Year Results. *PM&R* 09/2017; 9(9): S162-S163
- Francisco GE, Bandari DS, **Bavikatte G**, *et al.*: Adult Spasticity International Registry Study: methodology and baseline patient, health care provider, and caregiver characteristics. *J Rehabil Med* 2017; **49(8)**: 659-666. DOI:10.2340/16501977-2245
- **Bavikatte G**. Health Awareness Rehabilitation Robotics and Virtual Rehab: How Far Should We Go?
<https://www.healthawareness.co.uk/rehabilitation/robotics-and-virtual-rehab-how-far-should-we-go/#>
- Shippen C, **Bavikatte G**, Mackarel D. The Benefit of Botulinum Toxin A in the Management of Central Post Stroke Pain: A Case Report. *J Neurol Stroke* 2017; **6(6)**: 00218. DOI: 10.15406/jnsk.2017.06.00218
- Jost WH, Francisco GE, Bandari D.S., *et al.*: The Adult Spasticity International Registry (ASPIRE) study: 1-year results. *Basal Ganglia* 05/2017; 8:15., DOI: 10.1016/j.baga.2017.02.044
- Francisco GE, Bandari D, **Bavikatte G**, *et al.*: Poster 281 The Adult Spasticity International Registry (ASPIRE Study): Baseline Demographics and Clinical Characteristics of Patients Treated for Spasticity. *PM&R* 2016; 8(9): S251-S252., DOI: 10.1016/j.pmrj.2016.07.454
- Turner-Stokes L, **Bavikatte G**, Williams H, *et al.* Cost-efficiency of specialist hyper acute in-patient rehabilitation services for medically unstable patients with complex rehabilitation needs: A prospective cohort analysis. *BMJ Open* 2016; **6(9)**; e012112 doi:10.1136/bmjopen-2016-012112
- **Bavikatte G**. Neurotrauma Book Review. Advances in clinical neuroscience & rehabilitation: *ACNR* 2016; **16**: 33
- **Bavikatte G**. Baseline Demographics and Clinical Characteristics of Patients Treated for Spasticity in the Adult Spasticity International Registry. *Neurology* 2016; **86(16)**: 296
- **Bavikatte G** *et al.* Poster Presentation. Major Trauma Rehabilitation Experience from the Walton Centre. *Mediterranean Congress*, Montenegro, 2013

- **Bavikatte G**, Mavrianou A, Sacco P, *et al*. Sensory responses to real vs placebo TMS in healthy subjects and patients with chronic neuropathic pain. *Edinburgh Pain Conference*, Edinburgh; 09/2016
- **Bavikatte G**. Prevalence, Causes and Consequences of Sleep Disorders in Acquired Brain Injury. 9TH ISPRM WORLD CONGRESS – BERLIN, GERMANY 19th June -23 Jun 2015; 07/2014
- **Bavikatte G**, J Kulkarni. "Fat Graft in Upper limb amputee" *IJPO* 2012; **24(1)**:50-51
- **Bavikatte G**, Hassoon A. "Autonomic dysfunction in GBS". Published online October/ November, *ACNR*, 2011
- **Bavikatte G**, Hassoon A, Eshiet MU-A. "Terson's syndrome- an experience of two patients in neurorehabilitation unit". *IJPMR* 2012;**22(3)**:102-4
- **Bavikatte G**, Sit P, Hassoon A. "Management of Drooling of Saliva", *BJPRM* 2010;**1**:1-10
- **Bavikatte G**, Gaber T. "Management of Spasticity in General Practice" *BJMP* 2009; 2(3):29-34
- **Bavikatte G**. "Case Studies in Neurological Rehabilitation" *ACNR* 2009;**9(3)**:18
- **Bavikatte G**, Gaber T, Eshiet MU-A. "Posterior Reversible Encephalopathy Syndrome as a complication of Guillain-Barre Syndrome". *J Clin Neurosci* 2010;**17(7)**:924-6
- **Bavikatte G**, M.D THESIS – "Estimation of Left Ventricular Mass in Hypertensive Patients by Echo and Its Correlation with ECG" Dec 2001

Teaching and Training

- External examiner for Edge Hill University 2019- 2021.
- I set up or lead- specialist training courses on regional, national, and international platforms
- I lead the "Liverpool spasticity course" and "Anatomy Training, a cadaver-based training course".
- Regularly not only attend but also present/teach in local, regional, national, and international meetings

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- I run Rehabilitation Medicine and assistive technology courses and training regularly
- **The reviewer of Journals:** Peer reviewer for many international rehabilitation Journals

Medico-Legal Training

- Regular updates on Medicolegal Practice
- Expert Medico-Legal report writing, Manchester, 11th July 2013
- Cardiff University Law School- Medico-Legal Foundation Certificate (CUBS) - 2013-2014

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