

Dr. Oliver R. Segal

MBBS MD FRCP FHRS

Curriculum Vitae

Personal Details

Name	Dr. Oliver Robin Segal
Current Position	Consultant Cardiologist & Electrophysiologist Barts Heart Centre St. Bartholomew's Hospital Arrhythmia Lead & Honorary Consultant Cardiologist, University College London Hospital, London
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NHS Practice Address	Department of Electrophysiology Barts Heart Centre St. Bartholomew's Hospital West Smithfield London EC1A 7BE e-mail: oliver.segal1@nhs.net
Date of birth	29 th March 1972
Nationality	British
GMC status	Full registration: since 7 th August 1996 Certification no.: 4209250
Medicolegal Indemnity	PMP - Certification no.: 18-2428094
ICO registration	ZA127798
Entry on to Cardiology Specialist Register	3 rd October 2008

Qualifications

MBBS	1995: King's College Hospital School of Medicine, University of London
MRCP (UK)	1999: Member of the Royal College of Physicians of London
MD	2008: National Heart & Lung Institute, Imperial College, St. Mary's Hospital, University of London
FHRS	2012: Appointed Fellow Heart Rhythm Society
FRCP	2013: Appointed Fellow of the Royal College of Physicians of London

Education

1983 – 1990	Haberdashers' Aske's School, Elstree, Hertfordshire
1990 – 1995	King's College Hospital School of Medicine & Dentistry, London
2001 – 2003	Imperial College, London

Postgraduate Prizes & Awards

2019	Level 5 Clinical Excellence Award Barts Health NHS Trust (backdated to 2016)
2015	Level 4 Clinical Excellence Award UCLH Foundation Trust
2014	Nomination for Heart Hospital Divisional Manager's Award for Service Excellence
2014	Level 3 Clinical Excellence Award UCLH Foundation Trust
2013	Fellow Royal College of Physicians
2012	Fellow Heart Rhythm Society
2011	Level 2 Clinical Excellence Award UCLH Foundation Trust
2011	Nomination for Heart Hospital Divisional Manager's Award for Service Excellence
2010	Level 1 Clinical Excellence Award UCLH Foundation Trust

2009	Top 25 most cited manuscripts from Heart Rhythm Journal 2009 for Segal OR et al. 'Differential ventricular entrainment – a maneuver to differentiate AV node reentrant tachycardia from orthodromic reciprocating tachycardia.' Subsequently published in Chinese version.
2004	Winner Young Investigator Award First Prize - Clinical Research NASPE Heart Rhythm Society, San Francisco, USA
2003	Judges' choice – Best abstract British Cardiac Society, Glasgow, UK
2000	Royal College of Physicians Teale Essay Prize for Trainees

Medicolegal experience

- I have undertaken medicolegal instruction for clinical negligence cases since 2011 and typically write 20-30 reports/year for Breach of Duty, Causation, Condition & Prognosis and Desktop screening reports.
- I have undertaken numerous meetings with Counsel and acted as a single joint expert.
- 95% of my reports have been for Claimants, and 5% for Defendants.
- My areas of expertise include all aspects of arrhythmia, electrophysiology, catheter ablation, cardiac rhythm device implantation and left atrial appendage occlusion device implantation.
- I do not undertake serious injury/industrial disease cases.
- I have not attended Court previously.
- Waiting time for a consultation is typically 1-2 weeks (which can also be done by video in selected cases).
- Average report turnaround time is 1-3 months depending on case complexity and caseload.

Medicolegal training experience

- Specialist Info - Medico-legal conference, Specialist Info, 20 June 2023
- Specialist Info - medico-legal advanced course, online, 18 December 2020
- Inspire Medilaw Expert Witness Training Course, Oxford, September 2019
- Attended then taught on "Keeping Clinicians out of Court" Medico-Legal Course, Northwick Park Hospital, July 2000-2003

Clinical experience in Electrophysiology, Ablation & Pacing

I have over 20 years' experience managing patients with arrhythmia and practising electrophysiology and in particular performing ablation and implanting cardiac rhythm devices. I have been a Consultant in the NHS at UCLH and Barts for over 14 years. I have extensive experience in using a wide variety of different catheter mapping systems and catheter ablations technologies

(performing >2,000 ablations) as well as many different technologies for cardiac rhythm device implantation and have performed >1,000 pacemaker/ICD/biventricular/ILR device procedures and perform leadless pacing and implant left atrial appendage occlusion devices.

Cardiology Specialist Registrar Training & Out of Program Experience

October 2007 – October 2008	Cardiology Specialist Registrar St. George’s Hospital Tooting, London
October 2006 - October 2007	Clinical Fellow Arrhythmia Service London Health Sciences Centre University of Western of Ontario London, Ontario, Canada
October 2005 - October 2006	Cardiology Specialist Registrar Eastbourne District General Hospital Eastbourne, East Sussex
October 2004 - October 2005	Cardiology Specialist Registrar St. Peter’s Hospital Chertsey, Surrey
October 2003-October 2004	Cardiology Specialist Registrar Epsom General Hospital Epsom, Surrey

MD Research

April 2001-October 2003	Clinical Cardiology Research Fellow, National Heart and Lung Institute, Imperial College, St. Mary’s Hospital, London
	Funding: British Heart Foundation Project Grant PG/2001030

MD Thesis Title ‘Abnormalities of conduction and activation in the diseased human left ventricle, identified by non-contact mapping’

Supervisors Professor Nicholas S Peters, Dr. D Wyn Davies

The focus of my research was to utilize the unique capabilities of non-contact mapping to investigate mechanisms of ventricular tachycardia and heterogeneities in conduction in left bundle branch block. Non-contact mapping records global activation from an entire cardiac chamber on a beat-by-beat basis thereby enabling insights previously only possible using animal models. In addition to being trained as an advanced user of the non-contact system (in the institution in which it was first validated), I constructed and carried out specific research protocols for patients in

conjunction with the clinical staff at St. Mary's. This work led to my MD Thesis and publication of three papers in high quality journals. The main research topics of the thesis were:

- Characterization of the properties of excitable gap in infarct-related ventricular tachycardia – (published in JACC and Winner of Young Investigator Award)
- Development of a novel algorithm for determining VT origin from the surface ECG – (published in the Journal of Cardiovascular Electrophysiology)
- Longterm results following ablation for infarct-related VT – (published in Heart Rhythm and presented as a Faculty Presentation at the Heart Rhythm Society in Denver 2007)
- Patterns of left ventricular activation in patients with and without left bundle branch block

In addition to the work published in my thesis, I also published a paper on a novel technique to map VT using angioplasty guidewires, developed with Dr. Wyn Davies. This was published in the Journal of Interventional Cardiovascular Electrophysiology and was also presented as a Faculty presentation at the Heart Rhythm Society in San Francisco 2008. I have also collaborated with Dr. Tony Chow leading to publications in Circulation on VF initiation and in Heart Rhythm on VT initiation. Whilst in Canada I continued to be fully engaged with research and published an important paper on SVT discrimination using a novel technique with Prof. George Klein. This work was one of the top 25 cited papers in Heart Rhythm in 2009 and as such, was also published in Mandarin for the Chinese edition of Heart Rhythm.

Research positions

- PI – Evolution Registry for Boston Scientific Watchman device – The Heart Hospital 2013
- PI – Medtronic ALSYNC Study for endocardial LV placement for CRT – The Heart Hospital 2013-14
- PI – Medtronic DF4-ICD lead fluoroscopic study – The Heart Hospital 2011-13
- PI – Bard Genesis Study for Bard Mesh Ablation catheter – The Heart Hospital 2010-2014

Invited Faculty – UK & International Conferences

- Heart Rhythm Congress, Birmingham, UK, October 10 2018. *EP Traces Course* – Faculty
- European Heart Rhythm Association Congress, Barcelona, Spain, March 20th 2018. Medtronic Official Satellite Symposium – Latest developments in pacemaker therapy: New technologies for better outcomes. *New Technologies to Facilitate Remote Monitoring and Enable Patient Engagement.*
- Medtronic Symposium: Current and future developments in cardiac device therapy, Frankfurt, Germany, January 19th 2018. *Patient involvement and pacemaker diagnostics.*

- Heart Rhythm Congress, Birmingham, UK, October 2017. *EP Traces Course* – Faculty
- Heart Rhythm Congress, Birmingham, UK, October 2016. *EP Traces Course* – Faculty
- Cardiostim, Nice, France, June 9th 2016. Baylis Official Satellite Symposium - Lead the Evolution: Superior Access for Superior Left Heart Therapies. *Breaking New Boundaries in CRT with Transseptal LV Endocardial Pacing*.
- British Cardiac Society Annual Conference, Manchester, UK, June 7th 2016. *Hot Topics - The best techniques for SVT diagnosis in the EP lab*
- Heart Rhythm Congress, Birmingham, UK, October 6th 2015. *Chair – Moderated Posters (2)*
- Heart Rhythm Congress, Birmingham, UK, October 5th 2015. *A&E/Admission Unit Presentations. Approach to the patient with an atrial arrhythmia*.
- Heart Rhythm Congress, Birmingham, UK, October 5th 2015. *BHRS Certification Prep for Nurses. Interpretation of device electrograms: a beginners guide*
- Heart Rhythm Congress, Birmingham, UK, October 4th 2015. *EP Traces Course*
- Heart Rhythm Society, Boston, USA, May 15th 2015. Chairman: *New Methods of Mapping to Improve Ablation of Cardiac Arrhythmias*.
- Heart Rhythm Congress, Birmingham, UK, October 8th 2014. *Literature Update: Primary prevention ICD programming: what should be the default setting?*
- Heart Rhythm Congress, Birmingham, UK, October 5th 2014. *EP Traces Course* – founder & director
- New Frontiers in Cardiac Care: Heart Rhythm Congress, Birmingham, UK, October 24th 2012. Watchman: Expanding Guidelines and Practices in New Therapy Areas. *Developing a patient pathway*
- Summer Medical Innovations Summit, Royal Society of Medicine, London, UK. June 2012. *The Laser Balloon for AF Ablation*.
- Mini Course, Heart Rhythm Society, Boston, USA. May 2012. Device Use in Patients with Syncope, Implanted Loop Monitors: *How To Distinguish Noise from Real Arrhythmias?*
- Cases & Traces, Heart Rhythm Congress, Birmingham, UK, October 5th 2011. *Pearls & Pitfalls of Pacing Manoeuvres*
- European Cardiac Arrhythmia Society, Paris, France April 2011. *Anticoagulant strategies during and after AF catheter ablation*
- Advanced Electrophysiology 1 – Advanced SVT Diagnostics: Heart Rhythm Congress, Birmingham, UK, October 4th 2010. *Unknown traces*
- Core Curriculum Presentation: Heart Rhythm Congress, Birmingham, UK, October 18th 2009. HRUK Certificate of Accreditation. *Clinical trials in arrhythmias*
- Core Curriculum Presentation: Heart Rhythm Society, San Francisco, California, USA, May 15th 2008. Recent Developments in Catheter Ablation of VT. *Intracoronary guidewire mapping for VT ablation*

- Core Curriculum Presentation: Heart Rhythm Society, Denver, Colorado, USA, May 10th 2007. Catheter Ablation of Post-MI VT. *Long-Term Results of Infarct-Related Scar VT*

Publications

Peer reviewed papers

- MacLean E, Mahtani K, Roelas M, Vyas R, Butcher C, Ahluwalia N, Honarbakhsh S, Creta A, Finlay M, Chow A, Earley M, Sporton S, Lowe M, Sawhney V, Ezzat V, Ahsan S, Khan F, Dhinoja M, Lambiase P, Schilling R, Hunter R, **Segal O**. Transseptal puncture for left atrial ablation: Risk factors for cardiac tamponade and a proposed causative classification system. *J Cardiovasc Electrophysiol*. 2022;1-9
- Creta A, Earley MJ, Schilling RJ, Finlay M, Sporton S, Dhinoja M, Hunter RJ, Papageorgiou N, Ang R, Chow A, Lowe M, **Segal OR**, Lambiase PD, Providência R. Ethanol Ablation for Ventricular Arrhythmias: A Systematic Review and Meta-analysis. *J Cardiovasc Electrophysiol* 2022;33(3):510-526
- Gossios TD, Providencia R, Creta A, **Segal OR**, Nikolenko N, Turner C, Lopes LR, Wahbi K, Savvatis K. An overview of heart rhythm disorders and management in myotonic dystrophy type 1. *Heart Rhythm* 2022 Mar;19(3):497-504.
- Patel K, Lim WY, Pavithran A, Assadi R, Wan D, Kennon S, Ozkor M, Earley M, Sporton S, Dhinoja M, Hayward C, Muthumala A, Hunter R, Lowe M, Lambiase P, **Segal O**, Mathur A, Schilling R, Baumbach A, Mullen MJ, Chow AW. Early pacemaker implantation for Transcatheter aortic valve implantation is safe and effective. *Pacing Clin Electrophysiol* 2022;45(1):103-110
- Creta A, Providência R, Gossios T, Elliott PM, Turner C, Savvatis K, **Segal OR**. A Normal Electrocardiogram Does Not Exclude Infra-Hisian Conduction Disease in Patients with Myotonic Dystrophy Type 1. *JACC Clin Electrophysiol* 2021;7(8):1038-1048
- Waddingham P, Behar JM, Roberts N, Dhillon G, Graham AJ, Hunter RJ, Hayward C, Dhinoja M, Muthumala A, Uppal R, Rowland E, Earley MJ, Schilling RJ, Sporton S, Lowe M, Harky A, **Segal OR**, Lambiase PD, Chow AWC. Post-operative cardiac implantable electronic devices (CIEDs) in patients undergoing cardiac surgery: a contemporary experience. *Europace* 2020 (*in press*)
- Papageorgiou N, Falconer D, Wyeth N, Lloyd G, Pellerin D, Speechly-Dick E, **Segal OR**, Lowe M, Rowland E, Lambiase PD, Chow AW, Bhattacharyya S. Effect of tricuspid regurgitation and right ventricular dysfunction on long-term mortality in patients undergoing cardiac devices implantation: >10-year follow-up study. *Int J Cardiol*. 2020;319:52-56
- Cobb V, Ezzat V, Higgins F, Lambiase P, Lowe M, **Segal O**, Chow AW. Chronic Performance of Riata 1580 and Endotak 0158 ICD Leads: A Single Centre Ten Year Experience. *Pacing Clin Electrophysiol* 2020;7:698-704

- Graham AJ, Orini M, Zacur E, Dhillon G, Daw H, Srinivasan NT, Martin C, Lane J, Mansell JS, Cambridge A, Garcia J, Pugliese F, **Segal O**, Ahsan S, Lowe M, Finlay M, Earley MJ, Chow A, Sporton S, Dhinoja M, Hunter RJ, Schilling RJ, Lambiase PD. Evaluation of ECG Imaging to Map Haemodynamically Stable and Unstable Ventricular Arrhythmias. *Circ Arrhythm Electrophysiol* 2020 [Epub ahead of print]
- Papageorgiou N, Falconer D, Ioannou A, Wongwarawipat T, Barra S, Tousoulis D, Lim WY, Khan FZ, Ahsan S, Muthumala A, Hunter RJ, Finlay M, Creta A, Rowland E, Lowe M, **Segal OR**, Schilling RJ, Lambiase PD, Chow AW, Providencia R. Full blood count as potential predictor of outcomes in patients undergoing cardiac resynchronization therapy. *Scientific Reports* 2019;9:13016
- Roberts PR, Pepper C, Rinaldi CA, Bates MGD, Thornley A, Somani R, Abozguia K, Harris S, Rao A, Pedersen M, McComb JM, Shepherd E, Moore P, **Segal OR**, Schilling RJ, Zaidi A. The use of a single chamber leadless pacemaker for the treatment of cardioinhibitory vasovagal syncope. *Int J Cardiol Heart Vasc.* 2019 Mar 28;23:100349 doi: 10.1016/j.ijcha.2019.100349. eCollection 2019 Jun.
- Srinivasan NT, Orini M, Providencia R, Simon R, Lowe M, **Segal OR**, Chow AW, Schilling RJ, Hunter RJ, Taggart P, Lambiase PD. Differences in the upslope of the precordial body surface ECG T wave reflect right to left dispersion of repolarization in the intact human heart. *Heart Rhythm* 2019;16:943-51
- Creta A, Chow AW, Sporton S, Finlay M, Papageorgiou N, Honarbakhsh S, Dhillon G, Graham A, Patel KHK, Dhinoja M, Earley MJ, Hunter RJ, Lowe M, Rowland E, **Segal OR**, Calabrese V, Ricciardi D, Lambiase PD, Schilling RJ, Providência R. Catheter ablation for fascicular ventricular tachycardia: A systematic review. *Int J Cardiol.* 2019;276:136-148
- Sawhney V, Volkova E, Shaukat M, Khan F, **Segal O**, Ahsan S, Chow A, Ezzat V, Finlay M, Lambiase P, Lowe M, Dhinoja M, Sporton S, Earley MJ, Hunter RJ, Schilling RJ. Impact of attributed audit on procedural performance in cardiac electrophysiology catheter laboratory. *J Interv Card Electrophysiol* 2019;56:199-203
- Providencia R, Marijon E, Barra S, Reitan C, Breitenstein A, Defaye P, Papageorgiou N, Duehmke R, Winnik S, Ang R, Klug D, Gras D, Oezkartal T, **Segal OR**, Deharo JC, Leclercq C, Lambiase PD, Fauchier L, Bordachar P, Steffel J, Sadoul N, Piot O, Borgquist R, Agarwal S, Chow A, Boveda S; DAI-PP Investigators. Usefulness of a clinical risk score to predict the response to cardiac resynchronization therapy. *Int J Cardiol* 2018;1:260:82-87
- Creta A, Chow AW, Sporton S, Finlay M, Papageorgiou N, Honarbakhsh S, Dhillon G, Graham A, Patel KH, Dhinoja M, Earley MJ, Hunter RJ, Lowe M, Rowland E, **Segal OR**, Calabrese V, Ricciardi D, Lambiase PD, Schilling RJ, Providência R. Procedural and quality assessment data on catheter ablation for fascicular ventricular tachycardia. *Data Brief.* 2018 Nov 13;21:2376-2378

- Providencia R, Marijon E, Barra S, Papageorgiou N, Ioannou A, Lambiase P, **Segal O**, Chow A, Boveda S. Screen, EAARN, or valid-CRT score, which one best predicts CRT response and long-term survival? *EP Europace* 2017;19:i27
- Providencia R, Teixeira C, **Segal OR**, Ullstein A, Mueser K, Lambiase PD. Empowerment of athletes with cardiac disorders: a new paradigm. *Europace* 2018;20:1243-51
- Providencia R, Teixeira C, **Segal OR**, Ullstein A, Lambiase PD. Call for joint informed consent in athletes with inherited cardiac conditions. *Open Heart*. 2017;4:e000516
- Providencia R, Craveiro Barra S, Papageorgiou N, Ioannou A, Rogers D, Wongwarawipat T, Falconer D, Duehmke R, Colicchia M, Babu GG, **Segal O**, Sporton S, Dhinoja M, Ahsan SY, Ezzat M. Dual-site Right Ventricular Pacing in Patients Undergoing Cardiac Resynchronization Therapy: Results of a Multicentre Propensity Matched Analysis. *Pacing Clin Electrophysiol*. 2017;40:1113-1120
- Providencia R, **Segal OR**. Is it time to loosen the restrictions on athletes with cardiac disorders competing in sport? *Br J Sports Medicine* 2017;51:1056-57
- Long-Term Results of Triventricular Versus Biventricular Pacing in Heart Failure: A Propensity-Matched Comparison. Providencia R, Rogers D, Papageorgiou N, Ioannou A, James A, Babu G, Cobb V, Ahsan S, **Segal OR**, Rowland E, Lowe M, Lambiase PD, Chow AWC. *JACC Clin Electrophysiol*. 2016;2:825-835
- Honarbakhsh S, Providencia R, Srinivasan N, Ahsan S, Lowe M, Rowland E, Hunter RJ, Finlay M, **Segal O**, Earley MJ, Chow A, Schilling RJ, Lambiase PD. A propensity matched case-control study comparing efficacy, safety and costs of the subcutaneous vs. transvenous implantable cardioverter defibrillator. *Int J Cardiol* 2016;228:280-285
- Papageorgiou N, Providência R, Srinivasan N, Bronis K, Moscoso Costa F, Cavaco D, Adragao P, Tousoulis D, Hunter R, Schilling R, **Segal OR**, Chow AW, Rowland E, Lowe M, Lambiase PD. Adenosine-guided pulmonary vein isolation versus conventional pulmonary vein isolation in patients undergoing atrial fibrillation ablation: an updated meta-analysis. *Int J Cardiol* 2016;227:151-160
- Betts TR, Leo M, Panikker S, Kanagaratnam P, Koa-Wing M, Davies DW, Hildick-Smith D, Wynne DG, Ormerod O, **Segal OR**, Chow AW, Todd D, Cabrera Gomez S, Kirkwood GJ, Fox D, Pepper C, Foran J, Wong T. Percutaneous left atrial appendage occlusion using different technologies in the United Kingdom: A multicenter registry. *Catheter Cardiovasc Interv*. 2017;15:484-492
- Providência R, Teixeira C, **Segal OR**, Ullstein A, Elliott P, Lambiase DP. A Call for Joint Informed Consent in Athletes with Inherited Cardiac Conditions. *Open Heart* 2017;4:e000516
- Providência R, Boveda S, Defaye P, **Segal O**, Algalarrondo V, Sadoul N, Lambiase P, Piot O, Klug D, Perier MC, Bouzeman A, Barra S, Bories MC, Gras D, Fauchier L, Bordachar P, Babuty

D, Deharo JC, Leclercq C, Marijon E, DAI-PP Investigators. Outcome of Primary Prevention Implantable Cardioverter Defibrillator Therapy According to New York Heart Association Functional Classification. *AM J Cardiol* 2016;118:1225-1232

- Babu, GG, Webber M, Providência R, Kumar S, Gopalamurugan AB, Rogers D, Daw H, Ahsan S, Khan F, Chow A, Lowe M, Rowland E, Lambiase P, **Segal OR**. Ventricular Arrhythmia Burden in Patients with Heart Failure and Cardiac Resynchronization Devices - The Importance of Renal Function. *J Cardiovasc Electrophysiol* 2016;27:1328-1336
- Srinivasan NT, Orini M, Simon RB, Providência R, Khan F, **Segal OR**, Babu G, Bradley R, Rowland E, Ahsan S, Chow AW, Lowe M, Taggart P, Lambiase P. Ventricular stimulus site influences dispersion of depolarization in the intact human heart. *Am J Physiol Heart Circ Physiol* 2016; 311:H545-54
- Providencia R, Elliott P, Patel K, McCready J, Babu G, Srinivasan N, Bronis K, Papageorgiou N, Chow A, Rowland E, Lowe M, **Segal OR**, Lambiase PD. Catheter ablation for atrial fibrillation in hypertrophic cardiomyopathy: a systematic review and meta-analysis. *Heart* 2016; 102:1533-43
- Providência R, Ganesha Babu G, Srinivasan NT, Bronis K, Lambiase PD, **Segal OR**. Is there still a role for CFAE ablation in addition to pulmonary vein isolation in patients with paroxysmal and persistent atrial fibrillation? A meta-analysis of 1,415 patients. *Circ Arrhythm Electrophysiol* 2015;8:1017-29
- Ezzat VA, Lee VF, Ahsan S, Chow AW, **Segal O**, Rowland E, Lowe MD, Lambiase PD. A systematic review of ICD complications in randomised controlled trials versus registries: Is our “real-world” data an underestimation? *Open Heart* 2015;17: e000198
- Gopalamurugan AB, Ganesha Babu A, Rogers, DP, Simpson AL, Ahsan Y, Lambiase PD, Chow AW, Lowe MD, Rowland E, **Segal OR**. Is CRT pro-arrhythmic? A comparative analysis of the occurrence of ventricular arrhythmias between patients implanted with CRTs and ICDs. *Frontiers in Physiology (Cardiac Electrophysiology Section)* 2014;5:334
- Finlay MC, Ahmed AK, Sugrue A, Bhar-Amato J, Quarta G, Pantazis A, Ciaccio EJ, Syrris P, Sen-Chowdhry S, Ben-Simon R, Chow AW, Lowe MD, **Segal OR**, McKenna WJ, Lambiase PD. Dynamic Conduction and Repolarisation Changes in Early Arrhythmogenic Right Ventricular Cardiomyopathy versus Benign Outflow Tract Ectopy Demonstrated by High Density Mapping & Paced Surface ECG Analysis. *PLoS One* 2014;9:e99125
- McCready J, Chow AW, Lowe MD, **Segal OR**, Ahsan S, de Bono J, Dhaliwal M, Mfuko C, Ng A, Rowland ER, Bradley RJ, Paisey J, Roberts P, Morgan JM, Sandilands A, Yue A, Lambiase PD. Safety and efficacy of multipolar pulmonary vein ablation catheter vs. irrigated radiofrequency ablation for paroxysmal atrial fibrillation: a randomized multicentre trial. *Europace* 2014;16:1145-53
- Ahsan SY, Saberwal B, Lambiase PD, Chaubey S, **Segal OR**, Gopalamurugan AB, McCready J, Rogers DP, Lowe MD, Chow AWC. An 8-year single-centre experience of cardiac

resynchronisation therapy: procedural success, early and late complications, and left ventricular lead performance. *Europace* 2013;15:711-7

- Ezzat VA, Chew A, McCready JW, Lambiase PD, Chow AW, Lowe MD, Rowland E, **Segal OR**. Catheter Ablation of Atrial Fibrillation – Patient Satisfaction from a Single Center UK Experience. *J Interv Card Electrophysiol* 2013;37:291-303
- Wadhwa V, Buxton AE, Antoniadis AP, McCready JW, Redpath CJ, **Segal OR**, Rowland E, Lowe MD, Lambiase PD, Chow AW. The use of a novel nitinol guidewire to facilitate transeptal puncture and left atrial catheterization for catheter ablation procedures. *Europace* 2011;13:1401-5
- Veasey RA, **Segal OR**, Large J, Hyde J, Sulke AN. The efficacy of intraoperative atrial radiofrequency ablation for atrial fibrillation during concomitant cardiac surgery – The Surgical Atrial Fibrillation Suppression (SAFS) Study. *J Interv Card Electrophysiol* 2011;32:29-35
- Jones DG, McCready JW, Kaba RA, Ahsan SY, Lyne JC, Wang J, **Segal OR**, Markides V, Lambiase PD, Wong T, Chow AW. A multi-purpose spiral high density mapping catheter: initial clinical experience in complex atrial arrhythmias. *J Interv Card Electrophysiol* 2011;31:225-35
- Gula LJ, Massel D, Leong-Sit P, Gray C, Fox D, **Segal OR**, Krahn AD, Yee R, Klein GJ, Skanes AC. Does Adenosine response predict clinical recurrence of atrial fibrillation after pulmonary vein isolation? *J Cardiovasc Electrophysiol* 2011;22:982-6
- McCready JW, Smedley T, Lambiase PD, Ahsan SY, **Segal OR**, Rowland E, Lowe MD, Chow AW. Predictors of recurrence following radiofrequency ablation for persistent atrial fibrillation. *Europace* 2011;13:355-61
- McCready JW, Nunn L, Lambiase PD, Ahsan S, **Segal OR**, Rowland E, Lowe MD, Chow AW. Incidence of left atrial thrombus prior to atrial fibrillation ablation. Is pre-procedural transoesophageal echocardiography mandatory? *Europace* 2010;12:927-932
- **Segal OR**, Chow AW, Peters NS, Davies DW. Mechanisms that initiate ventricular tachycardia in the infarcted human heart. *Heart Rhythm* 2010;7:57-64
- **Segal OR**, Gula LJ, Skanes AC, Krahn AD, Yee R, Klein GJ. Differential ventricular entrainment – a maneuver to differentiate AV node reentrant tachycardia from orthodromic reciprocating tachycardia. *Heart Rhythm* 2009;6:493-500
- Ciaccio EJ, Chow AW, Kaba RA, Davies DW, **Segal OR**, Peters NS. Detection of the Diastolic Pathway, Circuit Morphology and Inducibility of Human Post-Infarction Ventricular Tachycardia from Mapping in Sinus Rhythm. *Heart Rhythm* 2008;5:981-991

- **Segal OR**, Wong T, Chow AW, Jarman J, Schilling RJ, Markides V, Peters NS, Davies DW. Intra-coronary guidewire mapping – A novel technique to guide ablation of human ventricular tachycardia. *J Interv Card Electrophysiol* 2007;18:143-154
- **Segal OR**, Chow AW, Markides V, Davies DW, Peters NS. Characterisation of the effects of single ventricular extrastimuli on endocardial activation in human, infarct-related ventricular tachycardia. *J Am Coll Cardiol* 2007;49:1315-1323
- **Segal OR**, Chow AW, Wong T, Trevisi N, Lowe MD, Davies DW, Della Bella P, Packer DL, Peters NS. A novel algorithm for determining endocardial VT exit site from 12 lead surface ECG characteristics in human, infarct-related ventricular tachycardia. *J Cardiovasc Electrophysiol* 2007;18:161-168
- Kojodjojo P, Kanagaratnam P, **Segal OR**, Hussain W, Nicholas S Peters. The effects of carbenoxolone on human myocardial conduction: a tool to investigate the role of gap-junctional uncoupling in human arrhythmogenesis. *J Am Coll Cardiol*. 2006;19;48:1242-9
- **Segal OR**, Chow AWC, Markides V, Schilling RJ, Peters NS, Davies DW. Long-term results after ablation of infarct-related ventricular tachycardia. *Heart Rhythm* 2005;2:474-482
- Chow AWC, **Segal OR**, Davies DW, Peters NS. Mechanism of pacing induced ventricular fibrillation in the infarcted human heart. *Circulation* 2004;110:1725-1730
- **Segal OR**, Dawson JR, Gupta S. The use of echocardiography for stroke and peripheral embolus: Is it time for British/European guidelines? *Br J Cardiol* 2002;9:287-290

Editorials

- Antoniou S, Arden C, Beyer-Westendorf J, Hargroves D, McCormack T, McInnes G, Patel R, **Segal OR**. Unlocking the potential of NOACs. *Br J Cardiol* 2014;21(suppl 2):S1–S7
- **Segal OR**. Rate control for atrial fibrillation – one drug or two? *PMJ* 2009; 85(1004):281-2

Prize Essays

- **Segal O** “Physician - govern thyself?” *J R Coll Physicians Lond* 2000;34:492-3

Case reports

- Mann I, **Segal OR**. A case of durata ICD lead coil externalisation - inside-out lead abrasion? *HeartRhythm Case Reports* 2016;2:283
- Srinivasan N, **Segal OR**. Biventricular pacing and coronary sinus ICD lead implantation in a patient with a mechanical tricuspid valve replacement. *J Cardiol Cases* 2015 (in press)
- Zorzi A, Sepahpour A, Tomé-Esteban MT, Lambiase PD, **Segal OR**. An unusual case of pre-excitation treated with a pacemaker *PACE* 2015;38:282-5

- Novak J, Sepahpour A, **Segal OR**. Repetitive narrow and broad beats causing mild LV impairment. What is the mechanism? *PACE* 2014;37:1565-7
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- **Segal OR**, Markides V, Kanagaratnam P, Wong T, Peters NS. Multiple distinct right atrial endocardial origins in a patient with atrial tachycardia. Mapping and ablation using non-contact mapping. *PACE* 2004; 27:541-544
- **Segal OR**, Markides V, Wong T, Peters NS. Too focused? The perils of a fashionable diagnosis. *J Cardiovasc Electrophysiol* 2002;13:1058-60
- **Segal OR**, Fox K. Successful pregnancy following a peripartum cardiomyopathy *Br J Cardiol* 2002;9:50-52

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Book Chapters

- Opel A, **Segal OR**. “Cardiac pacing and implantable cardioverter/defibrillators” in Oh’s Intensive Care Manual (8th Edition), (Eds.) A Bersten & N Soni. Butterworth, Heinemann, Elsevier 2019
- Opel A, **Segal OR**. “Cardiac pacing and implantable cardioverter/defibrillators” in Oh’s Intensive Care Manual (7th Edition), (Eds.) A Bersten & N Soni. Butterworth, Heinemann, Elsevier 2014
- **Segal OR**, Linton NF, Malcolm-Lawes L, Davies DW. “Three-Dimensional Cardiac Mapping Techniques in Catheter Ablation” in Electrophysiological Disorders of the Heart, Chapter 92, 1319-1328. (Eds.) Saksena S and Camm AJ. Elsevier Saunders, Philadelphia, USA, 2012
- **Segal OR**, Koa-Wing M, Jarman J, Peters NS, Markides V, Davies DW. “Intracardiac Mapping” in Comprehensive Electrocardiology (2nd Edition), (Eds.) Camm AJC & MacFarlane PW. Springer 2010
- **Segal OR**, Markides V, Davies DW, Peters NS. “Temporary cardiac pacing” in Cardiac Pacemakers and Defibrillation: All you wanted to know (1st Edition), (Eds.) Chow AWC & Buxton AE. Blackwell 2006
- Markides V, **Segal OR**, Tondato F, Peters NS. “Mapping” in Cardiac Electrophysiology: From Cell to Bedside (4th Edition), (Eds.) Zipes DP & Jalife J. WB Saunders 2004

First Author Abstracts

- **Segal OR**, Gula LJ, Skanes AC, Krahn AD, Yee R, Klein GJ. Differential ventricular entrainment – a manoeuvre to differentiate AV node reentrant tachycardia from orthodromic reciprocating tachycardia. *JICE* 2008;21(2):144
- **Segal OR**, Gula LJ, Skanes AC, Krahn AD, Yee R, Klein GJ. First postpacing interval after differential tachycardia entrainment – A maneuver to differentiate AV node reentrant

tachycardia from orthodromic reciprocating tachycardia. Cardiovascular Residents Research Day, University of Western Ontario, London Health Sciences Centre, London, Ontario, Canada. June 4th 2007

- **Segal OR**, Chow AWC, Markides V, Davies DW, Peters NS. Characterisation of the effects of single ventricular extrastimuli on endocardial activation in human, infarct-related ventricular tachycardia. *Heart Rhythm* 2004;1(1S):S90
Winner Young Investigator Award, NASPE Heart Rhythm Society 2004, San Francisco, USA
- **Segal OR**, Kojodjojo P, Hussein W, Kanagaratnam P, Markides V, Peters NS. First report of the effects of the gap junction uncoupler Carbenoxolone on human myocardial conduction and arrhythmogenicity. *Heart* 2004, 30 (Supplement II): A36
- **Segal OR**, Chow AW, Markides V, Trevisi N, Lowe M, Della Bella P, Davies DW, Peters NS. A novel algorithm for determining endocardial VT exit site location from surface 12 lead ECG morphology in human, infarct related ventricular tachycardia. *Circulation* 2003;108(Supplement):IV-685
- **Segal OR**, Chow AW, Markides V, Davies DW, Peters NS. Patterns of left ventricular activation and relationship to right ventricular apex depolarisation defined by non-contact mapping with relevance to cardiac resynchronisation therapy. *Circulation* 2003;108(Supplement):IV-544
- **Segal OR**, Chow AWC, Markides V, Davies DW, Peters NS. Characterisation of left-ventricular activation in left bundle branch block; implications for cardiac resynchronisation therapy. *Eur Heart J* 2003;24(Abstract supplement):396
- **Segal OR**, Chow AWC, Markides V, Trevisi N, Della Bella P, Davies DW, Peters NS. A novel algorithm for determining endocardial ventricular tachycardia exit site location from surface 12-lead electrocardiogram morphology in human, infarct related ventricular tachycardia. *Eur Heart J* 2003;24(Abstract Supplement):718
- **Segal OR**, Chow AW, Markides V, Davies DW, Peters NS. Correlation between surface 12 lead ECG morphology and endocardial exit site determined by non-contact mapping in human infarct related ventricular tachycardia. *Heart* 2003;89 (Suppl. I):A61
- **Segal OR**, Chow AW, Schilling RJ, Markides V, Peters NS, Davies DW. The use of a percutaneous non-contact mapping system in targeting human ventricular tachycardia ablation: results from the first 50 patients. *Heart* 2003;89 (Suppl. I):A34
Judges' choice: Best abstract
British Cardiac Society, May 2003, Glasgow, UK
- **Segal OR**, Chow AW, Schilling RJ, Markides V, Peters NS, Davies DW. The use of a percutaneous non-contact mapping system in targeting human ventricular tachycardia ablation: results from the first 50 patients. *Circulation* 2002;106(Supplement):II-341

- **Segal OR**, Chow AW, Markides V, Davies DW, Peters NS. Correlation between surface 12 lead ECG morphology and endocardial exit site determined by non-contact mapping in human infarct related ventricular tachycardia. *Circulation* 2002;106(Supplement):II-604
- **Segal OR**, Chow AW, Schilling RJ, Markides V, Peters NS, Davies DW. The use of a percutaneous non-contact mapping system in targeting human ventricular tachycardia ablation: results from the first 50 patients. *Eur Heart J* 2002;23(Abstract Supplement):485
- **Segal OR**, Chow AW, Markides V, Davies DW, Peters NS. Characterization of the excitable gap in human ventricular tachycardia using non-contact mapping of conduction in the circuit. *PACE* 2002;25(II):681

Senior Author Abstracts

- Providência R, Perez Tome MC, Pantazis A, Elliot P, Lambiase PD, **Segal OR**. Risk stratification of Type 1 myotonic dystrophy: Is the ECG accurate enough to select patients at risk of bradyarrhythmic events? *Europace* 2016
- Providência R, Perez Tome MC, Pantazis A, Elliot P, Lambiase PD, **Segal OR**. Predictors of a prolonged HV interval in type 1 myotonic dystrophy. *Heart Rhythm* 2016;13:Suppl:S412-3.
- Providência R, **Segal OR**. Risk stratification of Type 1 myotonic dystrophy: Is the ECG accurate enough to select patients at risk of bradyarrhythmic events? *Heart Rhythm* 2016
- Betts TR, Leo M, Panikker S, Kanagaratnam P, Koa-Wing M, Davies W, Hildick-Smith D, Wynne G, Ormerod O, **Segal OR**, Chow AW, Todd D, Gomes C, Kirkwood GJ, Fox D, Pepper C, Foran J, Wong T. A Multicentre experience of Percutaneous Left Atrial Appendage Occlusion (LAAO) with a Focus on Acute Procedural Outcomes. *Heart Rhythm* 2015;12(5S):S529
- Babu GG, Webber M, Providencia R, Gopalmurugan AB, Ahsan A, Simon R, Khan FZ, Lambiase PD, Chow AW, Lowe MD, Rowland E, **Segal OR**. Chronic kidney disease - an independent risk factor for sustained VT/VF in heart failure patients with primary prevention CRT-D devices. *Heart Rhythm* 2015;12(5S):S423
- Pau V, Baxter W, Abiri P, Rombouts H, Goromonzi F, Bekdache Y, Char W, Pollock L, Choucair D, **Segal OR**, Shafquat A, Al Ghamdi B. Lead Use Conditions Imaging: A Noninvasive Upper Thoracic and Intracardiac Lead Mechanics Investigation. *Europace* 2014
- Babu G, Webber M, Kumar S, Gopalmurugan A, Ahsan S, Khan F, Simon R, Lambiase P, Chow A, Lowe M, Rowland E, **Segal OR**. Chronic kidney disease - an independent risk factor for sustained VT/VF in heart failure patients with primary prevention CRT-D devices. *Europace* 2014 Oct;16 Suppl 3:iii5. doi: 10.1093/europace/euu237.4
- Castro M, Lim PB, Dhaliwal M, S Ahsan, Gopalamurugan, AB, Nunn L, Finlay M, Simon R, Lowe MD, Lambiase PD, Chow AW, Rowland E, **Segal OR**. Patient satisfaction with nurse-led follow-up service for atrial fibrillation facilitated by implantable Reveal XT devices. *Europace* 2011

- Castro M, Lim PB, Dhaliwal M, S Ahsan, Gopalamurugan, AB, Nunn L, Finlay M, Simon R, Lowe MD, Lambiase PD, Chow AW, Rowland E, **Segal OR**. Patient satisfaction with nurse-led follow-up service for atrial fibrillation facilitated by implantable Reveal XT devices. *J Cardiovasc Electrophysiol*. 2011
- Ezzat VA, Chew A, McCreedy JW, Lambiase PD, Brennan C, Chow AW, Lowe MD, Rowland E, **Segal OR**. The Atrial Fibrillation Patient Journey – Patient Satisfaction from a Single Centre UK Experience. *Europace* 2010
- Gopalamurugan AB, Babu GG, Ahsan S, Rogers DPS, Lambiase PD, Chow AWC, Lowe MD, Rowland E, **Segal OR**. Incidence of ventricular tachyarrhythmias in patients receiving cardiac resynchronization therapy device. A retrospective analysis comparing patients with and without cardiac resynchronization therapy. *Heart Rhythm* 2010;7:S366
- Babu GG, Kumar S, Gopalmurugan AB, Lambiase PD, Chow AW, **Segal OR**. Chronic Kidney Disease is an independent predictor of sustained ventricular arrhythmia in heart failure patients with primary prevention cardiac resynchronization therapy devices. *Heart Rhythm* 2010;7:S57
- Gopalamurugan AB, Babu GG, Simpson A, Rogers DPS, Lambiase PD, Chow AWC, Lowe MD, Rowland E, **Segal OR**. Retrospective analysis of the incidence of ventricular tachyarrhythmias in patients implanted with a cardiac resynchronisation therapy device. *Europace* 2009; 11: iv9-iv12

Education in Electrophysiology

I was Programme Director and lead for Education for Electrophysiology Specialist Trainees at The Heart Hospital and then Barts Heart Centre, St. Bartholomew's for 10 years until 2018. I sat on the pan-Thames EP training committee and British Heart Rhythm Society exam-setting committee until 2018.

Course Directorships

- Course Director and Founder, Advanced Cardiac Resynchronization Therapy Course, Institute of Therapy Advancement, Paris, France. Supported by Boston Scientific International. 2009-2015.
- Course Director HeartSTART Course. Heart Hospital & Institute of Therapy Advancement, Paris, France. Supported by Boston Scientific International.
- Course Director and Founder, Electrophysiology Traces Course, Heart Rhythm Congress, Birmingham 2011-present
- Course Director and Founder, Electrophysiology Traces Course, Heart Rhythm Congress, Birmingham 2014-present. Sponsored by Biosense-Webster.

Courses & Symposia Attended

Electrophysiology & Devices:

- Abbott LAAO User Group Meeting, London, UK January 2020
- Medtronic His Bundle Pacing Course, Tolochenaz, Switzerland *February 2019*
- Merit Medical Advanced Interventional CRT implantation Course, Odense, Denmark *Sept 2018*
- Baylis SupraCross Workshop, Toronto, Canada *February 2017*
- Medtronic Micra Implanter Training Program, Tolochenaz, Switzerland *October 2016*
- Boston Scientific Advanced Surgical Techniques for S-ICD Implantation, Bristol, UK *May 2016*
- St Jude Medical LAAO Amulet implantation course, Brussels, Belgium *August 2015*
- Biosense Webster VT Mapping & Ablation Course, Milan, Italy *June 2014*
- Boston Scientific – First UK LAAO Symposium, London, UK *October 2013*
- Biosense Webster AF Symposium, Barcelona, Spain. *March 2013*
- Medtronic ALSYNC Training Course, Minneapolis, USA *January 2013*
- Biosense Webster nMarq Training Course, Bordeaux, France *Nov 2012-11-30*
- The 2nd London VT Symposium, London *Oct 2012*
- Boston AF Symposium, Boston, USA *Jan 2012*
- Left Atrial Appendage Occlusion Symposium, Frankfurt, Germany *Nov 2011*
- The 1st London Ventricular Tachyarrhythmia Symposium, Royal Society of Medicine, London *Sep 2011*
- Ultrasound Foundation Course for Electrophysiology. Hamburg, Germany *May 2011*
- 5th European AF: Together We Can Meeting. Budapest, Hungary *Feb 2011*
- Electrophysiology and Ablation of Accessory Pathways. Oxford, UK. *June 2010*
- Amplatzer Cardiac Plug Training Day. Birmingham, UK *May 2010*
- Bard Mesh Ablator Course. Eastbourne, UK *July 2009*
- Hansen Robotic Navigation Training Course. Mountain View, CA, USA. *March 2009*
- 8th Atrial Fibrillation Symposium. Rome, Italy *March 2009*
- 3rd European AF: Together We Can Meeting. Zurich, Switzerland *November 2008*
- 5th Annual Learn from the experts: Electrophysiology Fellows Symposium, Heart Rhythm Society, San Francisco, USA *May 2008*
- Bard Electrophysiology Training Day for Lab System Pro *January 2008*
- 13th Annual Boston Atrial Fibrillation Symposium Boston, USA *January 2008*
- 2nd European AF: Together We Can Meeting. Athens, Greece *November 2007*
- 8th Annual Canadian EP Fellows Course, Fairmont Le Château Montebello, Montebello, Québec, Canada *June 2007*
- 4th Annual Learn from the experts: Electrophysiology Fellows Symposium, Heart Rhythm Society, Denver, USA *May 2007*
- Electrophysiology Fellows Conference, Cardiovascular Research Institute at Washington Hospital Center, Washington DC, USA *April 2007*
- The 6th Annual Western Arrhythmia Specialty Symposium, London, Ontario, Canada *February 2007*
- Mark E. Josephson & Hein J. J. Wellens. How to Approach Complex Arrhythmias for EP Fellows, San Francisco, California, USA *January 2007*
- Medtronic Pacing and ICD Fellows Course, Toronto, Canada *November 2006*

- The Hospital San Raffaele Electrophysiology Training Session Advanced, Milan, Italy *June 2006*
- The Practice of Cardiac Resynchronization Therapy, Medtronic, Lausanne, Switzerland *June 2005*
- Advanced ICD Training for Physicians, Medtronic, Lausanne, Switzerland *March 2005*
- Anatomy for Transseptal Electrophysiology, St. Jude, Stratford upon Avon *November 2004*
- Advanced Pacing Course, Biotronik, *February 2004*
- The Analysis of the 'Unknown' Electrogram Tracing, NASPE, Washington, USA (Bard) *May 2003*
- CARTO Electroanatomical mapping course, Hamburg, Germany *February 2003*
- Bard 15th Annual EP Fellows Seminar, Chicago, USA *November 2002*

Echo:

- London Chest Echocardiography Course, *June 2000*
- Hewlett-Packard Echo II, *June 2000*
- Hewlett-Packard Echo I, *September 1999*

Management:

- Clinical Leadership and Management for Aspiring Consultants SGH *February 2008*
- Management for Specialist Registrars King's Fund. *October 2006*

Teaching:

- Teaching Tips for Teachers, UCL Hospitals NHS Trust, *September 2000*

Research:

- Training in Research Methods – Statistical Concepts and Applications Course *October 2000*
- Research Governance at University College Hospitals NHS Foundation Trust. *April 2009*
- Good Clinical Practice Course. UCL/UCLH/Royal Free Hospital Joint Biomedical Research Unit, Royal Free Hospital. *November 2009*

Clinical Governance:

- Patient Safety and Training Course. St. George's Hospital. *April 2008*

Education:

- Managing trainees in difficulty II, London Deanery, April 2010
- Educational Supervision Course, London Deanery, July 2010
- Managing Trainees in Difficulty - UCLH & London Deanery, Nov 2011

General Medicine:

- Hammersmith Medicine Course *January 2005*

Advanced Life Support:

- King's College Hospital *1995*
- St. Mary's Hospital *2002*
- St. George's Hospital *2008*

Professional Memberships

- Fellow Heart Rhythm Society, Fellowship number: 163146
- Fellow Royal College of Physicians: 78136
- Member British Heart Rhythm Society: 1744
- Member European Heart Rhythm Association: 134072

Miscellaneous

- Member of the Heart Rhythm UK exam setting committee 2009 – 2018
- Member Exam Setting Committee for European Heart Rhythm Association 2018 - present
- JournalScan reviewer for Heart (2001-2003)
- Reviewer for JACC, Heart Rhythm, JCE, PACE, Heart, Postgraduate Medical Journal & Europace
- Invited faculty to QIPP challenge for UKCPA event on preventing AF-related stroke, August 2012, presented to the Houses of Parliament July 2013
- UCLH Use of Medicines Committee Member July 2014-15
- Lead cardiologist for development of UCLP-wide guidance on use of Novel Oral Anticoagulant Drugs
- Invited Abstract Reviewer Heart Rhythm Society 2015 - 2018
- Regular presenter at AF Association / Arrhythmia Alliance meetings
- Invited faculty to QIPP challenge for UKCPA event on preventing AF-related stroke, August 2012, presented to the Houses of Parliament July 2013