

Do periodic vehicle inspection programmes improve vehicle safety? A literature review.

Author's Name & Qualifications, Position in Company/Organisation :

Verona Beckles
BSc., MSc. Public Health and Health Services Management, MBBS., MRCS (Ed)., FRCS Trauma & Orthopaedics (Ed).
Specialist Registrar to Mr. P.Thomas
Consultant Trauma and Orthopaedics Surgeon
Whittington Hospital, Magdala Avenue, Archway, London N19 5NF

Abstract :

Background

Road traffic crashes (RTCs) are a major and growing public health problem. Nearly 3,500 people, worldwide, are killed on the roads *each day (ref)*. Millions more are injured. Many factors contribute to frequency and severity of crashes. One of these is vehicle safety. This literature review looks at motor vehicle roadworthiness certification, also known as periodic vehicle inspection programmes, (MRC/VIPs) as a potential way of preventing RTCs, injuries and mortality.

Methods

Comprehensive literature review of relevant databases and websites to yield any literature (including grey literature) which summarised the effect, if any, of VIPs had on RTCs, injuries and mortality rates.

Results

32 articles were found from 39 databases and relevant websites. The most important finding was that most of the articles were from HICs. Main common theme was that RTCs were reduced by VIPs, especially fatal ones. 5 were of sound methodological quality, 10 were moderate and 10 weak. 7 were expert opinion or journalistic reports and

so were not assessed for quality.

Conclusions

Main limitations were firstly, the lack of published reports; and secondly, that it was not possible to detect the effect of the VIP alone, if it was part of other road safety reforms.

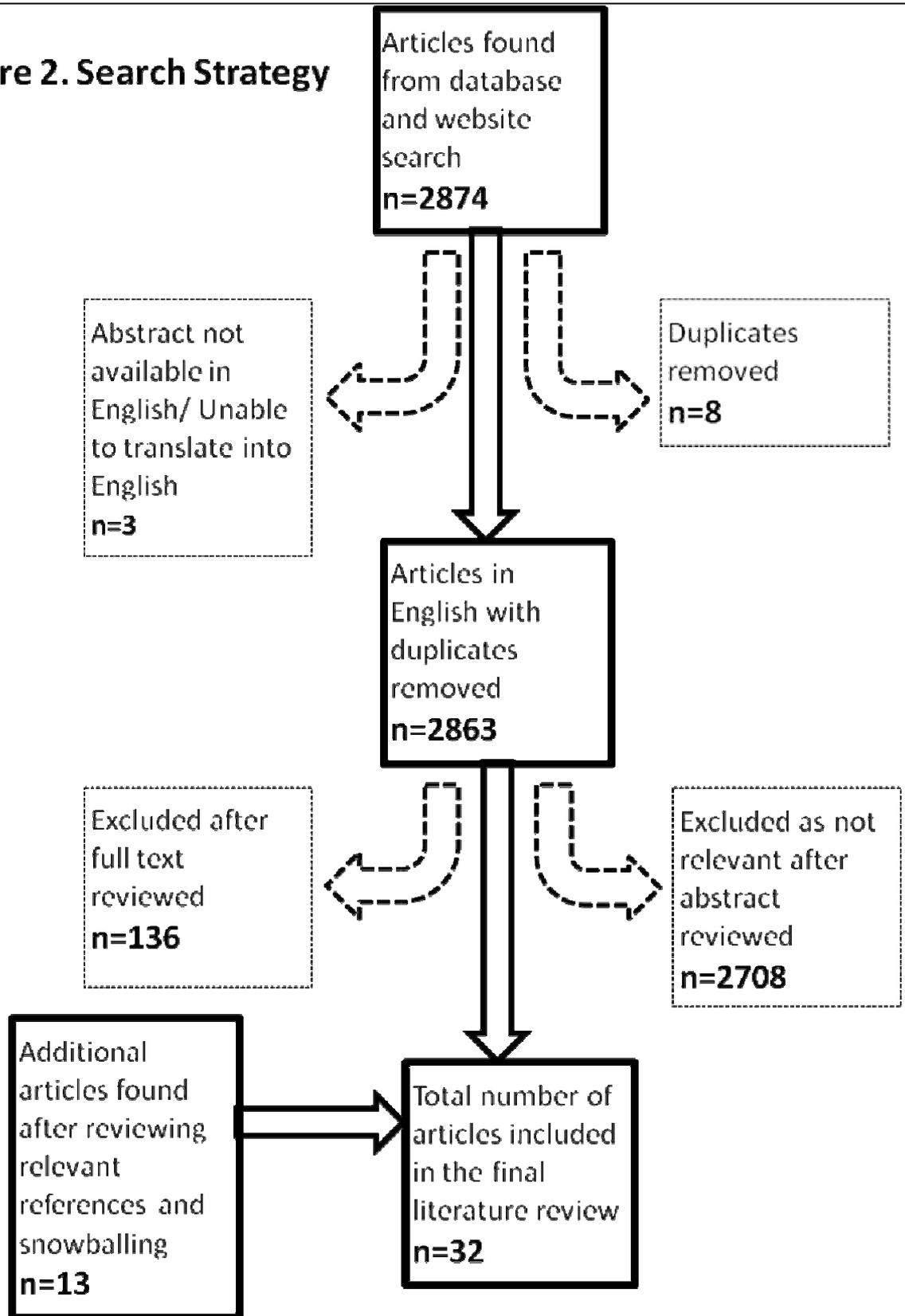
Country-specific recommendations were not possible because of the lack of information.

Recommendations were made for LIC and LMIC in general, BRIC and UMIC countries in general and then for HIC. Global recommendations were also suggested. Particularly to foster partnerships between experts in different disciplines to generate minimum standards for VI that jurisdictions within a region could adhere especially for heavy goods vehicles and for public transport that cross borders.

Supporting Tables : see below

**Supporting Figures :
see below**

Figure 2. Search Strategy



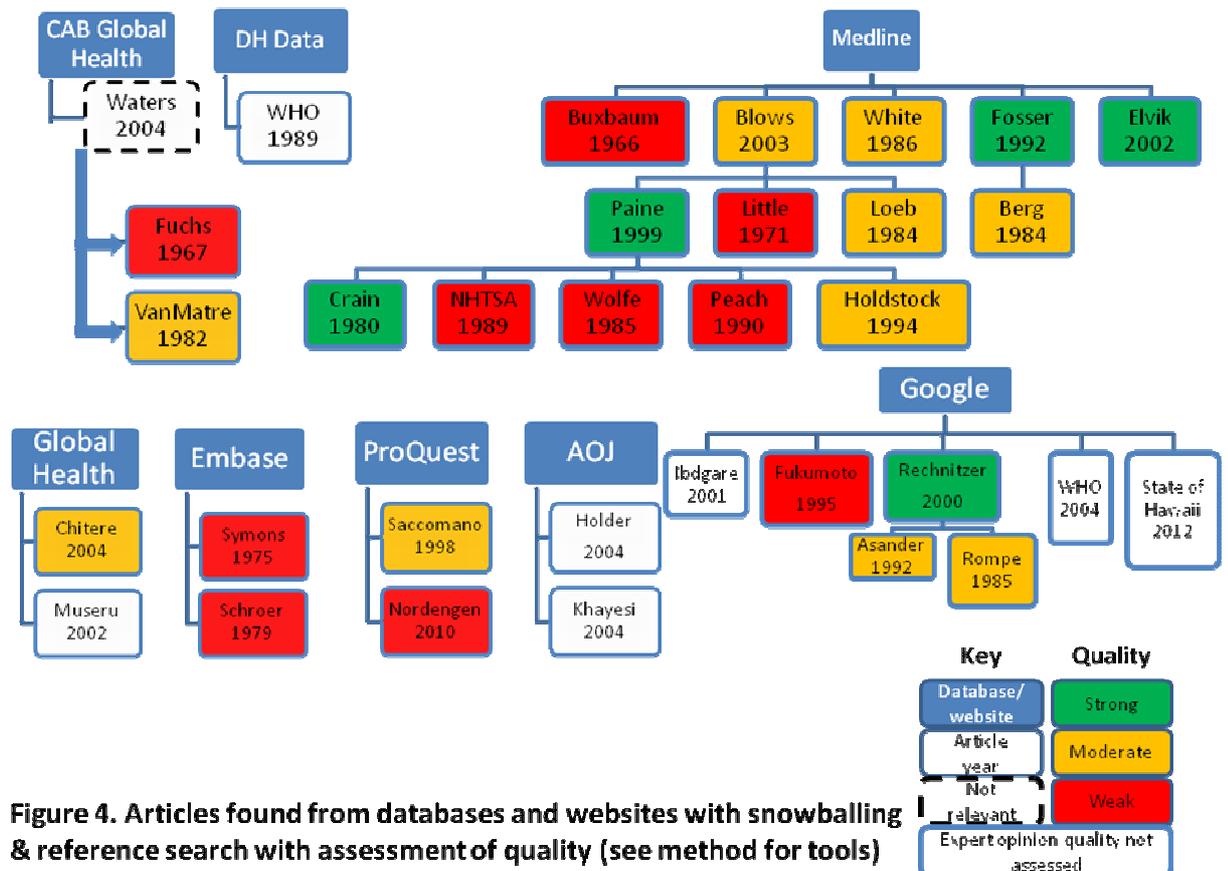
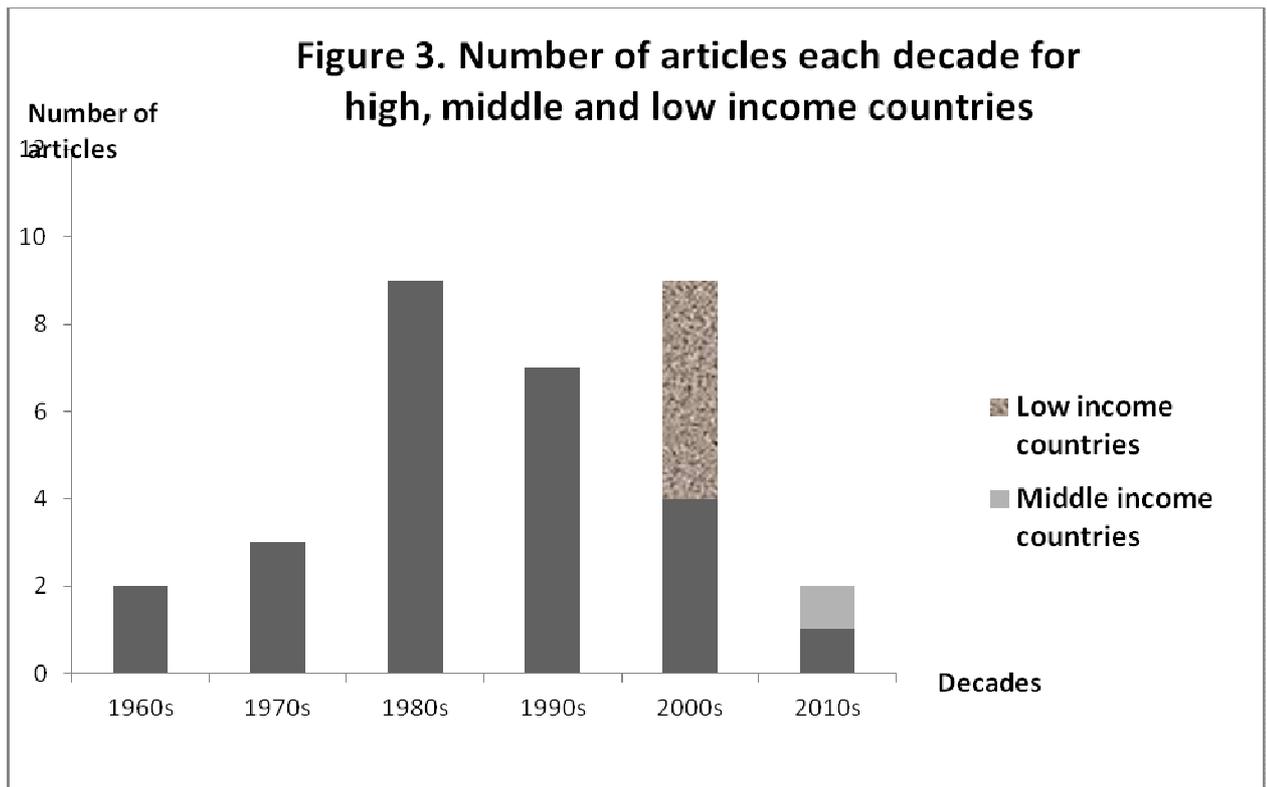


Figure 4. Articles found from databases and websites with snowballing & reference search with assessment of quality (see method for tools)

Brief Author CVs :**Verona Beckles BSc MBBS MSc MRCS (Ed)
FRCS (Ed) Tr & Orth****PERSONAL DETAILS**

Address 2 Fairfield Avenue, Edgware, Middlesex HA8 9AQ, UK
Telephone +44 (0) 7540 444 935

E-mail veronabeckles@gmail.com

Date of birth 9th June 1976
G.M.C. No. 4736349
Skype Username veronalucindalee

EDUCATION AND QUALIFICATIONS

| | | |
|---------------------------|-------------|--|
| FRCS Tr & Orth | 2012 | Royal College of Surgeons of Edinburgh |
| MSc | 2012 | Public Health – Health Services Management <i>University of London</i> Project: Road traffic crashes, injuries and mortality and motor vehicle roadworthiness certification. A review of the literature and recommendations for global and country- specific policy. |
| MRCS | 2004 | Completion of MRCS examinations |
| MBBS | 1994 - 2000 | Completion of MBBS (June 2000) |
| BSc | 1998 - 1999 | BSc Biological and Clinical Sciences Upper Second Class <i>Imperial College School of Medicine, London</i> |
| A' Levels | 1992 – 1994 | Biology A, Chemistry A, Mathematics A, Physics A |
| S' Level | 1992 – 1994 | Chemistry Grade 2 <i>Greenhill Tertiary College, Harrow</i> |

PRIZES AND AWARDS

| | |
|------|---|
| 2010 | WOC Overseas Travelling Fellowship |
| 2008 | Beit Trust Junior Doctors Bursary |
| 2008 | ASGBI Overseas Surgical Fellowship |
| 2008 | Furlong Travelling Scholarship, UK |
| 2008 | Gauvain Award, World Orthopaedic Concern |
| 2008 | Sir Ratanji Dalal Research Scholarship, Royal Colleges of Surgeons and Physicians |
| 2008 | Second Prize, Lightowler Meeting, Basildon Hospital, Essex |

CAREER AIMS

I have completed my FRCS (Tr & Orth) and MSc in Public Health with dissertation on the prevention of road traffic crashes. Long term, my goal is to combine a hospital practice in trauma and limb reconstruction surgery with an opportunity to teach and continue research in trauma prevention.

EMPLOYMENT HISTORY

CURRENT:

SPR TRAUMA & ORTHOPAEDIC SURGERY

Mr P.Thomas, Whittington Hospital, Archway Apr 2014 to date

PAST:

SPR TRAUMA & ORTHOPAEDIC SURGERY YEAR 6

Mr N. Maruthainar, Royal Free Hospital, Hampstead Oct 2013 to Apr 2014

SPR TRAUMA & ORTHOPAEDIC SURGERY YEAR 6

Mr M. Barry, Royal London Hospital, Whitechapel Apr 2013 - Oct 2013

SPR TRAUMA & ORTHOPAEDIC SURGERY YEAR 5

Miss D. Eastwood, Mr P. Calder & Prof. D. Marsh, Mr K. Rezajooi
Mr S. Lambert & Mr I Bayley RNOH, Stanmore Oct 2011 – Apr 2013

SPR TRAUMA & ORTHOPAEDIC SURGERY YEAR 4

Mr. H. Atkinson & Mr. M. Kurer, North Middlesex Hospital, London Oct 2010 – Oct2011

SPR TRAUMA & ORTHOPAEDIC SURGERY YEAR 3

Mr. K. Ratnakumar & Mr H Plaha, BHR Hospitals, Romford, Essex Oct 2009 – Oct 2010

OOPE - RESEARCH ORTHOPAEDIC FELLOW

Prof. W. J. Harrison, Beit Trust CURE International Hospital, Malawi Aug 2008 – Sep 2009

SPR TRAUMA & ORTHOPAEDIC SURGERY YEAR 2

Mr. M. Shoaib & Mr. R. Wakeman Aug 2007 – Jul 2008

SPR TRAUMA & ORTHOPAEDIC SURGERY YEAR 1

Mr. D. Rossouw & Mr. S. Mellor, Barnet Hospital, Herts Jul 2006 – Aug 2007

TRAUMA AND ORTHOPAEDICS SENIOR SHO

Mr. D. Rossouw, Barnet General Hospital, Herts Feb 2006 – July 2006

ORTHOPAEDICS CLINICAL FELLOW – SHO LEVEL

Prof. R. Emery & Mr P. Rosenfeld – St. Mary's Hospital NHS Trust, London Aug 2005 - Feb 2006

PLASTIC SURGERY CLINICAL FELLOW – SHO LEVEL

Mr M. Shibu – Barts and the London NHS Trust, London Feb 2005 - Aug 2005
Wide experience in trauma surgery including being on duty on July 7th bombings

VASCULAR SURGERY & HDU SHO

& CARDIOTHORACICS ON CALL Aug 2004 - Feb 2005

Prof. N. Cheshire– St. Mary's Hospital NHS Trust, London

BARTS & THE LONDON BASIC SURGICAL ROTATION

Aug 2002 - Aug 2004

ACCIDENT AND EMERGENCY SHO

Mr. S. Booth - Chelsea and Westminster NHS Trust, London Feb 2002 - Aug 2002

CHRISTIAN MEDICAL FELLOWSHIP RELAY WORKER

Mr. P. Saunders - WEST MIDLANDS Sept 2001 - Feb 2002

MEDICAL HOUSE OFFICER

Dr. V. Mak and Dr. A. C. Cayley - Central Middlesex Hospital, London Feb 2001 - Aug 2001

SURGICAL HOUSE OFFICER

Prof. A. Darzi - St. Mary's Hospital NHS Trust, London Aug 2000 - Feb 2001

PUBLICATIONS

R. Bhatia, **V. Beckles**, K. Rezajooi, Z. Fox, A. Casey

SPINAL OSTEOSARCOMA: DISMAL PAST, ANY HOPE FOR THE FUTURE?

British Journal of Neurosurgery November 2013; Early Online: 1–8

ISSN: 0268-8697 print / ISSN 1360-046X online DOI: 10.3109/02688697.2013.869550

O. Uri; **V. Beckles**, D. Higgs, M. Falworth, C. Middleton, S. Lambert
Increased-offset reverse shoulder arthroplasty for the treatment of failed post-traumatic humeral head replacement

J Shoulder Elbow Surg. 2013 Sep 30. pii: S1058-2746(13)00384-4. doi: 10.1016/j.jse.2013.07.041. [Epub ahead of print]

O. Uri; **V. Beckles**, M. Falworth, D. Higgs, S. Lambert

Revision arthroplasty with a hip-inspired CAD/CAM implant for glenoid-deficient shoulders. J Shoulder Elbow Surg. 2013 Jul 10. pii: S1058-2746(13)00233-4. doi: 10.1016/j.jse.2013.05.004. [Epub ahead of print]

V. Beckles, J. Stebbins, J. McCahill, N. Mkandawire, J. Church, C. Lavy

The African Disability Scooter - Efficiency testing in paediatric amputees in Malawi

Submitted for publication to Disability and Rehabilitation: Assistive Technology February 2014

V. Beckles - Edited by A. Doorgakant & N. Mkandawire

Orthopaedic Care at the District Hospital

Chapter on Non-operative management of ankle fractures. ISBN 978-0-9927018-0-2

V. Beckles, M. Nannaparaju, W. Yoon, K. Patel, E. Kafrida, N. Mkandawire

Tuberculosis of the cervical spine. An eight-year experience & analysis of 18 cases in Malawi. Eur Spine J Vol. 22, Supplement 1, pp 54-78, March 2013 (DOI 10.1007/s00586-013-2664-1)

K. Patel, **V. Beckles**, T. Briggs

UCL IOMS Podcast Interview with Professor T. Briggs Published February 2013

https://www.ucl.ac.uk/surgiscience/departments_research/ioms/podcasts/t_briggs_podcast

N. Patel, **V. Beckles**, P. Calder

Management of non-union and mal-union.

Book Chapter Submitted for publication with ORUK May 2012 in press

P. Harnett, R. Freeman, W.J. Harrison, L. Brown, **V. Beckles**

Accelerated Ponseti method versus standard Ponseti method. A prospective randomised controlled trial. JBJS Br 2011; 93(3); 404-8.

H. Wynn Jones, **V. Beckles**, W.J. Harrison, B. Akinola, A. Stevenson

Chronic Haematogenous osteomyelitis in children. An unsolved problem

JBJS Br 2011;93 (8); 1005-1010

V. Beckles, H. Wynn Jones, W.J. Harrison

Chronic haematogenous osteomyelitis in children. A Retrospective review of 167 patients in Malawi. JBJS Br 2010 :92(8) B;1138-1143

PUBLICATIONS continued

V. Beckles, J. Bates, W.J. Harrison

Pre-contouring plates using synthetic bone models as a template to aid minimal access fracture fixation Annals of Royal College of Surgeons of England 2009;91(6);523

L. Yong, M. Puttick, **V. Beckles**, J. Hyat, A. Darzi. **Adhesion Formation is reduced following**

Laparoscopic Lavage for Bacterial Peritonitis Compared with Open Lavage.

Surgical Endoscopy 1998 12 Suppl p. S17 (S63).

L. Yong, M. Puttick, **V. Beckles**, A. Mansfield, A. Darzi. **The Influence of Intra-abdominal Bleeding on Peritoneal Fibrinolysis & Adhesion Formation.** Surgical Endoscopy 1998 12 Suppl p. S51.

COURSES ATTENDED

Specialist Orthopaedics Courses

- 2013 Visiting Surgeon's Program, Hull Royal Infirmary, Smith and Nephew
- 2013 EFORT Istanbul, Turkey
- 2013 Orthofix Fundamentals of External Fixation Course, Verona, Italy
- 2013 Chertsey Ilizarov Course, Orthosolutions, Ashford
- 2012 Smith & Nephew Taylor Spatial Frame Course, York
- 2012 Upper Limb course for FRCS Tr & Orth, Wrightington
- 2012 Anatomy for FRCS Tr & Orth at Robert Jones and Agnes Hunt, Oswestry
- 2012 Peterborough FRCS Tr & Orth Revision Course
- 2011 Basics Sciences for FRCS Tr & Orth at Orthopaedics Research UK (formerly Furlong)
- 2011 Anatomy for FRCS Tr & Orth at RCS England
- 2011 Charnley 100 week, Wrightington
- 2011 Trauma Symposium, London, RSM
- 2010 Oxford Unicompartamental Knee Course, Oxford
- 2010 B-Braun Navigation Knee Arthroplasty Course, Munich
- 2008 Stryker Hip Symposium, Exeter
- 2007 Stryker IM Nailing & Ex-fix Course, Nice
- 2007 BESS, Telford
- 2007 7th Peterborough Hip Fracture Conference, Stamford
- 2007 Six of the Best, Shoulder Course, Exeter
- 2007 Intermediate Knee Arthroscopy, Royal National Orthopaedics Hospital, Stanmore
- 2006 Basic Hip Arthroplasty, Royal National Orthopaedic Hospital, Stanmore
- 2006 Core Skills in Orthopaedic Surgery, University Hospital, Cardiff
- 2006 Introduction to Ilizarov, Smith & Nephew, Bristol
- 2005 Orthofix Excaliber, St. Mary's Hospital, London
- 2004 AO Principles of Fracture Repair Course, Leeds

Basic Surgical Courses

- 2012 ATLS Hillingdon, Middlesex
- 2003 Care of the Critically Ill Surgical Patient, University Hospital, Cardiff
- 2002 Basic Surgical Skills Course, Broomfield Hospital, Chelmsford

Other Courses

- 2013 Ultrasound Guided Regional Anaesthesia Course, Hull Royal Infirmary
- 2013 Clinical Management & Leadership, Keele University, Royal College of Surgeons
- 2012 Global Surgery Day, Royal College of Surgeons of England
- 2010 Reviewer's Day, JBJS Br, London
- 2010 Media Training for Christian Medics, CMF, London
- 2006 Ionising Radiation (ME) Regulations Course, St. George's Hospital
- 2005 2nd Trauma Meeting, Wexham Park Hospital, Slough
- 2005 Teaching the Teachers course, Kings College Hospital, London
- 2004 Cochrane Collaboration How to Write a Systematic Review Protocol, Oxford

RESEARCH, AUDIT AND PRESENTATIONS

- 2014** ORAL PRESENTATION
**Do periodic vehicle inspection programmes improve vehicle safety?
A literature review.**
V. Beckles *Accepted for the Safer Roads Conference, Cheltenham 2014*
- 2014** ORAL PRESENTATION
S Gandham, O Malaga-Shaw, A Prasad, V Beckles, N Maruthainar
The Need For Orthopaedic Paediatric Referral Guidelines
Accepted for Seddon Society Regional Meeting 2014
- 2014** RESEARCH IN PROGRESS
V.Beckles, H. Sharma, Smith and Nephew
Heat generation within bone during fine wire ring external
Hull Royal Infirmary
- 2014** AUDIT
V.Beckles, S. Hislop, R. Dews, L. Mbundi, S. Gandham, N. Maruthainar, P. Ahrens
**Waiting times for emergency trauma patients since the introduction of Best
Practice Tariff for neck of femur patients?**
Royal Free Hospital
- 2013** ORAL PRESENTATION
**Clinical outcome of revision surgery for failed humeral head replacement
following shoulder trauma.**
V. Beckles, O. Uri, S. Lambert
EFORT, Istanbul, Turkey June 2013
- 2013** POSTER PRESENTATION
**Trauma in Trinidad: Driver upper limb 'arm-out-of-window' injury.
A case series.**
V. Beckles, C. Middleton, D. Saith, D. Roopnarinesingh, T. Seepaul
Seddon Society, Royal National Orthopaedic Hospital, Stanmore 2013
- 2013** ORAL PRESENTATION
Spinal Osteosarcoma: dismal past, any hope for the future?
R. Bhatia, V. Beckles, K. Rezajooi, K.Patel, Z. Fox, A.Casey
BASS 2013
- 2013** POSTER PRESENTATION
Implications of clinical coding accuracy in spinal surgery at a tertiary centre
V.Beckles, K.Patel, M.Nannaparaju, W. Yoon, D.Srikantarajah, R.Lee, K.Rezajooi
BASS 2013

RESEARCH, AUDIT AND PRESENTATIONS continued

- 2013** ORAL PRESENTATION
**Tuberculosis of the cervical spine (C-spine). An eight-year experience and
analysis of 18 cases in Malawi.**
BASS 2013

V.Beckles, M.Nannaparaju, W. Yoon, K.Patel, E. Kafrida, N. Mkandawire

- 2012** ORAL PRESENTATION
The challenge of salvage after the failed Latarjet procedure for recurrent shoulder instability – a preliminary report
Salzburger Schulterforum December 2012
S.Lambert, V.Beckles, O. Uri
- 2012** ORAL PRESENTATION
Custom CAD/CAM shoulder replacement for the treatment of failed reverse total shoulder arthroplasty, Israeli Orthopaedic Association 32nd Meeting December 2012
O. Uri, V. Beckles, S. Lambert
- 2010** POSTER PRESENTATION
Efficiency testing of a new mobility aid for paediatric single lower limb amputees in Malawi. HAC 25 conference, Furlong, London
V. Beckles, J. Stebbins, J. McCahill, N. Mkandawire , J. Church, C. Lavy
- 2010** ORAL PRESENTATION
Chronic Haematogenous Osteomyelitis. BCIH Classification system & prospective trial.
Instructional Session, WOC, Combined Orthopaedic Association Meeting, Glasgow
V.Beckles, W.J. Harrison
- 2010** ORAL PRESENTATION
Open fractures at Queens Hospital 2007-2009. Can we BOAST?
Seddon Society, RNOH, Stanmore
V. Beckles, C. Middleton, I. Basu, N. Reed, A. Ali
- 2009** ORAL PRESENTATION
Efficiency of the African Disability Scooter WOC section, BOA
V. Beckles, J. Stebbins, J. McCahill, C. Lavy
- 2009** POSTER PRESENTATION
Content comparison of patient-reported outcomes (PROs) for children with musculoskeletal impairments
ISOQOL Conference, USA
Y. Alavi, S. Smith, D. Lamping, C. Gorecki, V. Beckles, S. Hartley, C. Lavy
- 2009** ORAL PRESENTATION
Chronic haematogenous osteomyelitis in 167 children in Malawi. Surgical Symposium, Blantyre, Malawi
V. Beckles, W.J.Harrison
- 2008** AUDIT
Are our Distal Radius Fracture Patients Being Referred for DEXA Scans? Closing the audit loop. Lightowler Meeting, Basildon Hospital, Essex
V. Beckles, R. Wakeman, R. Grewal
- 2006** POSTER PRESENTATION
SHOULD OUR MANAGEMENT OF THE ACUTELY LOCKED KNEE CHANGE? BASK
V. Beckles, P. Rust, V. Simms, D. Spicer

TEACHING

- 2014 **Fourth Year Lecturer**, Medical Students, Royal Free Hospital
- 2013 **Faculty**, AO ORP Course, Beit Cure International Hospital, Blantyre, Malawi
- 2013 **Fourth Year Lecturer**, Medical Students, Barts and the London Medical School
- 2013 **SHO Teaching**, Royal London Hospital
- 2013 **Faculty**, FRCS Tr & Orth Basics Sciences Course, Stanmore
- 2012 **Faculty**, Smith & Nephew Taylor Spatial Frame, Kings College Hospital, London
- 2012 **Faculty**, Queens FRCS Tr & Orth Revision Course
- 2012 **Faculty**, Basic Sciences for FRCS Tr & Orth, Orthopaedic Research UK
- 2012 **Faculty**, 1st Ponseti Study day, Queens Hospital, Romford
- 2011 **SHO Teaching**, North Middlesex Hospital, London
- 2010 **Malawi Orthopaedic Association** Orthopaedic Clinical officer training
- 2010 **Lecturer and Table demonstrator**, AO ORP training course, Blantyre, Malawi
- 2008-9 **Final year MBBS examiner**, Surgical OSCE, College of Medicine, Malawi
- 2008 **Faculty**, AO ORP Course, Beit Cure International Hospital, Blantyre, Malawi
- 2008 **Anatomy Demonstrator**, 1st year MBBS students, College of Medicine, Malawi
- 2008 **Seminar Leader**, 5th year MBBS students, Community Surgery Program, COM, Malawi
- 2008 **3rd year MBBS OSCE Examiner** College of Medicine, Blantyre, Malawi
- 2007-8 **MBBS Finals Revision Course**, Basildon & Thurrock University Hospitals, Essex
- 2007 **OSCE Examiner MBBS Finals Revision Course**, Royal Society of Medicine, London
- 2006 **MBBS Finals Revision Course**, Barnet Hospital, Herts
- 2006 **Basic Surgical Skills Course**, Barnet Hospital, Herts

POSITIONS OF RESPONSIBILITY AND RECREATIONAL ACTIVITIES

I enjoy singing and cycling socially. I preach and currently lead the children and youth ministry in my local church.

I have been orthopaedic “topslot” responsible for co-ordinating consultant and registrar level rotas at the Royal London from August 4th- 19th, 2013. In terms of the volume of trauma in this department, it gave me an invaluable insight into safe staffing levels and the administration that it takes to run this busy team.

I am a Trustee for a charity called CURE International UK which specialises in surgical care for the world’s poorest. I am a reviewer for Bone & Joint Surgery (*formerly JBJS (UK)*). I have reviewed the website content (2013) for the “Drink and driving” page for the Road Safety Observatory (ROSPA UK).

I am also a judge for the Prince Michael International Road Safety Awards and I am a trustee with Global NCAP – a charity which assesses new car crashworthiness and safety globally.

REFEREES

Mr N. Maruthainar

Consultant Trauma and Orthopaedic Surgeon
Royal Free Hospital
Hampstead, London
NW3 2QG
Nimalan.maruthainar@nhs.net

Mr Matthew Barry

Consultant Trauma and Limb Reconstruction Surgeon
Royal London Hospital
Whitechapel
E1 1BB

Matthew.Barry@bartshealth.nhs.uk

Mr Simon M. Lambert

Consultant Orthopaedic Surgeon
Royal National Orthopaedic Hospital
Brockley Hill
Stanmore HA7 4LP

slambert@nhs.net

Miss Deborah M. Eastwood

Consultant Orthopaedic Surgeon
Royal National Orthopaedic Hospital
Brockley Hill
Stanmore HA7 4LP

d.m.eastwood@btinternet.com

Professor W. Jim Harrison

Consultant Orthopaedic Surgeon
Countess of Chester Hospital
Liverpool Road, Chester
Cheshire, CH2 1UL

aojimh@gmail.com

Professor Chris B.D. Lavy

Professor of Orthopaedic Surgery
Nuffield Dept of Orthopaedic Surgery
Windmill Road
Headington, Oxford, OX3 7LD

christopher.lavy@ndos.ox.ac.uk