

3. Report for the Unit of Research in Mobility (Musculoskeletal Healthcare)

3.1 Introduction

3.1.1 Background

This Musculoskeletal Healthcare Research was initiated in October 2015 and continues to grow and develop.

The unit is led by Dawn Carnes and Paul Vaucher. Dawn Carnes is employed at 80% at the HEdS, her remaining 20% is spent as the director of the National Council of Osteopathic Research in the UK (www.ncor.org.uk). Paul Vaucher is employed at 75% with the remaining 25% at the CHUV.

In addition we employed two new members during the year: Katia Iglesias who joined us on September 1st 2017, she has been employed at 80% to help deliver the research modules, supervise students and contribute to the development of a joint teaching initiative with the School of Nursing and provide secretariat support to the HES R&D committee. Roy Macdonald was recruited in January 2017 at 50% for 6 months as a research assistant for the Osteo-Survey project and will continue to assist with some teaching and support with students in the School of Osteopathy.

Dawn Carnes completed her PhD at Barts and The London School of Medicine and Dentistry, Queen Mary University of London in 2006. Her research focuses on chronic musculoskeletal pain. She is involved in both quantitative and qualitative research. Dawn has a background in psychology, osteopathy, project management and health research. Since 2015, Dawn Carnes has worked as "Professeure spécialisée" at the School of Health Sciences Fribourg (University of Applied Sciences and Arts Western Switzerland - HES-SO) and her research currently focuses on the self-management of chronic musculoskeletal pain.

Paul Vaucher, a Swiss trained osteopath, has been working in research in general and community medicine since 2001. In 2006, he obtained a postgraduate master degree in clinical trials at the LSHTM before obtaining his PhD in neuroscience from the faculty of science of the university of Geneva. Since 2015, he is professor at the University of Applied Sciences Western Switzerland. His fields of interests are musculoskeletal care, complex interventions, behavioural changes, and ageing. His current research is focused on community out-of-home mobility.

Dawn and Paul have worked as a duo and their role has two remits: i) to establish a musculoskeletal research unit and ii) to embed research into the osteopathic education programme and continuing professional development.

Roy Macdonald was employed in early 2017 as a research assistant at 50% to work on the SwissOsteoSurvey project for six months. He has a Masters in osteopathy delivered by the British School of osteopathy (University College of Osteopathy) and is currently fulfilling his clinical training in Zurich as an assistant to obtain his CDS-GDK degree in Switzerland. His fields of interest are musculoskeletal disorders, chronic pain, and pain management programs. He has developed skills and expertise in running surveys and in using RedCap, an online research survey instrument.

Katia Iglesias has joined the unit in September 2017 as a lecturer and research collaborator. Trained in occupational psychology, Katia then obtained a postgraduate diploma in statistics and a PhD in psychology and science of education. She has worked as a statistician consultant for research at the university of Neuchatel, at the university

of Geneva, at the Centre of Clinical Epidemiology CHUV, and has been lecturing in statistics and methodology in both universities. Her fields of interest are statistics, well-being, and social integration.

3.1.2 Aims and objectives of unit

The Unit of Research in Mobility focuses on applied research in the field of musculoskeletal health and mobility. The unit's research aims to explore innovative solutions for maintaining and promoting musculoskeletal health and function and supporting individuals to optimise their engagement and interaction within the society and communities they live and work in.

The unit has 2 remits:

1. To deliver the research component of the BSc and MSc Osteopathy
2. To develop a portfolio of research.

3.2 Achievements

3.2.1 Teaching

BSc Osteopathy

The first cohort of 22 students successfully completed the theory module (30) and the research project module (36) during 2017.

Three students received first class awards for their research projects and one student manuscript has been submitted and approved for publication.

MSc Osteopathy

The research module was designed, the aims and learning objectives were set and content of individual modules prepared. The first cohort of 21 students received their formal teaching during semester one and have been allocated project supervisors to support them during the development and conduct of their projects.

Student supervision

Nine BSc research supervisors helped facilitate the students achieve their Bachelor degrees. A further six MSc project supervisors have been trained and are assisting the first MSc student cohort in the actualisation of their research.

3.2.2 Collaborations and networking

GerontoNet – PV initiated the creation of a network for researchers from the Department of Health working on ageing.

GerontoPole – PV contributes as a member of the group dedicated to gerontology in Fribourg.

Swiss Osteopathy Science Foundation – PV coordinating efforts in linking research to practice.

Swiss School of Public Health (ERSP). PV is involved in the pilot development of research e-learning material.

Swiss Federation of Osteopaths – Ongoing involvement to coordinate efforts in training members to create a network of osteopathic practitioners for future studies / organisation and delivery (DC PV).

COME collaboration – PV is involved in the European osteopathic collaboration project
I-CHaT – International panel of experts on Community Health and Transport – Initiation with HES-SO congress in collaboration with the EESP, leadership till 2018 (PV).

3.2.3 Research Projects 2015-2017

OsteoSurvey (completion Feb 2018): This is a survey of Swiss osteopaths to explore the role of osteopathy in the Swiss health care system and to describe osteopaths and their osteopathic practice. PV was principal investigator, DC advisor and RM research assistant.

Systematic review of manual therapy for the care of excessively distressed, unsettled and crying infants (completion March 2017): This review and meta-analyses explored the effectiveness of manual therapy for this group of infants. DC was principal investigator.

SwissPROMs (Pilot phase completion March 2018): This is a European Federation of Osteopaths funded study to establish a European database of information about patient reported outcomes after osteopathic care. DC is principal investigator.

MOCAM Study (Completion Dec 2017): This is a mixed methods study looking at the non-specific effects of treatment in complementary and allied health professionals, specifically, osteopaths, physiotherapists and acupuncturists. DC is a member of the study management group.

CHESS (completion 2019): This is a study looking at the treatment and care for chronic headaches. It involves developing an evidence intervention for the management of persistent headaches including those from medication overuse. DC is a co-applicant and member of the study management group.

I-WOTCH (completion 2018): This is a pragmatic randomised controlled trial looking at reducing opioid intake in those with chronic pain using a nurse and lay led self-management intervention with phased nurse led controlled medication reduction programme. DC is a co-applicant and member of the study management group.

TEAM trial (completion 2018): This is a randomised controlled trial looking at the effects of an anaesthetic and anti-inflammatory injection for achilles tendinopathy. DC is a member of the trial steering group.

MOBiLe initiative (initiated in 2014): This is a long term international initiative to develop and implement applicable efficient programs to facilitate age related driving cessation. PV is the initiative leader.

GARAge cohort (completion 2018): This is a longitudinal cohort study following 400 senior drivers to investigate predictors of driving cessation. PV is co-investigator.

MedDrive (completion end 2018): This is a software development program. MedDrive is a battery of neuropsychological tests that investigates functions required for spatial navigation. PV is the project leader.

PRECASIA trial (completion 2019): This is a randomised trial investigating effects of group interventions for preventing drink driving recidivism. PV is co-investigator.

IPTi Trial (until 2017): This is a nested cohort study within a large RCT to investigate the potential protective effect of anaemia on malaria infections in infants. PV is member of the study steering group.

MOVEBox (completion June 2018): Improving reliability of palpation using haptic feedback. PV is principal investigator.

PAuSES-D (completion 2019). This is a PEPA grant for exploring the use of students as caregivers to support training and learning. PV is a co-applicant.

SADYSM (completion May 2019): This is a SNF funded study about Psychometric properties of self-reported measures of problematic alcohol use (tests diagnostic). KI is principal investigator.

Health at work (completion date TBA): This is a joint project between HEdS and HEG. KI is key collaborator.

3.2.4 Funding applications

EULAR. Submitted Dec 2017. European PROMs project. DC Main applicant. Decision: pending

PePA. September 2017. Project PAuSES-D. PV co-applicant. Decision: approved for funding

Leenaards–big data. Submitted July 2017. REDIT project. PV co-applicant. Decision: pending

SNF. Submitted April 2017. The effectiveness of osteopathy for distressed, crying unsettled babies: A randomised controlled trial. Outcome: DC main applicant. Decision: rejected

H2020-MSCA-ITN-2017 Submitted Jan 2017. European EDRIVE project. PV Co-applicant. Decision: pending

Swiss Osteopathic Foundation (FSO). September 2016. Survey of Swiss Osteopathic practice. Status: Protocol submitted. Decision: approved for funding (DC, PV).

NRP 74 Jan 2016. Submitted Jan 2016: Reducing the mental health burden of living with chronic pain. Outcome: DC main applicant. Decision: rejected

SNF April 2016. Submitted April 2016. Reducing the mental health burden of living with chronic pain: a pragmatic randomised controlled trial. Outcome: DC main applicant. Decision: rejected.

3.2.5 Conferences and presentations

2016 (external)

An occupational perspective of mobility – Seminar and Think tank. Organisation, keynote speech and moderator of discussions. Lausanne. December 2016. Paul Vaucher
Institute of Osteopathy Convention. Keynote presentation and debate: Applying research to practice. Staines, UK. Nov 2015. Dawn Carnes

Brain Awareness Week. Keynote presentation: Le cerveau au Volant – Vieillesse et conduite - quand est-ce le bon moment d'envisager des moyens de transports alternatifs? Lausanne. March 16th 2016. Paul Vaucher

American Association of Osteopaths, DO-Touch.net. Keynote presentation: Overview of evidence of adverse events in manual therapies. Florida, USA. March 16th 2016. Dawn Carnes

British School of Osteopathy: OsteoMAP conference. Presentation: An evaluation of the OsteoMAP intervention. London, UK. April 2nd 2016. Dawn Carnes

Royal College of Physicians of Ireland – Masterclass Series. Keynote presentation. Research day: Health, mobility and road safety. Driving cessation and ageing – facilitating the transfer to becoming a non-driver. Dublin, Ireland. March 2016. Paul Vaucher

Swiss Health Professional Congress. Systematic review of prospective cohort studies on the safety of manual therapy. SUPSI, Lugano. Sept 1st2nd 2016. Dawn Carnes

Swiss Health Professional Congress. Self-management of chronic pain: A pragmatic randomised controlled trial. SUPSI, Lugano. Sept 1st2nd 2016. Dawn Carnes

Swiss Health Professional Congress. Workshop: Maintaining wellbeing, social participation in home dwelling older people. SUPSI, Lugano. Sept 1st 2016. Paul Vaucher

Osteopathic International Alliance. Research Pillar convenor, chair of the international osteopathic research network (IORN) and presentation on WHO collaboration. Los Angeles, USA. Sept 18-21st 2016. Dawn Carnes

ARTORG – Clinical application of body mounted sensors – Mini-workshop. Keynote presentation. Bern. November 2016. Paul Vaucher

Colloque de recherche – Hôpital de Lavigny: Évaluer l'aptitude à la conduite – mises en garde! Lavigny. March 17th 2016. Paul Vaucher

Colloque de Recherche Semestriel PMU. Prévenir la récurrence d'alcool au Volant. Lausanne, 11th April 2017. Paul Vaucher
Swiss Federation of Osteopaths AGM. Survey of Swiss Osteopaths. Berne, April 14th 2016. Paul Vaucher, Dawn Carnes

2017 (external)

Institute of Osteopathy. London. Presentation and Workshop: Dealing with Clinical Uncertainty. Presentation and Debate: New models of thinking and research. October 2017. DC

New Zealand, Australian Osteopathic Associations and Osteopathic International Alliance Joint conference. Auckland. Formal invitation to present and chair. Embedding research into education and practice. September 2017. DC

3rd European Veterinary Society for Osteopathy Congress. Lyon. Workshop organiser. Modulation de la perception du toucher en fonction du langage corporel lors de la triangulation thérapeutique. 23rd September 2017. PV

6^{ème} colloque du Réseau Santé Nord Broye. Yverdon-les Bains. Keynote speaker. Seniors, troubles cognitifs et conduite : nouveautés dans l'évaluation et la prise en charge. 21st September 2017. PV

3rd European Veterinary Society for Osteopathy Congress. Lyon. Keynote speaker. Emerging Osteopathic Challenges from the last 15 years of research – Beyond the somatic dysfunction. 22 September 2017. PV

International Conference for Advances in Osteopathic Research. Milan. Presentation: Concerns and complaints about osteopathic practice. Chair of sessions. April 2017. DC

National Council for Osteopathic Research. London. Presentations. Helping those with chronic pain help themselves. Convener (DC). January 2017. DC and PV

Société Genevoise des Ostéopathes. Genève. Keynote speech. Ostéopathie et rationalité scientifique. January 2017. PV

Colloque de Recherche Semestriel PMU. Lausanne. Voir ou conduire, il faut choisir! 24th April 2017. PV

3.2.6 Publications

Tomi, A., Carnes, D., Homer, K., Taylor, S., Eldridge, S., Underwood, M., Rahman, A., Foell, J., Spencer, A., & Hounsoume, N. (2018). The over-prescription of opioids for chronic musculoskeletal pain in UK primary care: results from a cohort analysis of the COPERS trial. *BMJ Open*, (in press).

Carnes, D., Sohanpal, R., Frostick, C., Hull, S., Mathur, R., Netuveli, G., Tong, J., Hutt, P., & Bertotti, M. (2017). The impact of a social prescribing service on patients in primary care: a mixed methods evaluation. *BMC Health Service Research*, 17(1), 835. doi: [10.1186/s12913-017-2778-y](https://doi.org/10.1186/s12913-017-2778-y)

Carnes, D., Plunkett, A., Ellwood, J., & Miles, C. (2018). Manual therapy for unsettled, distressed and excessively crying infants: a systematic review and meta-analyses. *BMJ Open*, 8(1). doi: [10.1136/bmjopen-2017-019040](https://doi.org/10.1136/bmjopen-2017-019040)

Bertotti, M., Frostick, C., Hutt, P., Sohanpal, R., & **Carnes, D.** (2017). A realist evaluation of social prescribing: an exploration into the context and mechanisms underpinning a pathway linking primary care with the voluntary sector. *Primary Health Care Research & Development*, 1-14. doi: [10.1017/S1463423617000706](https://doi.org/10.1017/S1463423617000706)

Williams, N. H., Jenkins, A., Goulden, N., Hoare, Z., Hughes, D. A., Wood, E., Foster, N. E., Walsh, D. A., **Carnes, D.**, Sparkes, V., Hay, E. M., Isaacs, J., Konstantinou, K., Morrissey, D., Karppinen, J., Genevay, S., & Wilkinson, C. (2017). Subcutaneous Injection of Adalimumab Trial compared with Control (SCIATiC): a randomised

controlled trial of adalimumab injection compared with placebo for patients receiving physiotherapy treatment for sciatica. *Health technology assessment (Winchester, England)*, 21(60), 1-180. doi: [10.3310/hta21600](https://doi.org/10.3310/hta21600)

Carnes, D., Mars, T., Plunkett, A., Nanke, L., & Abbey, H. (2017). A mixed methods evaluation of a third wave cognitive behavioural therapy and osteopathic treatment programme for chronic pain in primary care (OsteoMAP). *International Journal of Osteopathic Medicine*, 24, 12-17. doi: <https://doi.org/10.1016/j.ijosm.2017.03.005>

Carnes, D. (2016). What can osteopaths learn from concerns and complaints raised against them? A review of insurance and regulator reports. *International Journal of Osteopathic Medicine*, 22, 3-10. doi: <http://dx.doi.org/10.1016/j.ijosm.2016.07.002>

Bradbury, K., Al-Abbadey, M., **Carnes, D.**, Dimitrov, B. D., Eardley, S., Fawkes, C., Foster, J., Greville-Harris, M., Harvey, J. M., Leach, J., Lewith, G., MacPherson, H., Roberts, L., Parry, L., Yardley, L., & Bishop, F. L. (2016). Non-specific mechanisms in orthodox and CAM management of low back pain (MOCAM): theoretical framework and protocol for a prospective cohort study. *BMJ Open*, 6(5), e012209. doi: [10.1136/bmjopen-2016-012209](https://doi.org/10.1136/bmjopen-2016-012209)

Taylor, S. J., **Carnes, D.**, Homer, K., Kahan, B. C., Hounsome, N., Eldridge, S., Spencer, A., Pincus, T., Rahman, A., & Underwood, M. (2016). Novel Three-Day, Community-Based, Nonpharmacological Group Intervention for Chronic Musculoskeletal Pain (COPERS): A Randomised Clinical Trial. *PLoS Med*, 13(6), e1002040. doi: [10.1371/journal.pmed.1002040](https://doi.org/10.1371/journal.pmed.1002040)

Spreng, L., Favrat, B., Borruat, F.-X., & **Vaucher, P.** (2018). Cross-sectional study assessing the addition of contrast sensitivity to visual acuity when testing for fitness to drive. *BMJ Open*, 8:e018546. doi: [10.1136/bmjopen-2017-018546](https://doi.org/10.1136/bmjopen-2017-018546)

Lombardo, P., **Vaucher, P.**, Rarau, P., Mueller, I., Favrat, B., & Senn, N. (2017). Hemoglobin Levels and the Risk of Malaria in Papua New Guinean Infants: A Nested Cohort Study. *The American journal of tropical medicine and hygiene*, 97(6), 1770-1776. doi: [10.4269/ajtmh.17-0093](https://doi.org/10.4269/ajtmh.17-0093)

Troxler, R., Minoiu, C., **Vaucher, P.**, Michaud, K., Doenz, F., Ducrot, K., & Grabherr, S. (2018). The role of angiography in the congruence of cardiovascular measurements between autopsy and postmortem imaging. *International Journal of Legal Medicine*, 132(1), 249-262. doi: [10.1007/s00414-017-1652-0](https://doi.org/10.1007/s00414-017-1652-0)

Vaucher, P., Michiels, W., Joris Lambert, S., Favre, N., Perez, B., Baertschi, A., Favrat, B., & Gache, P. (2016). Benefits of short educational programmes in preventing drink-driving recidivism: A ten-year follow-up randomised controlled trial. *International Journal of Drug Policy*, 32, 70-76. doi: [10.1016/j.drugpo.2016.03.006](https://doi.org/10.1016/j.drugpo.2016.03.006)

Fasel, J. H. D., Uldin, T., **Vaucher, P.**, Beinemann, J., Stimec, B., & Schaller, K. (2016). Evaluating Preoperative Models: A Methodologic Contribution. *World Neurosurgery*, 89, 681-685. doi: <https://doi.org/10.1016/j.wneu.2015.12.006>

Vaucher, P. (2017). Fiabilité d'un test, d'une mesure ou d'une procédure d'évaluation (Reliability of tests, measures and evaluation procedures). *Mains libres*, 2, 49-55.

Vaucher, P. (2016). La valeur-p - savoir ou hasard? Un monde où le doute a sa place (The p-value – knowledge or fortuity? A world where doubt has its place). *Mains libres*, 4, 49-52.

Vaucher, P., & Favrat, B. (2016). Tackling Societal Challenges Related to Ageing and Transport Transition: An Introduction to Philosophical Principles of Causation Adapted to the Biopsychosocial Model. *Geriatrics*, 1(1), 3. doi: [10.3390/geriatrics1010003](https://doi.org/10.3390/geriatrics1010003)

Vaucher, P. (2016). Ostéopathie et rationalité scientifique : la place des tests dans le traitement ostéopathique (Questioning the rationality of clinical osteopathic tests: future perspectives for research). *Mains libres*, 1, 33-37.

3.3 Future

3.3.1 Teaching

The teaching programme will continue to expand. Module 30 will be spread over 3 years. During Year 1 students will receive lessons from module 30: The introduction to research, searching and reading scientific literature. During Year 2 they will receive lessons about research methodology and during Year 3 they will focus on statistics and principles of systematic reviewing and they will do their BSc project (Module 36).

Students who progress to the MSc programme will receive further training in research methods, ethics and project design and write 2 evidence informed clinical case studies and design and conduct a research project.

We expect around 30 students in each year. The major resource implications are in Year 3 of the BSc and Year 1 and 2 of the MSc for project supervision. At present we have 46 students (Year 3 BSc and Year 1 MSc). This will increase to around 70 students next year (BSc Year 3 and MSc Years 1 and 2).

E-learning initiatives will continue to be explored.

3.3.2 Research

Efforts to expand the portfolio of research will continue. However for the immediate future the unit will cease to target Swiss National Funds for conducting large pragmatic trials and focus on smaller projects and apply for grants from smaller funding streams. The rationale for this is to establish a good reputation for conducting smaller but high quality research projects that have an impact on care and patients. We hope that this will provide evidence to funders of our capability and improve confidence in the HEdS musculoskeletal health care research team.