European Working Time Directive

- FXR overexpression alleviates cholestasis via NLRC4 inflammasome suppression and bile acid homeostasis regulation
- Enhancing anthropogenic NMVOC emission speciation for European air quality modelling
- Modifications to the membrane filter method with phase-contrast microscopy (PCM) for fibre-counting to support a new occupational exposure limit value
- Advanced biomethane potential from local sources in Italy
- Representation of chemistry transport models simulations using knowledge graphs
- European harmonization of asbestos exposure assessment: comparing PCM, SEM, and TEM to derive conversion factors
- A bovine model of rhizomelic chondrodysplasia punctata caused by a deep intronic splicing variant in the GNPAT gene
- Application of a real-time reverse transcription polymerase chain reaction for rapid detection of Escherichia coli in drinking water: an EU representative study

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Ever-developing changes to the working time of junior doctors by the European Working Time Directive, the junior doctor contract of 2019 and most recently the COVID-19 pandemic have impacted the professional identity of doctors. There has been little investigation into its influence on the multifaceted aspects of postgraduate medical training, which feeds into how trainees consider themselves professionally and the concept of professional identity or 'being a doctor'. A review of the medical, socio-political and educational literature reveals that the impact on the professional identity development of trainees is influenced by several perspectives from the trainee, trainer and the public. Gross reduction in working hours has no doubt decreased the raw volume of clinical experiences. However, to counteract this, smarter learning processes have evolved, including narrative reflection, supervised learning events, and a greater awareness of coaching and training among trainers [1)].

European Working Time Directive in Neurosurgery

- VIEshunt: towards a ventricular intelligent and electromechanical shunt for hydrocephalus therapy
- The Future of Neurosurgical Training in the United Kingdom
- RESIDENT DUTY HOUR RESTRICTIONS IN NEUROSURGERY: WHAT CAN WE LEARN IN ISRAEL FROM THE NORTH AMERICAN AND EUROPEAN EXPERIENCE?
- Factors relating to working hours restriction that have impacted the professional identity of trainees in the last decade
- Neurosurgical procedures performed during residency in Europe-preliminary numbers and time trends
- Ophthalmology specialist trainee survey in the United Kingdom
- Optic nerve thinning and neurosensory retinal degeneration in the rTg4510 mouse model of frontotemporal dementia
- The evolution of British neurosurgical selection and training over the past decade

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The National Health Service faces substantial challenges with staffing in the face of administrative turbulence just after a global pandemic resulting in significant economic losses. This staffing crisis extends to neurosurgical training with pervasive problems with the balance between trainees and consultants. In the face of Brexit, after the impact of the European Working Time Directive, these challenges provide an opportunity to explore possible solutions to improving training and staff retention. The recommended solutions include ensuring appropriate workforce planning and using novel (and already available) resources to revamp the structure of neurosurgery training and improving the attainment of surgical competence and staff retention. Creating a sustainable neurosurgery training program to adequately fill gaps in the National Health Service will require long-term solutions and the commitment of multiple stakeholders. The first step to achieving these goals would be to maximize the available opportunities to allow trainees maximize training time to become competent day-one consultants [2)].

Due to the European Working Time Directive (EWTD) and a new collective agreement for doctors working at University hospitals in 2006 new shift models had to be designed in the Department of Neurosurgery of the University Hospital Tübingen, Germany. The aim of the study was to show the fit of the models regarding the average weekly working time limits (aWTL), the daily maximum of 10-h working time (10-h dWT), and the staff expenditures 3 years after implementation.

Methods: The new shift model was implemented in 2008, and hence planning and documentation were done electronically. Adherence to the work schedules was measured, and aWTL adherence rates were compared. The relative number of 10-h dWT violations in 2009 and 2010 was analysed. Staff costs relative to performance before and after implementation were calculated and tested using analysis of variance (ANOVA). Four other departments without alteration of shift models served as a control group in cost trend analysis.

Results: In 2010 all doctors in the Department of Neurosurgery were able to stay within the limit of 54 h/week; one doctor without opt-out exceeded the 48 h/week limit (50.1 h/week). The median per capita rate of 10-h dWT violations in 2009 was 20.3 % of all eligible working days and further declined to 10.7 % in 2010 ($p < 0.001$). Staff costs per case-weight point did not change significantly (2007: 339.88€, 2009: 307.99€, 2010: 322.54€; $p = 0.22$) in neurosurgery or in the control group (2007: 633.72€, 2009: 637.06€, 2010: 690.30€; $p = 0.67$).

Conclusions: After implementation of the new shift model, current monitoring and properly matching modifications led to long-term stability in complying with the EWTD regulations without increasing costs for staff expenditures [3)]

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1)
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2)
Ogbu II, Kaliaperumal C. The Future of Neurosurgical Training in the United Kingdom. World Neurosurg. 2022 Dec;168:89-93. doi: 10.1016/j.wneu.2022.09.038. Epub 2022 Sep 14. PMID: 36113712.
3)
Maschmann J, Holderried M, Blumenstock G, Bamberg M, Rieger MA, Tatagiba M, Roser F. New shift models for doctors in a large German University Neurosurgery Department: how they comply with the

European Working Time Directive 3 years after implementation. Acta Neurochir (Wien). 2012 Oct;154(10):1935-40. doi: 10.1007/s00701-012-1405-2. Epub 2012 Jun 12. PMID: 22688611.