

**Methods** Thirty semi-structured interviews were conducted with healthcare professionals involved in delivering hip fracture care at four hospitals across England. Staff were purposively sampled from across the care pathway, and comprised emergency department staff, orthogeriatricians, orthopaedic surgeons, physiotherapists and discharge coordinators. Data were analysed thematically and themes transposed onto constructs from eNPT.

**Results** The *capacity* of healthcare professionals to co-operate and co-ordinate their practice was achieved using formal mechanisms including shared information systems, multi-disciplinary team (MDT) meetings and integrated MDT documentation and protocols. Trauma coordinators organised important processes of care and facilitated MDT co-working. Transfer of patient information was compromised when these systems were not effectively implemented. Shared working spaces promoted frequent and spontaneous communication. Individual *potential* and commitment to operationalise services occurred through multiple processes. Training, mentoring and support for junior staff, particularly rotating doctors, helped their engagement in patient care. Shared commitment was undermined by complex dynamics between different professional groups, particularly medical and surgical staff. Clinical leads bridged these professional boundaries and promoted shared patient goals. *Capability* to deliver care was compromised by under-staffed and under-resourced services, including lack of geriatric and therapist input, particularly out-of-hours and at weekends, and lack of bed capacity. Staff identified strategies to mobilise existing resources including ‘upskilling’ of staff, effective prioritisation of patients and systems to track outlying patients on other wards. Bringing patients together on specialist wards enhanced workability by concentrating staff knowledge and expertise. Healthcare professionals made *contribution* by driving change and developing services through MDT meetings and consistent monitoring and auditing. Clinical leads were integral to service development by disseminating audit data, engendering enthusiasm and engaging staff from individual directorates. Ongoing development was shaped by executive support. Benchmarking services based on key performance indicators and linking clinical activity to funding mechanisms helped leverage executive support.

**Conclusion** Findings identify elements needed to implement hip fracture services successfully. Information will assist services in overcoming organisational barriers when implementing sustainable high-quality services to improve patient care.

Friday 17 September

Physical Activity, 09.00 – 11.30

OP49

**IMPACTS OF THE PARIS CYCLING LANE EXPANSION PLAN ON CYCLING LEVELS: A NATURAL EXPERIMENTAL STUDY\***

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**Background** Cities globally have started to seriously invest in more sustainable forms of transportation. Using routinely collected city-level data, we aimed to evaluate whether constructing new cycling infrastructure as part of the Paris Cycling

Lane Expansion Plan 2015–2020 affects cycling activity along new routes.

**Methods** Daily cycle count data from January 2018 to March 2020 were acquired for the city of Paris. Eight newly-built cycling infrastructure improvement projects were identified with pre-post data. Comparison streets were chosen if pre-intervention trends in cycling paralleled those at the intervention sites. Since data collection periods for each street were variable, several comparison streets were chosen for each site as follows: (A) one street for which monitoring data were available for the same one-year period as the intervention street, (B) one street that shared the same six-month pre- and post-monitoring periods as the intervention street. For streets without a full year of data (n=3), all available data were used. The average of all control streets for each method was calculated as an additional comparator. Difference-in-difference (DiD) analysis controlling for a public transportation strike during the study period was performed for all streets. In addition, for streets with at least one year of data, interrupted time series (ITS) analysis was conducted to corroborate DiD results.

**Results** There was some variation in effects between locations: significant net increases in cycling counts were observed in 4/8 streets (e.g. Boulevard Voltaire, Method A: 894 counts/day; 95% CI: 357, 1431). No significant effects were found for Rue Julia Bartet or streets assessed for only one month post-intervention (3/8). In general, DiD outcomes did not differ between methods for choosing control groups. However, comparisons with individually-matched control streets tended to have greater positive net effect sizes than those using the average of control streets, which were more likely to support the null hypothesis. In general, the ITS results corroborated DiD results in terms of direction of effect, but none of the ITS results besides the level and trend change for the strike were significant.

**Discussion** Infrastructural improvements were found to be effective for larger arterial streets and those with longer follow-up periods. The use of multiple control streets as well as ITS analysis lends weight to our findings. Further research should investigate why improvements were more effective at increasing cycling levels in certain streets than in others.

OP50

**PUSH AND/OR PULL: A SYSTEMATIC REVIEW AND META-ANALYSIS OF STUDIES EVALUATING THE EFFECTIVENESS OF ‘CARROT’, ‘STICK’, AND COMBINED INTERVENTIONS ON MODIFYING TRAVEL BEHAVIOUR**

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**Background** While active travel policies may positively affect health and the environment, evidence suggests small or inconsistent effects in these policies in changing travel behaviour. To identify which types of interventions are more effective, this systematic review and meta-analysis aims to (1) compare the effectiveness of positive (‘carrot’) strategies, negative (‘stick’) strategies, or a combination of the two on modifying travel behaviour and (2) assess which functions have greater impacts on travel outcomes.

**Methods** Nine databases were searched for controlled before-and-after studies of population-level interventions and travel