Institution: Kingston University		
Unit of Assessment: 3 – Allied Health Professions, Dentistry, Nursing and Pharmacy		
Title of case study: Enabling people to ESCAPE-pain from Osteoarthritis		
Period when the underpinning research was undertaken: 2010 – 2019		
Details of staff conducting the underpinning research from the submitting unit:		
Names:	**Roles:**	**Periods employed by submitting HEI:**
Michael Hurley	Professor of Rehabilitation Sciences	Oct 2010 – present
Annette Boaz	Professor of Health Care Research	Jan 2013 – Dec 2020
Period when the claimed impact occurred: Aug 2013 – 2020		
Is this case study continued from a case study submitted in 2014? N		

1. Summary of the impact

Osteoarthritis (OA) affects about 9,000,000 people in the UK and is one of the largest causes of pain, disability, healthcare expenditure and lost productivity. The rehabilitation programme developed by Prof Hurley, ESCAPE-pain, addresses these problems by promoting self-management and healthy lifestyle coaching. Due to its effectiveness, demonstrated in research by Prof Hurley and his colleagues, ESCAPE-pain has changed health policy, and is endorsed by several government bodies (NHSE, PHE, NICE). ESCAPE-pain is currently delivered in more than 200 centres across the UK by over 1200 facilitators**.** 19,300 people have undertaken ESCAPE-pain, leading to significant health improvements and modelled healthcare savings of approximately GBP30,000,000.

2. Underpinning research

Osteoarthritis (OA) is a major cause of pain and impaired mobility, with adverse effects on physical, mental and emotional wellbeing and quality of life. Annually in the UK, OA accounts for 2,000,000 GP consultations, 130,000 knee/hip replacements, the third largest NHS expenditure, and 31,000,000 lost working days. Total health and societal costs are approximately GBP3.2bn/year, approximately 1.5% of GDP. The personal and socioeconomic impact of OA will increase as more people live longer. By 2030 almost 17,000,000 people will have OA.

Prof Hurley's research addresses this vital issue. Since joining Kingston University in October 2010, he has focused on the ongoing development and implementation of a pain self-management tool for arthritic pain. This is the ESCAPE-pain programme (Enabling Self-Management and Coping of Arthritic Pain through Exercise), which he started to develop while at Kings College London. ESCAPE-pain is delivered as two classes per week over six weeks (12 classes total). They are led by a facilitator and have 8-10 participants. Each session starts with a short discussion followed by a 40-minute circuit session, supervised by a physiotherapist.

His research enables health and social care systems to provide many more people with access to better care for chronic joint pain while reducing costs. Prof Hurley's appointment at Kingston University's Joint Faculty enabled him to explore new applications of his pain management research and cultivate its evidence base in collaboration with other Kingston Allied Health academics, notably Prof Boaz. Prof Hurley's work at Kingston has been focused on expanding and adapting this programme, specifically for use in knee/ hip and lower back pain, in non-clinical settings, as well as establishing a robust longitudinal evidence base.

Using that evidence base, Prof Hurley's research demonstrates that participants completing ESCAPE-pain report less pain, better mobility, better physical and mental wellbeing and quality of life, as well as fewer healthcare consultations, investigations and interventions. Participants completing the programme describe positive experiences of ESCAPE-pain, which increases

their ability to self-manage their problems. Long-term follow-up showed these benefits were sustained for up to 2½ years **[R1]**.
Collaborative partnerships with clinicians, commissioners, policy makers and professional organisations have enabled Profs Hurley and Boaz and their research colleagues at Kingston to spread the programme. ESCAPE-pain is now delivered in 135 clinical departments across the UK, providing a model for developing and sustaining an evidence-based pain intervention programme. **[R2]**.
However, given the many millions of people with OA and limited NHS facilities and staff, hospital-based rehabilitation is very restricted. To address these limitations Profs Hurley and Boaz conducted a study funded by Sport England and Versus Arthritis to deliver ESCAPE-pain into community and leisure venues using trained fitness instructors **[R3]**. Results show the clinical outcomes and wider benefits (improved psychosocial wellbeing, reduced social isolation, sustained participation in physical activity) can be replicated outside of hospital settings. The programme is now delivered in 160 leisure/community venues across the UK.
To facilitate access to ESCAPE-pain for people who cannot attend a face-to-face programme Prof Hurley and his research team developed a smartphone app and online programme using data generated from programme participants **[R4]**. The ESCAPE-pain programme has also been adapted for people with chronic low back pain **[R5]**. It will be rolled out across the UK to patients following lumbar surgery.

3. References to the research

R1 – **Hurley M**, Walsh N, Mitchell H, Nicholas J, Patel A. Long-term outcomes and costs of an integrated rehabilitation program for chronic knee pain: A pragmatic, cluster randomized, controlled trial. 2012. Arthritis Care and Research 64:238-247. DOI: 10.1002/acr.20642

R2 – Walker A, **Boaz A**, **Hurley MV**. The role of leadership in implementing and sustaining an evidence-based intervention for osteoarthritis (ESCAPE-pain) in NHS physiotherapy services: A qualitative case study. Disability and Rehabilitation. 2020. DOI: 10.1080/09638288.2020.1803997

R3 – Walker A, **Boaz A**, Gibney A, Zambelli Z, **Hurley M**. Scaling-up an evidence-based intervention for osteoarthritis in real world settings: A pragmatic evaluation using the RE-AIM framework. Implementation Science Communications. 2020. 1:40. DOI: 10.1186/s43058-020-00032-6

R4 – Pearson J, Walsh N, Carter D, Koskela S, **Hurley M**. Developing a Web-Based Version of An Exercise-Based Rehabilitation Program for People With Chronic Knee and Hip Pain: A Mixed Methods Study. JMIR Research Protocols 2016. 5(2): DOI: 10.2196/resprot.5446 REF2ID: 03-09801874

R5 – Walsh N, Jones L, Phillips S, Thomas R, Odondi L, Palmer S, Cramp F, Pollock J**, Hurley M**. Facilitating Activity and Self-management for people with Arthritic knee, hip or lower back pain (FASA): a cluster randomised controlled trial of clinical effectiveness. Musculoskeletal Science and Practice. 2020:50:102271. DOI: 10.1016/j.msksp.2020.102271

4. Details of the impact

The usefulness of Prof Hurley's research has been widely recognised. In 2014 the Health Innovation Network (HIN) identified ESCAPE-pain as an evidence-based intervention that could improve the care of older people with chronic joint pain. Professor Hurley was seconded to HIN as a Musculoskeletal (MSK) Clinical Director to implement ESCAPE-pain across the UK, with impacts on healthcare delivery and healthcare policy in the UK and beyond.

Impact on care, delivery and outcomes

- **Health impact:** 19,300 people have benefited from ESCAPE-pain, with users reporting less pain, better physical and psychosocial wellbeing and quality of life **[S1]**.

- **Economic impact:** An internal economic evaluation estimates that ESCAPE-pain reduces health and social care costs by approximately GBP 1500/participant: extrapolating from these estimates, ESCAPE-pain has saved the healthcare system and patients approximately GBP 30,000,000. A Public Health England report concluded the programme was one of only four MSK interventions with a positive return on investment (ROI GBP 5.20 for every 1 spent), and said ESCAPE-pain was a *"…preferred intervention for musculoskeletal management…"* **[S2]**.

- **Professional and workforce impact:** As of July 2020, ESCAPE-pain was being delivered in 294 venues across the UK.
  - Training programmes have been developed that enable healthcare and exercise professionals to deliver ESCAPE-pain in clinical, leisure and community venues. Over 1300 facilitators have now been trained: 820+ physiotherapists and 480+ exercise professionals. The training programme won UKActive's 'Specialist Training Programme of 2019'. The programme also allows leisure providers to generate revenue, enabling them to sustain the model.
  - An independent evaluation by the York Economic Health Consortium estimated that delivering the programme in leisure/community venues increased the return on investment to GBP1:GBP8.80. East Riding Clinical Commissioning Group have contracted East Riding Leisure to deliver ESCAPE-pain to 800 people annually **[S3]**.
  - ESCAPE-pain has helped to foster an evidence-based culture in physiotherapy and in the wider allied health community. The NIHR Dissemination Centre's review '*Moving Forward*' used ESCAPE-pain as a case-study **[S4]**. The Assistant Director of the Chartered Society of Physiotherapy, described ESCAPE-pain as 'an invaluable, unique case study in Moving Forward because of its evidence base… The review has had a tremendous impact and has given physiotherapists a clear understanding of what evidence-based practice means [and] how it underpins patient care' **[S5]**. ESCAPE-pain was also featured as a case study in the Richmond Group's 'Doing the Right Thing' and UK Active's 'Re-imagining Ageing'.
  - The programme received Best Practice awards from the British Society of Rheumatology (2016) and Royal Society of Public Health (2015).
  - Prof Hurley has been approached by healthcare providers in Spain, Greece, Argentina, Portugal, Cyprus and Bermuda to train physiotherapists to deliver ESCAPE-pain internationally. He is collaborating with University of West Attica, Athens to adapt the app for the Greek population and to deliver the programme in Greece.

Impact on Health Policy

The ESCAPE-pain app and online programme are the only Allied Health resources recommended for national implementation in the 2019 NHS Long Term Plan. Additionally, ESCAPE-pain has been included in the following NHS and government policy guidelines **[S6]**:

- NICE Osteoarthritis management guidelines (2014)
- NICE's Quality Innovation Productivity and Prevention (QIPP) (2013) The document notes that *'…Evidence for the feasibility, ease of implementation and sustainability of the programme is shown by the sustained implementation of the programme, its geographical spread and continued engagement between clinicians, patients and the research team. The utility of the approach is highlighted by its adaptation for people with hip and back pain.'*
- RightCare's Commissioning for Value: Long Term Conditions Pack (2017)
- NHS England's 2018 'Evidence-Based Interventions: Guidance for Clinical Commissioning Groups'.
- Public Health England recommend ESCAPE-pain in 'Musculoskeletal Health: applying All Our Health' (2019) **[S7]**.

ESCAPE-pain has been adopted for national rollout through the NHS-funded Academic Health Science Networks and the Innovation Accelerator. During the Coronavirus pandemic NHSE promoted ESCAPE-pain's digital resources to help people remain active during lockdown. ESCAPE-pain users increased from 1143 in March 2020 to 3310 in mid-August 2020, a growth of 190%. The British Orthopaedic Association have also recommended the ESCAPE-pain app to people whose surgery has been delayed due to Covid-19.

Versus Arthritis, the UK's largest Arthritis charity, have invested in the spread of ESCAPE-pain, and recommend it for 'Providing physical activity interventions for people with musculoskeletal conditions' **[S8]**. The CEO of Versus Arthritis also highlighted the campaigning and agenda-setting value of the organisation's involvement with the programme, notably:

- 'Raising the profile of MSK health and the needs of people with MSK conditions among decision makers locally and nationally'
- 'Changing perceptions about what can and should be done for people with arthritis and musculoskeletal problems, putting evidence into practice'.
- 'Consolidating the idea in national policy and health strategy that physical activity is a critical intervention to improve musculoskeletal health and improve symptoms including pain; and so building links between Versus Arthritis and Sport England, helping lead to further collaboration' **[S1]**.

Impact on wider implementation of healthcare interventions

The lessons learned from spreading a complex healthcare intervention such as ESCAPE-pain have been used to foster good practice in the NHS. ESCAPE-pain's journey to implementation has been included as a case study in the 2018 NHS Innovation Accelerator report *'Understanding how and why the NHS adopts innovation'* **[S9]**, and the 2018 Kings Fund report *'Adoption and spread of innovation in the NHS'* **[S10]**.

In September 2020 ESCAPE-pain won the Health Service Journal Musculoskeletal Care Initiative of the Year. The panel of judges said ESCAPE-pain was an 'excellent initiative…The team demonstrated great overall cost saving benefits to the system in terms of total and social health, and the overall ambition to improve general health, fitness and wellbeing was commendable'.

5. Sources to corroborate the impact

S1 – Testimonial from the CEO of Versus Arthritis

S2 – Public Health England "Musculoskeletal conditions: return on investment tool" 2017.

S3 – York Economic Health Consortium, NHS Innovation Accelerator Economic Evaluation Case Study: ESCAPE-pain

S4 – NIHR Dissemination Centre's themed review of musculoskeletal recommendations 'Moving Forward' 2018.

S5 – Testimonial from Assistant Director, Chartered Society of Physiotherapy.

S6 – NHS documents recommending ESCAPE-pain:
- NHS England "Long Term Plan" 2019.
- NICE Guidelines Osteoarthritis: care and management Clinical guideline [CG177] (Feb 2014) Overview | Osteoarthritis: care and management | Guidance | NICE

- NICE Quality, Innovation, Productivity and Prevention Evidence Collection. "Self management for chronic knee pain: using group physiotherapy to teach exercises and coping strategies". 2013. QIPP Ref 12/0011
- RightCare "Commissioning for Long Term Conditions Pack" 2016.
- NHS England "Evidence based interventions guidance for Clinical Commissioning Groups" 2018.

S7 – Public Health England 'Musculoskeletal Health: applying All Our Health' 2019.

S8 – Versus Arthritis, NHS England, Public Health England and Department of Health and Social Care 2017 'Providing physical activity interventions for people with musculoskeletal conditions'

S9 – NHS Innovation Accelerator *'Understanding how and why the NHS adopts innovation'*

S10 – The Kings Fund 'Adoption and spread of innovation in the NHS' 2018.