Institution:		
Sheffield Hallam University		
Unit of Assessment:		
UOA24 - Sport and Exercise Sciences, Leisure and Tourism		
Title of case study:		
Placing Physical Activity at the Heart of the NHS: Co-locating Healthcare and Physical Activity Services within Bespoke Facilities in Economically Disadvantaged Communities		
Period when the underpinning research was undertaken:		
2014 - 2019		
Details of staff conducting the underpinning research from the submitting unit:		
Name(s):	**Role(s) (e.g. job title):**	**Period(s) employed by submitting HEI:**
Rob Copeland	Director	04/03/02 - present
Jeff Breckon	Head of Research	05/01/04 - present
Helen Humphreys (née Speake)	Researcher	26/10/16 - present
Anna Lowe	Associate Professor	25/09/06 - 31/08/16 & 24/11/18 - present
Sarah Scott	Researcher	04/02/13 - 02/10/15
Steve Haake	Professor	01/03/06 - present
Ben Heller	Associate Professor	01/03/06 - present
Period when the claimed impact occurred:		
2015 - 2020		
Is this case study continued from a case study submitted in 2014?		
No		

1. Summary of the impact

Research at the National Centre for Sport and Exercise Medicine (NCSEM), Sheffield Hallam University, led to a new model of NHS service provision, bringing physical activity and NHS services closer together by co-locating them in leisure facilities across three economically disadvantaged communities. This new model of care now benefits more than 100,000 patients a year, along with over 150 NHS staff operating at these sites. The model has had wider impacts across Sheffield NHS Trusts and commissioning groups, improving staff and patient experience and service efficiency. Leisure centre providers have increased footfall by 82%, as well as expanded memberships, leading to new jobs and business opportunities. Research-informed redevelopment of Sheffield's leisure estate resulted in the city benefiting from £14 million of investment in facilities. UKactive, Sport England and others have subsequently used the co-location model in their advocacy work, which has also informed policy internationally. During the 2020 Covid-19 lockdown, the co-location scheme enabled patients to attend appointments outside hospital settings, significantly reducing waiting times.

2. Underpinning research

Context and challenge: The promotion of physical activity by the NHS is the focus of multiple strategies to reduce the burden of non-communicable diseases. NCSEM research shows that even small increases in physical activity can have substantial health benefits for those who are least active. Patients with chronic health conditions, however, rarely maintain recommended physical activity regimes, which suggests that existing physical activity programmes, promoted via traditional healthcare settings, such as hospitals or GP surgeries, might not meet the needs of patients. Furthermore, referral to physical activity from traditional healthcare settings has also shown to be ineffective (NICE guideline PH54).

How we addressed the challenge: Sheffield is home to one of three hubs that make up the NCSEM, an Olympic legacy project that aims to apply world class research to the development of policies and practice, to improve the health and wellbeing of the nation through sport, exercise and physical activity. NCSEM Sheffield is focused on whole-system approaches to increase physical activity across the population. The NCSEM research hub is based in the Advanced

Wellbeing Research Centre (AWRC) in Sheffield. The lead researcher for this body of work is Professor Robert Copeland, Director of NCSEM and AWRC, supported by several colleagues at Sheffield Hallam. Researchers from the University of Sheffield, University of Leeds, South London and Maudsley NHS Foundation Trust, Sheffield Teaching Hospitals NHS Trust and Sloan Medical Centre (a large GP practice) were involved in the research, with Sheffield Hallam leading all projects.

Underpinning studies and research: Copeland and colleagues carried out a qualitative study using semi-structured interviews with adults with chronic health conditions. The findings revealed that factors playing a major role in physical activity maintenance include environmental factors that facilitate access, and congruence between outcome and expectations. Managing these was also shown to be a key factor in encouraging exercise maintenance. [**R1**]

A study examining the characteristics of the least active communities used a longitudinal observational dataset, the 'South Yorkshire Cohort', to identify predictors for the lowest levels of physical activity. Findings showed that people with chronic mental and physical health conditions were the most likely to report the lowest levels of physical activity, indicating that targeting these groups specifically (e.g. by improving access to services) has the potential to reduce the impact of physical inactivity. This could be by changing the healthcare environment to make it easier for physical activity to be part of NHS care pathways. [**R2**]

A further study involving participants with stable conditions such as type 2 diabetes examined the efficacy of motivational interviewing and cognitive-behavioural intervention for promoting long-term physical activity. This highlighted the value of brief and frequent contacts between provider and client in terms of intervention adherence. Co-location of services could enhance the frequency and quality of these change-based conversations. [**R3**]

The Sheffield Hallam team set about developing a theory of change for co-locating NHS clinics within leisure centres, to place physical activity at the heart of the NHS. Using a realist approach, the theoretical framework aimed to explain the mechanism and determinants of change of the co-location model pioneered by NCSEM. [**R4**]

A parallel study examined the way in which health systems can work in collaboration with other partners to develop environments and systems that promote active lives for patients and staff. Exploring the value of systems thinking, this research identified that a top-down approach focusing on individual-level behaviour change is insufficient to shift population outcomes for physical activity. Instead, a whole-system, multi-disciplinary approach is required, including the purposive redesign of environments to encourage and facilitate physical activity. [**R5**]

A qualitative enquiry into the attitudes of patients and health care professionals to physical activity revealed tensions between the needs and aspirations of patients, and the reality of delivering advice and support for physical activity in a traditional health setting. This demonstrated a need for sharing good practice across healthcare services and system-level interventions (such as co-location of services) to address organisational barriers to the promotion of physical activity. [**R6**]

3. References to the research

R1. Scott SE, Breckon JD, Copeland RJ, Hutchison A (2015). Determinants and Strategies for Physical Activity Maintenance in Chronic Health Conditions: A Qualitative Study. *Journal of Physical Activity and Health*. 12(5):733-40. https://doi.org/10.1123/jpah.2013-0286

R2. Everson-Hock ES, Green MA, Goyder EC, Copeland RJ, Till SH, Heller B, Hart O (2016). Reducing the Impact of Physical Inactivity: Evidence to Support the Case for Targeting People with Chronic Mental and Physical Conditions. *Journal of Public Health*. 38(2):343-51. https://doi.org/10.1093/pubmed/fdv036

R3. Scott SE, Breckon JD, Copeland RJ (2019). An Integrated Motivational Interviewing and Cognitive-Behavioural Intervention Promoting Physical Activity Maintenance for Adults with Chronic Health Conditions: A Feasibility Study. *Chronic Illness*. 15(4):276-92. https://doi.org/10.1177/1742395318769370

R4. Grinvalds N, Shearn K, Copeland RJ, Speake H. (2019). What Works to Facilitate the Promotion of Physical Activity in Co-located Healthcare and Leisure Settings: A Realist Review. *SportRχiv*. https://doi.org/10.31236/osf.io/h9r8w

R5. Speake H, Copeland RJ, Till SH, Breckon JD, Haake S, Hart O (2016). Embedding Physical Activity in the Heart of the NHS: The Need for a Whole-System Approach. *Sports Med*. (46):939-46. https://doi.org/10.1007/s40279-016-0488-y

R6. Speake H, Copeland RJ, Breckon JD, Till S (2019). Challenges and Opportunities for Promoting Physical Activity in Health Care: A Qualitative Enquiry of Stakeholder Perspectives. *European Journal of Physiotherapy*. https://doi.org/10.1080/21679169.2019.1663926

All articles underwent rigorous peer-review and are published in leading journals in the field.

4. Details of the impact

Sheffield Hallam's body of research on physical activity and the wider recognition and standing of the team in this arena, led to Sheffield being awarded a £10 million capital grant from the Department of Health and Social Care (DHSC). Sir Andrew Cash, Chief Executive of Sheffield Teaching Hospitals (2001-18) has reflected how: *"Hallam research led to the co-location of over 20 clinical specialities and more than 100,000 appointments per year being delivered in the NCSEM centres. A significant achievement and a model that has made a huge difference to the way we promote physical activity across Sheffield."* [**E10**]

The investment from DHSC enabled the creation of three NCSEM centres in Sheffield, Concord, Graves and Thorncliffe, located in communities known to experience poor health. In each of these centres, sport and leisure facilities and NHS services are co-located. Opened between 2015 and 2016, these centres have impacted on a wide range of beneficiaries in Sheffield and beyond, including:

Patients

NCSEM centre patients receive their usual NHS care, but do so in an environment that promotes physical activity. Between 2015 and 2020, an average of 100,000 NHS appointments per year have been attended at the three co-located centres, including 60,000 for musculoskeletal services [**E10**, **E3**]. More than 20 clinical services co-locate at the three centres. For the patients, the co-location approach has clear advantages, such as being able to attend appointments closer to home, in a less intimidating setting than a hospital, and being able to park more easily. Importantly, the co-location model also broke down barriers for older and less fit patients, who would not normally attend sports or leisure centres, but have been enabled to do so by the new model of operating. 72-year-old Trevor, who had a pacemaker, chronic obstructive pulmonary disease, osteoporosis and was overweight, was referred for a programme of physical activity by NHS staff at the Graves centre. After two months, Trevor reported noticeable weight loss and other significant health benefits from his new regime: *"I have noticed a great improvement in my joint mobility, balance and in my ability to exercise for longer… [and I will keep] focused on my goals to continue to reduce my weight and increase my mobility"* [**E6**]. More patients are also being directly referred for physical activity support by the specialist secondary and community care clinics co-located within the NCSEM facilities, as opposed to the traditional approach where referrals can only come from primary care (GPs), thus making the experience seamless for patients. Complex cases can also be more easily shared and co-managed within NCSEMs, providing more immediate, flexible and joined-up care for patients across clinical areas. [**E1**, **E3**]

NHS Staff and the Sheffield Teaching Hospitals

By 2020, over 150 NHS staff were working at the co-located centres. They reported clear advantages from the new model [**E3**, **E4**], including that co-location made it easier for them to discuss physical activity with patients at a venue where opportunities for such activity were available. One NHS clinician working at a NCSEM centre stated: *"I think when they go to*

somewhere like Graves and they see people that are less able than them actually participating in physical activity, it empowers them a little bit more as well… The patients are much more approachable to the subject of exercise when you are at Concord or Graves because they're in that environment, as opposed to a clinic". [**E6**]

Staff also reported that the model enabled collaborations between different NHS services in the same setting. An example of this is the integrated pathway at the NCSEM co-located centres for chronic pain. This work brought together the Improving Access to Psychological Therapy (IAPT) services and musculoskeletal (MSK) teams to support people with chronic pain into physical activity as part of their recovery. According to the Lead MSK Consultant: "*It is our experience that the physical co-location of different services within NCSEM sites has led directly to a number of innovative clinical developments… [It] enables sharing of clinical knowledge and the cross-fertilisation of ideas… [The] collaboration between physiotherapists and the IAPT team… arose from a 'corridor conversation' at one of the sites"*. The chronic pain pathway at Sheffield IAPT is now regarded as an exemplar in delivering mental health services by NHS England. [**E2**, **E3**]

Sheffield Teaching Hospitals NHS staff have reported that co-location better supported their professional development, enabled innovative collaborations and improved peer support. There was also clear impact on workplace wellbeing in that NHS staff were able to use the facilities at the centres to exercise, while the co-located sites created a sense of community. One NHS staff member reported: *I walk out of my clinic room and through the cafe and people are aware there's people swimming, there's people in the gym, but there's people sat down having chats and having cups of tea, it's just so different the environment here. It feels like a lovely little community. It's very different [to hospital clinics] and much more relaxing.* [**E6**]

Leisure Centre Providers

The three centres are run by two different providers: Sheffield City Trust, a registered charity, and Places Leisure, part of the Places for People group of companies. Both have benefited from the increased footfall at their centres, drawing in segments of the population who would not normally attend sports facilities. At Graves for example, the centre observed an 82% increase in visitors to the site between August 2016 and May 2018 [**E1**, **E9**]. The extra NHS referrals have also led to a rise in memberships - at Graves membership increased by 186% over the same period. This has enabled extra investment in all three centres, leading to significant improvements in the quality of the facilities offered, such as the inclusion of a Milon suite dedicated to supporting older adults to become more active. The increased footfall and use of the leisure facilities at the co-located centres also led to the creation of new jobs at the three centres, including fitness instructors and reception staff. A private physiotherapy practice also moved into the Graves centre in 2018, demonstrating that the co-location model encourages small business opportunities. [**E1**]

Sheffield City Council (SCC)

SCC has benefited from the body of work described, through £14m of investment (£10m from DHSC, £3.25m from Sport England's iconic facilities fund, plus contributions from the Lawn Tennis Association and British Gymnastics) in its leisure facilities to accommodate the centres. The Cabinet Member for Culture, Parks and Leisure stated: *"The importance of establishing the co-located centres for our own reputation as a council focused on public health and Sheffield's wider reputation cannot be understated. Moreover, the positive impact that these co-located centres has had on public health in the relevant areas of Sheffield is demonstrable. Investment in new modern facilities with co-located services has also helped the council to reduce the amount of subsidy required to support the running of the venues."* [**E6**]

Policy and Advocacy Work

UKactive, a not-for-profit industry association promoting the interests of commercial gyms and community leisure centres, cited the co-location model in its 2018 policy statement on reimagining ageing and through the development of wellness hubs [**E7**]. Sport England have also used the Sheffield co-location model to advocate and help create momentum for similar projects nationally

[**E9**]. Leaders in other areas with deprivation are adopting the co-location model. The Head of Mansfield Place Board confirmed: *"Health and leisure have long been seen as separate entities, yet the ground-breaking work in Sheffield demonstrates a model as to how services can be integrated through the coming together of assets around a common vision. The Mansfield Place Board considers it [the Sheffield model] the exemplar for how co-location between health and leisure can be achieved."* [**E5**]

International Application

The co-location model has also informed investment and policy conversations internationally. Between 2018 and 2020, Copeland and his team lead policy workshops with health leaders in Mauritius, and trained 53 health practitioners to become physical activity champions and exercise referral practitioners. This government-endorsed project resulted in a blueprint for a co-located centre in Mauritius and a shift in the way that health and wellbeing is valued by policy makers in health and the economy. The Chair of the Mauritius Sport Council confirmed that: *"As a direct extension of this work, the co-location of health and leisure services within community venues was identified as a model of best practice and informed the establishment of a national programme of exercise prescription as one of the 20 key recommendations within our National Policy for Sport and Physical Activity."* [**E8**]

Impacts during the Covid-19 Lockdown

Between March and September 2020, the NHS facilities at the three centres were able to continue their patient service online with the help of their existing technical infrastructure. Due to their location away from hospital settings, they returned to face-to-face consultations early in July. Councillor Mary Lea of SCC stated: *"Health and wellbeing has never been as important to the residents of Sheffield, and the NCSEM facilities... have remained operational…, enabling those in need of support to continue to access their NHS health provision in their local leisure facility"* [**E6**]. 500,000 copies of the 'Active at Home' booklet (co-produced with Public Health England, Sport England, Chartered Society of Physiotherapy and Age UK) were distributed to vulnerable people to help them maintain physical activity during lockdown. Together these measures helped avoid a break in care, maintained people's physical function and reduced a backlog of appointments, demonstrating the resilience and sustainability of the co-location model.

5. Sources to corroborate the impact

E1. NCSEM July 2018 Board Impact Report on co-location model

E2. Chronic pain and low back pain pathway at Sheffield IAPT Service: https://www.england.nhs.uk/mental-health/case-studies/chronic-pain-and-low-back-pain-pathway-at-sheffield-improving-access-to-psychological-therapies-iapt-service

E3. Letter from Sheffield Teaching Hospitals NHS Foundation Trust on impact of co-location

E4. Impact review undertaken by Legacy Park Limited

E5. Letter from Mansfield Place Board

E6. Corroborating quotes from key stakeholders and users of the NCSEM co-located model

E7. Report from UKactive highlighting impact of NCSEM co-located model on ageing agenda

E8. Letter from Chair of the Mauritius Sport Council

E9. Sport England and UKactive report highlighting NCSEM as a community wellness hub

E10. Sir Andrew Cash testimonial letter