

July 2018

Embedding physical activity in the undergraduate curriculum

Commissioned by Public Health England (PHE) and Sport England to embed physical activity in the undergraduate curricula in a sample of medical schools and schools of health in England during 2017 and 2018. This is part of the PHE & Sport England's Moving Healthcare Professionals Programme



movement
for movement

Authors on behalf of Exercise Works Ltd
Ann B. Gates MRPharmS BPharm (Hons)
Ian K. Ritchie FRCSEd

Executive Summary July 2018



Forewords

A final year medical student's view on the lack of exercise medicine in undergraduate curricula

As a medical student about to graduate, I have been left disappointed by the lack of exercise medicine I have been exposed to during my time at medical school. Despite it being a well-established way to prevent, treat and manage illness, exercise medicine does not feature significantly in medical curricula throughout the United Kingdom. As a result, there is lack of knowledge and awareness in the medical community. This issue is not limited to doctors: all allied health care professionals are in a position to influence positive lifestyle changes and all should be exposed to exercise medicine in their undergraduate curricula. We are currently missing out on a fantastic opportunity to empower the health care professionals of the future to be confident in advising patients about utilising exercise to improve their health and quality of life. This commission report demonstrates that physical activity can be successfully integrated into medical school curricula, and that students can encourage and support this being implemented.

Katie Marino

Final year medical student, University of Sheffield.

SEM MSc (Distinction), The University of Nottingham.

Recent data shows that less than half of Europeans engage in the recommended levels of physical activity

This is concerning, since physical inactivity and sedentary behaviour are key modifiable risk factors for the development of noncommunicable diseases (NCDs), including cardiovascular disease, diabetes, cancer and mental health, which in combination are the leading cause of death in the European Region. Besides being a cornerstone strategy for reducing the burden of NCDs, as articulated in the WHO Global Action Plan for the Prevention and Control of NCDs 2013–2020, the promotion of physical activity is absolutely essential to meet many of the United Nations Sustainable Development Goals (SDGs).

The Physical Activity Strategy for the WHO European Region 2016-2025 defines as a key objective to integrate physical activity into prevention, treatment and rehabilitation health services. Health professionals, especially at the primary health care level, play a critical role in the promotion of physical activity, healthy eating habits, and assisting patients in weight management.

There is a need to ensure that health professionals are equipped to deal with this challenge, whether through being skilled in brief counselling techniques or prescription of physical activity programmes to those most at risk. It is essential to include contents of physical activity promotion as part of the curriculum for all health professionals, with the collaboration of national and international organisations, health education institutions and health-care providers.

The Moving Healthcare Professionals Programme led by Public Health England and Sport England is a great example of an integrated approach that fosters strategic relationships, interdisciplinary collaboration, and sharing of successful stories, which can be used throughout Europe.

Dr. João Breda PhD MPH MBA, Head WHO European Office for Prevention and Control of Noncommunicable Diseases



1. Background

Around 20 million adults in the United Kingdom (UK) are insufficiently active, putting them at a significantly greater risk of non-communicable diseases, immobility and premature death. Levels of sedentary behaviour also remain stubbornly high in the UK, and evidence is growing that shows a sedentary lifestyle, irrespective of your level of physical activity, is strongly associated with poor cardiovascular and musculoskeletal health. Combined, these two risk factors present a considerable threat to people's individual health together with inequitable community and societal wellbeing.

A key part of the solution is to ensure that all health professionals are given the tools (knowledge and skills) to enable enquiry into a patient's level of activity and to provide advice to help them adjust their behaviours and lifestyle to allow for increased activity. A Gates and I Ritchie, on behalf of Exercise Works Ltd, were commissioned by Public Health England (PHE) to expand coverage of the physical activity undergraduate resources across medical schools in England and pilot similar in nursing/allied health professional schools. This work forms a key part of PHE's strands of activity in the Moving Healthcare Professionals Programme (MHPP), which is delivered in partnership with Sport England. The Higher Education Institutions (HEIs) and local PA links were approached through the UK Council of Deans (CoDH). The aims were:

- To promote physical activity in all healthcare undergraduate curriculum in England for the benefit of patients
- To promote physical activity for the benefit of the student health care professionals (HCPs)
- To build strategic relationships with the medical schools and UK Council of Deans of Health (CoDH) and HEI's and develop a capacity planning approach to knowledge and skills implementation for physical activity brief interventions and strategic influence (such as HCPs promoting active travel or PA initiatives such as The Daily Mile)
- To encourage interdisciplinary working across and within the Universities and the local health community

- To emphasise alignment of local, national and international strategies, policies and best practice, especially use of the UK Chief Medical Officer's physical activity guidelines infographics
- To inspire leadership and ambition across the wider health and social care Higher Education institutions (HEI) community
- To build capacity in the local and national workforce to enable equitable access to physical activity opportunities for: NHS patients, individuals, communities and the nation

A. Objectives

- i. Contact and visit 17 medical schools in England as part of the 2017/2018 commission specification (details available by request).
- ii. Develop a clear framework for embedding physical activity in the curriculum which recognises differing levels of engagement and support needed by each university
- iii. Provide scene setting presentations promoting the Chief Medical Officers' (CMO) physical activity recommendations and infographics
- iv. Enable bespoke discussions/workshops to explore ways of delivering PA in the curriculum
- v. Establish a baseline of existing physical activity teaching and assessments in all undergraduate medical schools
- vi. Identify examples of best practice and innovation in PA leadership, teaching and assessment methods

- vii. Approach over 40 English schools of health to embed PA in the curriculum and provide access to the 2017 #MovementForMovement resources and/or support using their own resources to the 83-member Universities of the UK Council of Deans of Health
- viii. Engage with and provide support to at least four exemplars in nursing, allied health professional and pharmacy courses/schools and professional bodies (such as the Royal College of Chiropractors) in England
- ix. Develop a proposal for future opportunities to upskill the next generation of NHS healthcare professionals
- vii. Present to an Open Access Physical Activity Symposium in Sheffield (AG and IR)
- viii. Provide university funded undergraduate and postgraduate presentations on physical activity for health and wellbeing (by AG) for student allied health care professionals and exercise/sports professionals at : The University of Nottingham BSc Physiotherapy, Sports Rehabilitation BSc and Physiotherapy MSc courses, Coventry University BSc Physiotherapy final year course, University College Birmingham BSc Sports Therapy course, and Northumbria University Sports and Exercise course as requested, as a result of the Council of Deans press release in November 2017.

B. Delivery outputs

- i. Provide a narrative summary for each medical school visit (Appendix 2) and highlight an example of their best practice, where applicable (Appendices 2-14)
- ii. Propose the final framework model for embedding physical activity in the curriculum developed from the visits and other contacts (Table 1a, 1b and Appendices)
- iii. Provide evidence of the approaches to over 40 schools of health through a press release through the UK Council of Deans of Health to 83 and launch of the 2017 #MovementForMovement resources (Figure 1 and Appendix)
- iv. Provide evidence of the engagement of five undergraduate health courses, demonstrating their framework approaches to embedding PA in the curriculum (Table 2 and Appendices 16-21)
- v. Deliver a keynote presentation to the Royal College of Chiropractors (AG)
- vi. Deliver a presentation and workshop at the annual Undergraduate Sports and Exercise Medicine Societies (USEMS) Meeting (IR/AG)
- ix. Contribute to a British Journal of Sports Medicine (BJSM) podcast highlighting the approaches by the University of East Anglia (UEA) and Plymouth School of Medicine to health school teaching especially paramedic teaching <https://soundcloud.com/bmjpodcasts/physical-activity-in-the-curriculum-impact-in-schools-of-medicine-and-new-healthcare-professionals?in=bmjpodcasts/sets/bj-sm-1>
- x. Develop a British Journal of Sports Medicine and PHE endorsed podcast highlighting the essential exercise prescription led by the team from Cambridge School of Medicine
- xi. Provide supplementary information highlighting examples of best practice and commission findings (all appendices)
- xii. Provide three interim reports and a final Executive Summary report and appendices to the commissioning organisations
- xiii. Make recommendations for the next steps



2. Approach

Engagement with all 17 medical school Deans and heads of curricula design was achieved. Visits were made to 16 medical schools (Figure 1) during September 2017 to June 2018 and a variety of PA teaching options were offered to academic and clinical staff, undergraduate students and local physical activity advocates and networks.

Southampton Medical School were unable to accommodate a visit within the project timeframe. As a result, they are not included in the framework (Table 1). However, they were provided with full access to the resources together with examples of best practice for implementation.

A joint press release by CoDH (Appendix 15) was sent to all 83 members of CoDH. Of these, 64 are England-based HEIs (Figure 1) and received links to the #MovementForMovement resources.

In addition, direct approaches were made to seven self-selecting allied health professional undergraduate courses. They were given access to the resources and asked to report back on their use of the resources and/or their own content by May 2018. These Universities are: Nottingham physiotherapy department and sports rehabilitation and interprofessional learning (IPL) course, Worcester physiotherapy and allied health professional courses, Wolverhampton University (where we hope to engage a wide range of course leads on the implementation of physical activity teaching in collaboration with other courses), UEA, Salford, Plymouth University health care professionals' courses and Keele University department of pharmacy. Five of these HEI's provided exemplars of current practice (Table 2 and Appendices 16-20).

Combined approaches were also made via social media, the #MovementForMovement community of practice and requests for support from a Royal College (RCC) and student-led bodies such as the Undergraduate Sports and Exercise Medicine Society.

Dr Sarah Hanson, Lecturer in Nursing Sciences at the University of East Anglia, who has conducted research on the impact of walking in preventing cancer and chronic diseases, said:

It is critical that health staff are trained and feel confident in promoting activity to their patients.

As well as prevention, this could include building fitness in preparation for surgery and treatments such as chemotherapy; utilising activity to aid post-treatment quality of life and recovery time; preventing de-conditioning for those who are chronically unwell and improving the psychological health of those with mental health problems.

The #MovementForMovement resources are excellent. They are evidence based and have been peer reviewed. They are a great aid to HEIs who are adding physical activity to their curriculum.

Figure 1: Visits and approaches to PA in the curriculum of 16 medical schools and 64 HEIs in England

Medical schools ●

Plymouth (University of), Faculty of Medicine
Exeter (University of), Medical School
Lancaster University, Faculty of Health & Medicine
Bristol (University of), Medical School
Warwick (University of), Warwick Medical School
Leicester (University of)
Norwich UEA University, School of Medicine
Keele (University of)
Birmingham (University of), Medical School
Newcastle/Durham Medical school
Hull/York Medical Schools (NOTE: maybe separate visits)
Leeds University
Sheffield University and Sheffield Hallam University
Southampton (University of), School of Medicine (● Did not visit)
School of Clinical Medicine, University of Cambridge
Oxford (University of), Medical Sciences Division
Manchester University Medical School

Schools of Health ○

Anglia Ruskin University
Birmingham City University
Bournemouth University
Brunel University
Buckinghamshire New University
Canterbury Christ Church University
City University London
Coventry University
De Montfort University
Edge Hill University
Keele University
King's College London
Kingston University / St George's, University of London
Leeds Beckett University
Liverpool John Moores University
London South Bank University
Manchester Metropolitan University
Middlesex University
Newcastle University
Northumbria University
Oxford Brookes University
Plymouth Marjon University
Plymouth University
Sheffield Hallam University
Staffordshire University
Teesside University
The Open University
The University of Nottingham
The University of Sheffield
University of Bedfordshire
University of Birmingham
University of Bolton
University of Bradford
University of Brighton
University of Central Lancashire
University of Chester
University of Cumbria
University of Derby
University of East Anglia
University of East London
University of Essex
University of Exeter
University of Gloucestershire
University of Greenwich
University of Hertfordshire
University of Huddersfield
University of Hull
University of Leeds
University of Lincoln
University of Liverpool
University of Manchester
University of Northampton
University of Portsmouth
University of Salford
University of Southampton
University of Suffolk
University of Sunderland
University of Surrey
University of the West of England, Bristol
University of West London
University of Wolverhampton
University of Worcester
University of York
York St John University



3. Summary of visits

Framework of engagement and embedding of resources for physical activity in the undergraduate curriculum

Key:

- Achieved framework criterion
- Partial achievement of framework criterion
- Did not achieve framework criterion

Table 1a: Framework of physical activity in the medical & health school curricula

		Plymouth	Exeter	Lancaster	Bristol	Warwick	Leicester	UEA	Keele	Birmingham
1.	Understands the context for PA in curricula/MECC	Green	Yellow	Green	Yellow	Green	Green	Green	Green	Green
2.	Understands context of exercise & surgery EndPJParalysis/deconditioning	Green	Yellow	Green	Yellow	Green	Green	Green	Green	Red
3.	Workshop participation	Green	Red	Green	Red	Green	Green	Green	Red	Red
4.	Round table discussion	Green	Green	Green	Green	Green	Green	Green	Green	Green
5.	Interdisciplinary approach	Green	Yellow	n/a	Yellow	Yellow	Yellow	Green	Green	Red
6.	Commitment to curricula change	Green	Yellow	Green	Yellow	Green	Green	Green	Green	Yellow
7.	Use of the #MovementForMovement resources	Red	Red	Green	Red	Red	Red	Yellow	Red	Red
8.	Uses own PA materials	Yellow	Red	Green	Red	Yellow	Green	Red	Yellow	Red
9.	Uses CMO infographics	Red	Red	Green	Red	Red	Red	Red	Red	Red
10.	Uses Motivate2Move resources for GP's	Red	Red	Green	Red	Red	Red	Red	Red	Red
11.	Assessment of clinical PA skills	Red	Red	Green	Red	Green	Green	Green	Green	Yellow
12.	Exams on PA	Red	Red	Green	Red	Yellow	Yellow	Yellow	Yellow	Yellow
13.	Evidence of PA taught in pre-clinical years	Yellow	Red	Green	Red	Green	Green	Yellow	Red	Red

*October 2017 data

Framework of engagement and embedding of resources for physical activity in the undergraduate curriculum

Table 1b: Framework of physical activity in the medical & health school curricula

		Newcastle	HYMS	Leeds	Sheffield	Cambridge	Oxford	Manchester
1.	Understands the context for PA in curricula/MECC	Green	Green	Green	Yellow	Green	Green	TBC
2.	Understands context of PA & surgery EndPJP/Paralysis/deconditioning	Green	Green	Green	Yellow	Green	Green	TBC
3.	Workshop	Green	Green	Red	Red	Red	Green	TBC
4.	Round table discussion	Green	Green	Green	Green	Green	Green	TBC
5.	Interdisciplinary approach	Green	Green	Red	Red	Yellow	Red	TBC
6.	Commitment to curricula change	Green	Green	Green	Yellow	Green	Green	TBC
7.	Use of The #MovementForMovement resources	Red	Red	Red	Red	Red	Red	TBC
8.	Uses own PA materials	Yellow	Red	Red	Red	Yellow	Yellow	TBC
9.	Uses CMO infographics	Red	Red	Red	Red	Green	Red	TBC
10.	Uses Motivate2Move resources for GP's	Red	Red	Red	Red	Red	Red	TBC
11.	Assessment of clinical PA skills	Red	Red	Red	Red	Yellow	Yellow	TBC
12.	Exams on PA	Red	Red	Red	Red	Yellow	Red	TBC
13.	Evidence of PA taught in pre-clinical years	Red	Red	Red	Red	Red	Red	TBC

Key: ● Achieved framework criterion ● Partial achievement of framework criterion ● Did not achieve framework criterion

Framework of engagement and embedding of resources for physical activity in the undergraduate curriculum in five schools of health exemplars

Table 2: Framework of physical activity in FIVE health school curricula

		Nottingham	Worcester	Wolverhampton	UEA	Keele
1.	Understands the context for PA in curricula/MECC	Green	Green	Green	Green	Green
2.	Understands context of PA & surgery EndPJP/Paralysis/deconditioning	Green	Green	Green	Green	Green
3.	Interdisciplinary approach	Yellow	Yellow	Yellow	Green	Yellow
4.	Commitment to curricula change	Green	Green	Green	Green	Green
5.	Use of The #MovementForMovement resources	Red	Green	Red	Green	Red
6.	Uses own PA materials	Yellow	Green	Yellow	Green	Green
7.	Uses CMO infographics	Red	Yellow	Yellow	Green	Red
8.	Uses Motivate2Move resources for GP's	Red	Red	Red	Green	Red
9.	Assessment of clinical PA skills	Red	Red	Red	Yellow	Green
10.	Exams on PA	Red	Red	Red	Yellow	Green
11.	Evidence of PA taught in pre-clinical years	Yellow	Red	Red	Yellow	Green

Key: ● Achieved framework criterion ● Partial achievement of framework criterion ● Did not achieve framework criterion

4. Evidence of movement to deliver outputs

A. Number of visits and approaches completed versus proposed

- i. 16 out of the 17 specified medical school visits were visited (Figure 1 and Tables 1a, 1b).
- ii. All 64-member universities of CoDH (Figure 1), based in England, were sent access to the #MovementForMovement resources
- iii. Five selected undergraduate health institutions recognise the importance of PA and the need to include it in the curriculum for NHS health care students and other student health professionals. The Framework provides a benchmark to measure progress in the future (Table 2).
- iv. The Royal College of Chiropractors (RCC) asked for support and access to the resources, and has recently launched a new, 2018 physical activity campaign for chiropractors. In addition, Ann Gates delivered a key note address to the RCC on the #MovementForMovement resources which resulted in the RCC, AECC University College Bournemouth and The Welsh Institute of Chiropractic accessing the resources and initiating work on incorporating PA into their curriculum.

B. Evidence of confirmed commitments and approaches to add PA into the curriculum

- i. All seventeen of the medical schools visited/approached fully or partially recognised the importance of PA and the need to include it in the curriculum for medical students and other student health professionals (Tables 1a, 1b). The extent to which that will be achieved is uncertain because of the many pressures on curricular leads. The Framework provides a benchmark to measure progress in the future.
- ii. Significant improvement on the use of the: CMO infographics, #MovementForMovement resources and a community of practice approach to teaching undergraduate medicine/health care students was noted after each contact and approach (see Appendices 2-20 for case study examples and summaries of each visit).
- iii. A British Journal of Sports and Exercise Medicine (BJSM) podcast (Appendices 21, 3 and 19) from the Universities of UEA and Plymouth Faculties of Medicine and Health highlighted their commitment and work around embedding physical activity in their health professionals' undergraduate curriculum (this podcast has exceeded the metric of over 8100 audience listeners). This media approach greatly increased awareness of the Moving Healthcare Professionals Programme by Public Health England.

- iv. All five of the schools of health, since approached, have now committed to and established inter-professional meetings and cross-University working groups for physical activity in the curriculum.
- v. The RCC organised a public health conference, at which Ann Gates gave a keynote, and has now launched a physical activity campaign across its membership of chiropractors (see Appendices 24-25).
- vi. The School of Clinical Medicine Cambridge led on the production of a PHE endorsed BJSM podcast of the essentials of an exercise prescription for all health care students. This brought together the evidence for physical activity benefits and provided tips for the essential consultation format for making every contact count, in a short 10-minute soundbite.

Chiropractors are well placed to participate in public health initiatives. Collectively, they have several million opportunities every year in the UK to support people in making positive changes to their general health and wellbeing, as well as helping them manage their musculoskeletal health of course.

Exercise is the core component of the evidence-based, multimodal package of care that NICE recommends for low back pain and sciatica and is helpful for many other musculoskeletal conditions that chiropractors help people manage.

However, all healthcare professionals, including chiropractors, should equip themselves, and take every opportunity, to recommend and encourage their patients to increase physical activity to maintain and improve their general health, noting the very significant benefits to be gained in terms of reduced risk of cardiovascular disease, diabetes, dementia and cancer.

Dr Mark Gurden, Chair of the Royal College of Chiropractors' Health Policy Unit

5. Assessment of available PA resources and opportunities for innovation in the curriculum

A. Use of ad hoc resources

- i. Four medical schools (Lancaster, Warwick, Leicester, Cambridge) used clearly identifiable PA resources and evidenced use of the Chief Medical Officer's infographic series or World Health Organization (WHO) information. In addition, four universities (Lancaster, Warwick, Leicester and Hull York Medical School (HYMS)) incorporated Making Every Contact Count (MECC) themes together with direct links to key NHS interprofessional campaigns such as falls prevention, deconditioning and the prevention of noncommunicable diseases or as part of the WHO sustainable development goals.
 - ii. There was limited evidence that PA teaching was evaluated, examined on, or skills assessed in any of the medical schools. Leicester, UEA, Newcastle, Leeds, and Cambridge agreed to explore assessment and examination opportunities.
 - iii. There was evidence that Keele School of Pharmacy examined pharmacy students on PA brief intervention (Appendix 20).
 - iv. There was limited evidence of interprofessional learning materials and collaboration regarding PA in the health curriculum. UEA School of Nursing and Physiotherapy, Worcester and Nottingham School of Physiotherapy appeared to be leaders in this approach. Newcastle expressed a desire to work closely with their speech and language therapy department to promote closer understanding of the benefits of PA, particularly in cancer and neurological patients.
 - v. All exemplars of practice are included in the Appendices.
- students across the course in years 1-3. See Appendix 4 Case Study by Lancaster University Medical School use of the #MovementForMovement Resources.
- ii. UEA school of medicine and health, Newcastle Medical School and Worcester Physiotherapy Department were exemplars of embedding the entire #MovementforMovement resources after our visit/ approach: each using different, bespoke methods. Sheffield Hallam School of Health had embedded the resources for physiotherapists and radiographers in 2017 (Appendix 22). See appendices 16-20 for individual school case studies by the five schools and progress on the use of the #MovementForMovement Resources.
 - iii. Newcastle, Nottingham, Wolverhampton, Keele, Plymouth (confirmed by verbal communication) and Salford (confirmed by email) schools of health are now starting to embed the resources into undergraduate teaching or making them accessible for student led learning.
 - iv. Keele is reviewing the resources for use across the faculty of health and medicine as part of a University led approach to health and wellbeing but pharmacy at Keele has already achieved the teaching of PA benefits and developing consultation skills in the final year of their course.
 - v. Cambridge is developing a short, international, PHE-endorsed podcast on the essentials of an exercise prescription (based on the CMO resources and #MovementforMovement information) to benefit student knowledge and improve clinical reasoning and practice on placements/electives and to supplement existing teaching of PA.

B. Use of the #MovementForMovement Resources

- i. Lancaster Medical School was an exemplar of embedding of the entire #MovementforMovement resources and this module was available to medical
- vi. Oxford Medical School are piloting a new module in Public Health for year 5 students that will include behaviour change training in physical activity. This will include brief intervention training. Good discussion about the importance of role models and the challenges in ensuring that class room work on PA is also reflected

in clinical teaching and experience throughout primary and secondary care. The principles of PA in the UG curriculum are to be presented to the curriculum committee by Professor Ashok Handa. Professor Handa also believes that PA would fit in with Values Based Practice Medicine (VBM) training. Oxford Medical School have also promised to present back progress on inclusion of PA in the curriculum to the visitors. The CAPE NHS (Clinical Attachment Programme) is a useful vehicle for developing PA within curricula. The discussions revealed that there is agreement amongst the attendees about the importance of the topic with a desire to include PA teaching throughout the curriculum. This will need to be demonstrated in future.

- vii. Manchester key points data to be added here after visit

C. Identified ways of embedding physical activity in the curriculum

(See Appendix 2 for details of individual visits)

- i. Plymouth led a successful interdisciplinary workshop identifying opportunities to embed teaching of PA into clinical placements and to link student learning and social engagement activities to the Mayflower 2020 community campaign.
- ii. Leicester, Warwick and Newcastle have agreed to identify and improve on over 100 single best answer exam questions and to share their outputs across the Medical Schools Council Assessment Alliance.
- iii. Lancaster are looking to continue to lead on PA in the curriculum and forge stronger links with local sports and exercise leads so they can continue to add valuable, practical experiential learning opportunities for their students.
- iv. UEA have now developed a cross-faculty intranet site to host a variety of taught and student led PA learning materials and are looking to add in PA to their medical student communication skills assessments.
- v. Newcastle School of Medicine identified good links with their School of Speech and Language Therapy (SLT) as a starting point for interprofessional learning and collaboration. This offers the opportunities to influence the curriculum for SLT from cradle to grave, and specifically in paediatric medicine, chronic diseases such as head and neck cancers, and learning disabilities. The medical curriculum team also committed to developing assessments of PA skills and competencies in their case-led year 1 learning, anatomy, communication and experiential learning modules.
- vi. Leeds Medical School demonstrated innovation and leadership in discussing ways to integrate PA into a variety of modules, assessments and final year dissertations. Specifically, to use PA as part of their Year 1 IDEALS (Innovation, Development, Enterprise, Leadership, Safety) theme which addresses the challenges and requirements of modern practice. They are also keen to promote PA collaboration as part of their medicine and business health entrepreneurs' elective module in Year 5 medical students. This promises the opportunity for student doctors to lead on good models of change management practice, such as Football Fans in Training, Daily Mile, ParkRun, and Walk with a Doc initiatives that require whole systems development. A request for student mentorship during the innovation projects was made to Ann Gates.
- vii. HYMS coordinated a curriculum leads and student workshop across five hospital sites and agreed to review the inclusion of PA at their next course leads meeting.
- viii. Sheffield Medical School has offered to explore where PA can be embedded using final year student Katie Marino's understanding of the modules and opportunities and to pilot the use of the exam bank questions in their physicians' associates' course in 2018.
- ix. The School of Clinical Medicine, Cambridge agrees that undergraduate teaching on exercise is a key outcome. In Cambridge they are already delivering some core messages about the health benefits of exercise and expect all their graduates to be aware that regular exercise has health benefits and needs to be included in patient discussions. The challenge is moving the basic exercise message on to a more nuanced understanding of exercise prescription: move more (be more active) and sit less, regular strengthening exercise, and improve balance. Cambridge plan to integrate this within a strand of lifestyle medicine (including nutrition, sleep, stress management for example) rather than as a standalone element. A future podcast as a teaching tool is being produced with Cambridge and the British Journal of Sports Medicine as an opportunity to present a more nuanced explanation of the essentials of an exercise prescription, every consult. PHE have endorsed the podcast and the MHPP will attempt to link this to other leading international organisations such as WHO.
- x. Oxford also provided novel links to their Values-based Practice in Clinical Care Teaching Template and the NHS Clinical Attachment Programme for the East of England. This holds promise in fitting PA in their wider curriculum
- xi. Manchester – data to be completed after visit.

6. Enablers and barriers

Observed behaviours during the visits

Current curriculum adoption enablers:

- i. Leadership demonstrated in identifying ways to incorporate PA teaching at all levels of the curriculum and in developing skills in communication, brief interventions and MECC
- ii. Competition across the medical schools and schools of health on educational rankings and student satisfaction ratings
- iii. Accreditation of curriculum change efforts and recognition of progress such as a “champion physical activity advocacy programme” for HEIs
- iv. Commitment to adoption of physical activity in the curriculum and resulting action plans
- v. Commitment to student opportunities for leadership and innovation together with collaboration with all sectors
- vi. Student support and drive for PA in the curriculum. This is variable and dependent on the skills and enthusiasm of individual students. Inevitably, as students graduate, there can be problems of succession, cohesion with other faculties and initial enthusiasm may wane.
- vii. Links to collaborative community initiatives for example trialling a ‘Football Fans in Training’ initiative, The Daily Mile, and Park Run.
- viii. Exemplary embedding of the Movement For Movement resources by Lancaster Medical School
- ix. Use of spiral curricular themes such as Making Every Contact Count, interdisciplinary learning, teaching prevention matters (demonstrably good in the medical schools for alcohol and smoking), clinical communication skills and future proofing tomorrow’s leadership and workforce skills
- x. Synergy with the NHS on non-communicable disease prevention and the WHO strategies for noncommunicable diseases and the sustainable development goals
- xi. Current evidence of medical leadership and leading strategic change in and across health care professional education
- xii. The concept of an NHS ‘fit for purpose’ and a workforce that is ‘future proofed’ against the pressures of noncommunicable diseases and health challenges

Current curriculum adoption barriers:

- i. While there is clear WHO and PHE guidance on the importance of teaching physical activity in the undergraduate curriculum, there is an absence of a consistent message that it should be delivered to an agreed standard.
- ii. Some University staff were engaged in significant organisational change and leadership challenges. As a consequence, they were less able to engage, act and implement the curricular changes desired
- iii. An inconsistent approach among medical schools means that some of the key NHS themes and deliverables such as MECC and the ‘Next steps on the NHS Five Year Forward plan’ were not being delivered
- iv. There is a need to include in a consistent and planned manner, the principles of physical activity in the prevention, treatment and management of NCDs for patients and society. This was lacking across the majority of medical schools and misses the point about the direction of travel in both the NHS and WHO
- v. There is a genuine and understandable concern about established curricula that are already full with little room for additional material
- vi. Lack of performance review of curricular content and competencies by the NHS organisations means that there is no feedback to curriculum leads. That makes it difficult to future proof the NHS workforce to deliver on health strategy and policy in respect of PA
- vii. Lack of agreed consistent assessments of basic NHS knowledge and skills for brief intervention on PA across medical education
- viii. The importance of physical activity for children and young peoples’ health and hence for the future health of society was not recognised resulting in limited and variable teaching
- ix. There was little evidence of brief intervention (BI) consultation skills and societal interventions on PA in the curricula generally, despite BI being a National Institute for Health and Care Excellence (NICE) recognised and clinically effective way of influencing behaviour.
- x. Knowledge about physical activity is important for all health professionals. There is a disappointing lack of interprofessional and inter-faculty learning within and across universities and local communities



7. Conclusions and next steps

The commission from Public Health England to explore the extent to which physical activity is included in the medical undergraduate curriculum and to gauge the enthusiasm for adapting the curriculum has been a worthwhile experience. The approaches and visits demonstrated the universal acceptance of the importance of physical activity for the health of the nation.

There it is also a general recognition that teaching in physical activity should be embedded in undergraduate curricula not only for medicine but also for other healthcare professionals. We have observed that by raising the question with medical school curricular leads, there is an increasing recognition of the importance of physical activity and of the need to introduce physical activity teaching in the basic sciences, the clinical specialisms but also importantly, in teaching about communication skills. We noted that several medical schools recognise the importance of communication skills teaching specifically in PA to enable effective discussion about physical activity in making every contact count and in ensuring that brief interventions are effective.

At this stage in the commission, we have observed that medical schools generally understand that physical activity should be introduced into the undergraduate medical curriculum. The visits have stimulated thought, discussion and action on this topic.

In the case of Cambridge University, the discussion moved on to considering that physical activity is part of teaching on lifestyle generally. The authors found this refreshing and innovative. It coincides with the view that PA should not be a standalone silo of teaching but should be integral to all undergraduate medical teaching.

Given the pressures on curricular leads, we conclude that if these visits had not taken place, then thinking about including physical activity in the curricula would have been delayed. The authors are satisfied that in this regard the visits have been successful.

The templates (Tables 1a, 1b and 2) provide a baseline of what is happening now and will provide evidence in the future of the extent to which progress has been made in incorporating physical activity into undergraduate curricula. Figure 1 shows the distribution of the visits and approaches made across English HEIs.

Conclusions and next steps

- i. A total of 16/17 medical school visits were completed by June 2018, as commissioned by Public Health England and Sport England.
- ii. A framework establishing the current commitment to PA in the curriculum has been finalised.
- iii. Good strategic relationships with medical school Deans and course leads in sixteen medical schools, and five schools of health, have been established and will be maintained subject to continuation of the commission into 2019.
- iv. Engagement with the members of the UK Council of Deans (CoDH) network was completed in November 2017. This work will support the recent “Consensus on Public Health Content of Allied Health Professional curricula” and expand on the place of physical activity in the curricula in a variety of health care courses. Links to the national nursing and allied health care professions’ agenda should be made to ensure that all health care professionals are aware of this educational work, and it’s potential to add value to all NHS and public health contacts.
- v. The authors recommend that in the case of PA, that some assessment of the standard of teaching materials is developed by the General Medical Council, the CoDH and PHE to achieve consistency and sustainability in student learning activities and skills, particularly in relation to the CMO infographics knowledge, use and dissemination
- vi. Methods of sharing the executive summary, appendices and exemplar practice need to be identified by the authors and PHE to disseminate our understanding of PA in the curriculum of medical schools and HEIs in England
- vii. A #MovementForMovement resource evidence update is available in November 2017 This includes resource materials of over 21 peer reviewed slide set presentations. These resources are specifically for undergraduate students of health (as defined by the NHS). Further efforts to secure the sustainability of the “community of practice” in developing and reviewing annual updates of the resources will be identified through funding bids and external organisational support, for example: PHE, NHS England, and WHO.

- viii. A 2018/2019 proposal needs to be developed to include the six schools of medicine in the London area together with the remainder of English Schools of Medicine not visited in 2017/2018: namely, Southampton, together with a “check-up” visit to Nottingham, Brighton and Sussex Medical School and Liverpool Medical School (all of whom indicated in 2016 that they were using physical activity resources in the curriculum). This means a similar plan of visits and engagement for ten medical schools is proposed for a 2018/2019 commission.
- ix. A mechanism of connecting the actions by each medical school Dean/curriculum leads to provide updates on their progress needs to be identified and the output of this to be fed into the Medical Schools Council, General Medical Schools Council and NHS England Health Education needs to be explored by PHE and Sport England.
- x. A similar commission approach should be established to cover the remaining English Schools of Health to ensure that access to the resources and embedding of PA in the curriculum is consistent, sustainable and equitable across all English schools of medicine and health. It is suggested that this could form part of a special commission in conjunction with CoDH and NHS England, Exercise Works Ltd (as providers) and the PHE Physical Activity Champions network in the North of England.
- xi. The authors recommend that these 2018/2019 Schools of Health visits are targeted to the North of England, where inactivity levels are at their greatest, and where the impact of NHS workforce interventions could be maximized by enhancing the practice of “tomorrow’s health professionals” and “boardroom” influencers. A proposal should be developed to visit up to ten of these universities to ensure that the future workforce capacity is targeted to these North of England “feeder” Universities to reduce the significant inequity of physical activity support that exists in practice.
- xii. A review of progress by all the medical schools and schools of health against the embedding framework should be commissioned and undertaken by February 2019.
- xiii. A “change the curriculum” social media day/campaign for the #MovementForMovement resources and home-grown resources should be adopted to spread awareness of the adoption of the PA resources and to celebrate the Universities’ successes around innovative curricula changes. A “champion of PA” endorsement/badging system should also be considered to help support the Universities’ implementation teams.
- xiv. Opportunities to share the experiences and learning from this commission should also be aimed at all HEIs, the NHS and leading health care organisations/professions such as the UK Royal Colleges, WHO, United Nations and the World Economic Forum and those leading on the response and action plan for the WHO sustainable development goals, nationally and globally.



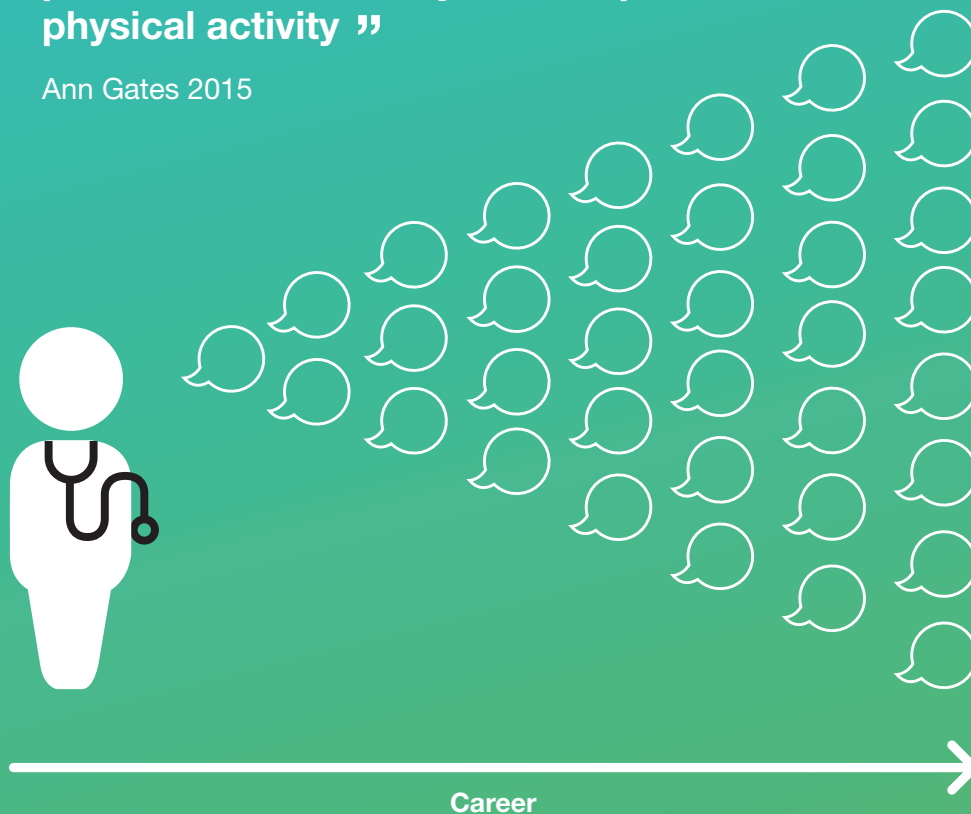
8. Acknowledgements

The authors wish to thank all the Deans of medicine and health, faculty staff, students and fellow PA advocates for their support for the project and their facilitation of a warm welcome at each of the visits.

Thanks, and recognition are also due to PHE and Sport England for the commission of this ground-breaking work to enable the teaching of PA and for their vision to enable an educated and capable healthcare workforce. A special mention is warranted for the CoDH for leading on the work with the HEIs. But lastly, we would like to extend our heartfelt appreciation to all the past and present contributors to the physical activity resources, the #MovementForMovement community of practice team of over 40 authors and nearly 30 peer reviewers, Rhonda St. Croix (Change Initiative Advisor, Office of Specialty Education, Royal College of Physicians and Surgeons of Canada), The British Journal of Sports Medicine, the followers of @exerciseworks for spreading the word, and to the fabulous Seven Stones for producing the reports, tables, figures and the commission infographics.

“ A qualified doctor, nurse, midwife or allied health professional may see half a million patients during their professional career: this has enormous potential for advocacy and the promotion of physical activity ”

Ann Gates 2015



Royal College of Surgeons Edinburgh, Round Table meeting “Great Strides” June, 2015.

Many thanks to the Universities of:

Plymouth, Exeter, Lancaster, Bristol, Warwick, Leicester, UEA, Keele, Birmingham, Newcastle, HYMS, Leeds, Sheffield, Cambridge, Oxford and Manchester for their help and support with the commission and for sharing best practice exemplars.

Special thanks to:

Public Health England

Sport England

Seven Stones



movement
for movement