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Hashem, Ferhana and Jaswal, Sabrena K. and Marchand, Catherine and Forbes, Lindsay J.L. (2020) Developing and Piloting health & work in undergraduate medical education - Final Report. Centre for Health Services Studies, University of Kent, 84 pp.

DOI

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Developing and Piloting health & work in undergraduate medical education
Final Report

March 2020

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Acknowledgements

Executive summary

The following report outlines the development and piloting of the health and work resources in undergraduate medical education within a sample of medical schools in England. The resources were developed by the Centre for Health Services Studies, University of Kent, in consultation with stakeholders, Public Health England (PHE) and the Work and Health Unit (WHU) (Department for Works and Pensions). This report also presents the findings of the evaluation from the piloting of the resources in five English medical schools.

Background

The 2017 UK Government policy programme, set out in "**Improving Lives: The future of work, health and disability**", aims to support people with disabilities and long term conditions to enter and stay in work (Department of Work & Pensions, and Department of Health 2017). The policy identified the need to integrate health and work further into undergraduate health professional curricula. In 2018, Public Health England commissioned the Centre for Health Services at the University of Kent, after a competitive tendering exercise, to develop teaching materials to support the teaching of health and work topics to medical undergraduates. This report describes the process of development and testing of these materials.

Development

Developing the resources involved stakeholder engagement from members of the Health and Work Curricular writing group (HaWC), and the External Academic and Professionals Steering Group (Ex-APS), which included service users, carers, and undergraduate medical students involved in shaping, designing and ultimately endorsing the curriculum content.

The materials consisted of 16 PowerPoint slide-sets (with notes included) and lecturer notes divided into three learning frameworks:

- Impact of work and worklessness on health
- Enabling patients to stay in and to return to work
- Working as an effective team member

The slide-sets included many hyperlinked references and sources of further learning, for example, the Health Education England e-learning modules for healthcare professionals.

Pilot evaluation in English medical schools

Medicals schools were chosen that had a range of curriculum types, according to whether the curriculum already addressed health and work, at what stage medical undergraduates were introduced to patients, whether there were traditional preclinical/clinical phases or whether the curriculum was more integrated and systems-based, and the degree to which teaching on psychosocial issues was integrated across the curriculum. The pilot evaluation was also conducted by the Centre for Health Services Studies, University of Kent.

The objectives of the pilot were:

- To consider whether the teaching materials are suitable and appropriate

- To help identify which resources have worked and which sections need strengthening

- To gauge from undergraduates' views and perspectives whether the teaching slides were useful / what topics they found less useful

- To explore whether the learning objectives were achieved

- To make changes to the teaching resources before they are distributed or offered widely

Key findings and recommendations

Objective 1

The key findings of our evaluation in relation to whether the teaching materials were suitable and appropriate are below:

- Incorporated in the curriculum in:
    - Public Health
    - Lifestyle medicine
    - Illness, disability & work
    - General practice

- GMC Outcomes for Graduates:
    - Most lecturers commented that mapping onto GMC Outcomes was helpful

- Adaptable, flexible and personalisable:

- Lecturers delivered the slides as they were given, while others personalised them drawing from their own experiences

- Pitch / level:
    - Most lecturers commented that the resources were appropriately designed so could be adapted at different stages

- Satisfaction and importance of slide-sets and delivery:
    - Both were rated very highly by undergraduates

Objective 2

The key messages in relation to this objective obtained from the findings are below:

- Positive feedback received from course tutors on:
    - Interactive sessions
    - Easy to use and deliver
    - Linked to GMC Outcomes for Graduates 2018
    - New content provided

- Complies with medical school teaching – both spiral & non-spiral curriculum

- Lecturers who were less familiar with teaching health and work topics had the aid of the lecturer notes to supplement their knowledge gaps

Objective 3

The key messages from these findings are that undergraduates:

- Thought that the resources were visually appealing which struck a balance with sufficient information on the slides and helpful content

- Felt that the resources had changed their perceptions about the importance of health and work

- Found the case studies interesting, but some further case studies were required to facilitate learning

- Thought the resources were helpful, thorough and not too complicated.

Objective 4

The key messages from our findings in relation to objective 4 are below:

- The learning objectives reported to have been achieved by the tutors

- The slide sets were commended by the tutors because although it was the first time the sessions were delivered, student learning was achieved

- The evidence set out in the slides helped to achieve learning objectives

- Undergraduates reported that the sessions facilitated their learning

Objective 5

The key messages obtained from the findings of Objective 5 are as follows:

- It may be useful to create a manual of resources for course tutors

- The impact of resources could be enhanced by using videos, role play & patient simulated learning

- Slide sets could be reinforced with case study learning / elaborating on case studies

- Tutors questioned whether long and short versions were needed

Limitations

The main limitations are set out below:
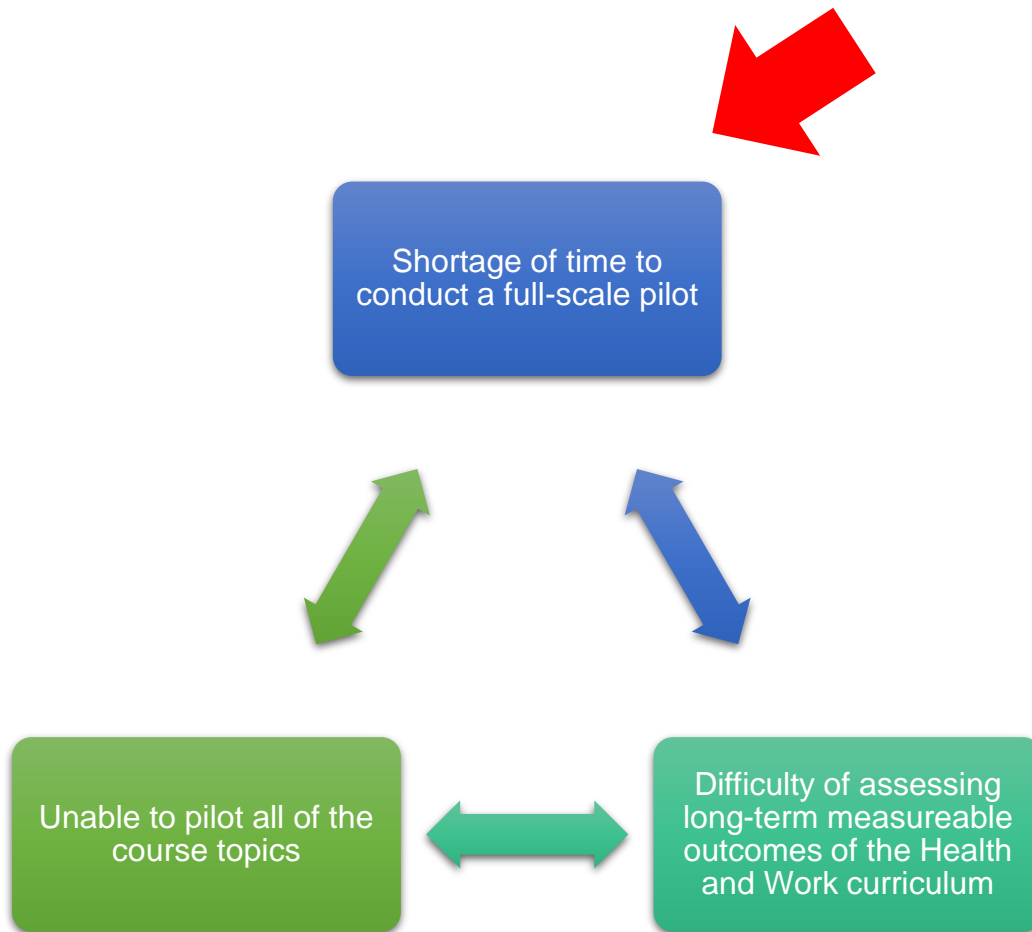
The overall timescale of this project was a major limitation that impacted upon and influenced a multitude of other factors. Although an integral and necessary component to any future innovation and research undertaken by WHU and PHE on this area, this phase of the project was nonetheless comparable to that of a feasibility study.

A longer project period would have allowed for a more extensive recruitment phase. This would have increased the timeframe to invite more medical schools to take part in the pilot in order to ensure a comprehensive methodology was employed where each of the course topics could have been piloted.

Recommendations

This piece of work serves as a feasibility study to highlight where the next steps for further exploratory work should take place. It is recommended that other research work is undertaken to fully explore aspects that this current phase identified as needing further examination, as outlined below:

- Increasing the number of lecturers and students who receive and comment upon the topics
- Effectively piloting all of the developed Health and Work topics
- Exploring the e-learning concept further i.e. looking at where the content is hosted and how it impacts upon the teaching and learning process
- Developing guidance for student assessment for medical schools on Health and Work topics
- Examining how medical schools implement the topics, for example, in different types of curriculum (e.g.traditional, systems based, timing of earliest clinical contact), which years of study the health and work topics are taught, the extent to which the health and work topics are integrated with other parts of the curriculum (e.g. public health, systems, clinical skills, professionalism)
- Examining the extent to which lecturers adapt the slide sets to fit in with their own curricula
- Measuring the long-term impact of the Health and Work curriculum on newly qualified doctors (i.e. asking the question: does implementing this curriculum change clinical practice?)

In addition, we recommend considering the following actions to promote uptake by medical schools:
- Suggesting that medical schools appoint a Health and Work Champion tutor
- Publicising the resources with a link to where to access them on existing medical school virtual learning platforms (such as on Blackboard or Moodle)

In relation to this project specifically it was suggested that the following be considered:

- A single version of the resource material existing instead of having both a long and short account of the material
- A further investigation into how best this content could be hosted (i.e. open access or login) particularly as many medical undergraduates do not have access to Health Education England's e-learning for health website (the considered host)
- Incorporating the use of videos and patient simulations to enhance the impact of the existing content
- Developing a manual for resources, which is verified by an external committee in line with GMC outcomes.

Table of Contents

Section One – Introduction to the Health and Work Resources in Undergraduate Medical Education

1.1. Background and rationale

The 2017 UK Government policy programme, set out in "Improving Lives: The future of work, health and disability", aims to support people with disabilities and long term conditions to enter and stay in work (Department of Work & Pensions, and Department of Health 2017). The policy identified the need to integrate health and work further into undergraduate health professional curricula and to improve the skills of healthcare professionals in relation to supporting people into work and to stay in work, reflecting the positive effects of work on health.

In 2017, Public Health England (PHE) commissioned an audit of coverage of health and work in a range of undergraduate curricula (including medicine) and a survey of course leaders about the content of and barriers to teaching these topics (ICF Consulting Services Ltd 2017). It found that few medical undergraduate courses explicitly included health and work and identified areas that should be covered in the undergraduate medical curriculum. Key topic areas included: understanding the relationship between health and work; self-care and resilience; understanding of and managing the need for diversity and inclusion; and managing staff well-being.

In 2018, Public Health England commissioned the Centre for Health Services at the University of Kent, after a competitive tendering exercise, to develop teaching materials to support the teaching of health and work topics to medical undergraduates. This report describes the process of development and testing of these materials.

Section Two – Project Outline

2.1. Project aims and objectives

To design and pilot integrated curriculum resources for future doctors that addresses:

- Knowledge of the links between work and health

- Skills in relation to how to communicate with service users/patients about staying in and returning to work:

    o To increase future doctors' confidence in discussing health and work with patients, having acquired the skills, knowledge, tools and techniques to undertake this activity

    o To increase the number of future doctors broaching the issue of health and work in their consultations, including giving professionals the capability and

confidence to use the fit note as a system for practical advice as well as a process for sickness certification
- o To improve patients' experiences of feeling more supported by future doctors
- o To increase the number of patients understanding the value of work to their own health and well-being, including their expectations of the fit note, by receiving advice from future doctors

- Skills to manage self and others in relation to health in the workplace

2.2. Timeline of implementation

The project was commissioned by PHE in September 2018. During the first six months of the project, we developed a first draft of the resources, which were shared with PHE and the Work and Health Unit of the Department for Work and Pensions and the Department of Health and Social Care (WHU) at the end of March 2019. Following consultation with these and other external stakeholders and further revisions, a final version of the resources was piloted in six medical schools in the Autumn term of 2019. We evaluated the pilot during September 2019 to January 2020. The resources were updated using the evaluation results, and a final draft was shared with PHE and WHU in mid-March 2020.

First draft of resources developed & shared for comment

Resource content evaluated

Sept 2018
Sept-Dec 2019
Mar 2020

Project commissioned

Mar 2019

Resources updated & shared with pilot medical schools; pilot teaching commences

Sept 2019-Jan 2020

Resource content updated from evaluation results
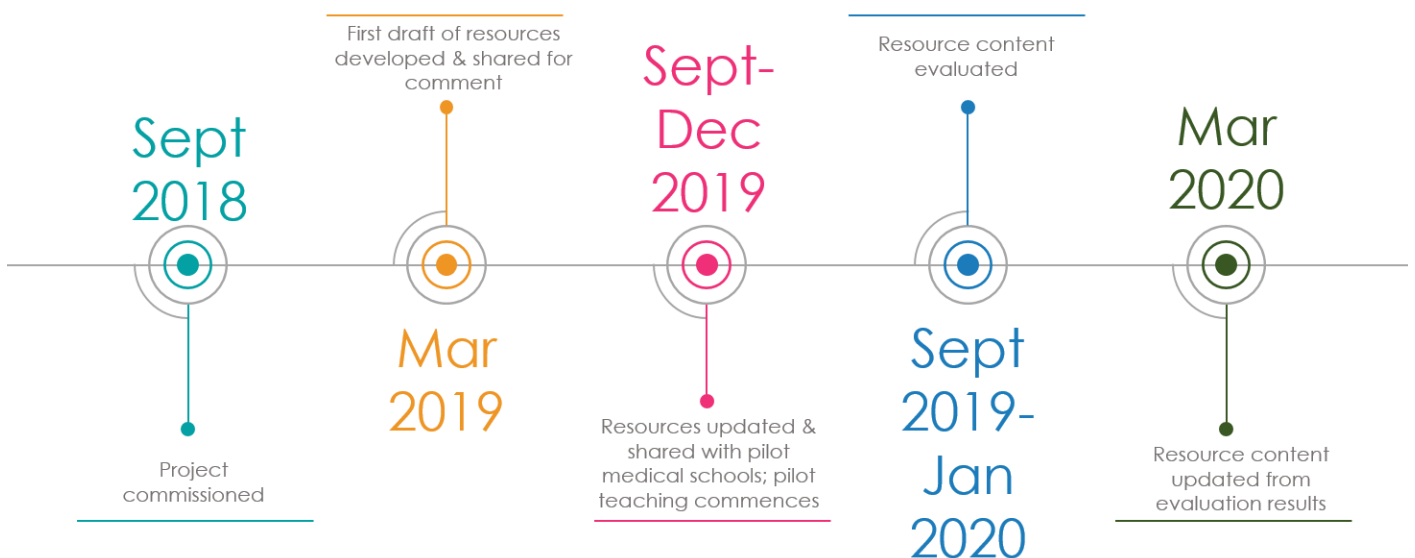
2.3. Ethical approval

The University of Kent School of Social Policy, Sociology and Social Research SRC Panel [SRCEA id 214] reviewed and approved the evaluation in November 2018. Two further amendments were approved in August and November 2019.

Ethical review was also required through two of the medical schools to conduct the evaluation, and these were approved in August and December 2019.

The University of Kent received an accreditation letter from the Deputy Chief Medical Officer highlighting the importance of the health and work to undergraduate medical education, which was used to invite medical schools to take part in the piloting exercise.

Section Three – Development of Health and Work Undergraduate Resources

3.1. Mapping exercise

Our first step was to carry out an exercise to understand more about the variation between medical schools in terms of teaching topics and models of delivery. We were aware that although all UK medical schools are regulated by the General Medical Council, there was some variation in teaching approach. These were outlined by the British Medical Association in 2019 as the following: traditional pre-clinical and clinical course; integrated /systems based course; problem-based learning (PBL); case-based learning (CBL); enquiry-based learning; and multi or inter-professional learning course (https://www.bma.org.uk/advice/career/studying-medicine/becoming-a-doctor/course-types).

We carried out desktop research on the curricula in 41 medical schools published publicly online aiming to increase our understanding of:

- The extent of early clinical contact and systems teaching, which would help us identify where health and work teaching could be integrated
- Which medical schools had traditional preclinical/clinical divisions
- The extent to which curricula followed a spiral curriculum, where subjects are repeatedly covered over the years at an increasing level of complexity
- The degree of self-directed learning
- The degree to which the curriculum appeared to follow a psychosocial or biomedical approach.

While the data we collated are unlikely to represent comprehensively the teaching models in each medical school, we could identify significant variation. Some medical schools retained the traditional basic medical science approach for the first two years followed by clinical teaching starting in Year 3. The majority of medical schools, however, offered early clinical contact, systems teaching, a spiral curriculum and a degree of self-directed

learning. Some medical schools explicitly taught health and work topics, generally in those medical schools that included early clinical contact and systems teaching.

3.2. Stakeholder engagement

We convened meetings with stakeholders across the project, which included a writing group and the other a steering group to provide feedback during curriculum development to ensure we incorporated a range of perspectives and to promote academic rigour. The two groups were

- the Health and Work Curricular writing group (HaWC)
- the External Academic Professionals Steering Group (Ex-APS)

3.2.1. Health and Work Curriculum Writing Group

For the HaWC, we assembled individuals who would be able to provide varying perspectives as clinicians, educators, researchers and service users for this group.

The aims of the HaWC were to:

- Identify candidate topics
- Create learning objectives
- Determine curriculum content and content delivery format
- Develop a product that could be adapted to fit the learning approaches of medical schools, with a view to promoting sustained use
- Develop and write the core components of the curriculum based on the candidate topics

The Terms of Reference and membership are shown in Appendix 1. The HaWC met face to face three times between October 2018 and May 2019 and made virtual contact between and after these dates.

3.2.2. External Academic Professionals Steering Group

The Ex-APS group aimed to steer and scrutinise the development of the curriculum materials, monitor the academic rigour of the work, and ensure compliance to the GMC standards and alignment with the government's health and work agenda.

The Terms of Reference and membership are shown in Appendix 2. The Ex-APS group met face to face three times during November 2018 to July 2019.

3.2.3. Engagement with the public

The Patient and Public Involvement (PPI) element of the project has been crucial in shaping the curriculum development and has helped to ensure that the content is both relevant and appropriate for students. Best practice using INVOLVE guidance (www.invo.org.uk) including payment and support for PPI, has been adhered to throughout.

PPI representation was key in both the HaWC and Ex-APS groups and we employed a combination of communication methods during the lifetime of the project; face-to-face meetings, virtual contact and telephone conversations. HaWC meetings took place on 16th October 2018, 4th December 2018 and 7th May 2019. The EX-APS group met via video conference call on 2nd November 2018, and face-to-face on 9th January 2019 and 30th July 2019.

The key aspects of the project that the PPI representatives fed into throughout the project were as follows:

1. The learning frameworks (examples, terminology and definitions)
2. Importance of signposting students to relevant services as appropriate as part of self-care
3. Explorations of teaching methods including self-directed learning, patient involvement in teaching, what worked well in what circumstances, which served as a driver to include example scenarios in the slide-sets, alongside an emphasis on how knowledge and skills be easily transferred to the workplace
4. Slide-sets (content, terminology, appropriateness of example scenarios).

In summary, the PPI feedback was invaluable in the development of the learning frameworks and the slide-sets. It was a key contributor to the final output in all slide-sets, thereby enhancing both relevance and understanding on health and work topics for the undergraduate medical students of the future.

3.3. The Health and Work Curriculum: principles & practice

3.3.1. Principles

The HaWC Group consulted upon and agreed with the Ex-APS Group the following principles:

- The curriculum related to health and work will be designed to give medical undergraduates the knowledge and skills they need to practise under supervision as a newly qualified doctor.
- All topics will be linked to the General Medical Council's *Outcomes for Graduates* (2018), which sets out what newly qualified doctors should know and be able to do.
- Health and work should be taught throughout the curriculum and should start very early in the curriculum, preferably in the introductory week.
- Health and work will be very unlikely to form a new subject within the medical course at any medical school. The topics will need to be taught within the framework of the existing course, by existing medical teachers.
- Medical school curricula across England have varying approaches to delivering the undergraduate curriculum and individual academic teams have autonomy in exactly what they teach and how and when. The curriculum materials will provide a framework/structure, suggested learning objectives and links to resources for teachers and medical undergraduates rather than prescribing exactly what is taught, when, by whom and how. Medical schools may adapt the materials according to local resources and conditions (e.g. competencies of existing teachers, what is already taught in relation to health and work).
- The curriculum materials will be designed to fit to the most common type of medical undergraduate course: systems-based, with early clinical contact, delivered according to the principles of a spiral curriculum, in which subjects are repeatedly covered over the years at an increasing level of complexity and with a strong element of self-directed learning.

3.3.2. Practice: what the resources looked like

The materials consisted of 16 PowerPoint slide-sets (with notes included) and lecturer notes divided into three learning frameworks:

- Impact of work and worklessness on health
- Enabling patients to stay in and to return to work
- Working as an effective team member

The slide sets included many hyperlinked references and sources of further learning, for example, the Health Education England e-learning modules for healthcare professionals.

The slide-sets were arranged into three learning frameworks, described below.

Learning Framework 1: Work and Health: the impact of work and worklessness on health

The main aim of this learning framework was to help future doctors understand the importance of work for people's health and provide an early introduction to how to discuss work with patients. It covers:

- the role of work (as meaningful activity, whether paid or not) as one of the key determinants of people's health
- the ways in which work can influence health, both physically and psychologically, both positively and negatively
- the evidence of the health effects of work loss and long term unemployment
- the development of basic skills in relation to when and how to ask patients about their work

Titles of topics include:

- Work and health
- Talking about work with patients

These topics would fit at various different stages of medical education, forming the bedrock for developing skills in making a diagnosis, enabling patients to take on meaningful activity, and looking after their own and colleagues' health as part of a team.

Links to current specialisms in the curriculum may fall within:

- Public health
- Professionalism
- General practice
- Systems
- Occupational medicine

Learning Framework 2: Enabling patients to stay in and return to work

The aim of this learning framework was to help future doctors learn about supporting people to return to work where appropriate. It builds on the knowledge and skills developed at different learning points of the medical curriculum. These topics are likely to be taught throughout the medical undergraduate course.

It examines current legal provisions, where patients can go to get advice, how doctors can start conversations with patients about their fitness for work, returning to work after surgery, recognising illness that may be caused by work, looking at how disability can affect work, and how long-term conditions (such as diabetes, arthritis, cancer or mental health problems) can affect work.

Titles of topics include:

- The Law around Work
- Supporting Patients on the Benefits of Work
- Fitness for Work and the Fit Note
- Disability and Work
- State Benefits for Sick and Disabled People
- An Introduction to Occupational Health Services
- Return to Work and Stay in Work after Surgery, Injury and Illness
- Recognising Illness that may be caused by Work
- Living with Illness and Work

Links to current specialisms in the curriculum may fall within:

- Public health
- Systems
- Communication skills
- General practice / community-based medicine
- Occupational medicine

Learning Framework 3: Working as an effective team member

The aim of this learning framework was to provide knowledge and skills to work as an effective member of a multidisciplinary team (in which patient is also partner). There is an emphasis on self-care, team behaviour and working as a team in an effective way to promote high quality care and patient safety. It includes topics on communicating with colleagues effectively, responsibilities to protect patients from harm from health professional ill-health (in self or other team members), self-care, recognising ill-health in colleagues, and how best to seek help for self or colleagues.

Titles of topics include:

- The Multidisciplinary Team Supporting Work-Related Health
- The Roles of a Work-Related Team and How they Work Collaboratively
- Identifying the Impact of Physical and Mental Health on your own Productivity
- Recognising and Supporting Biopsychosocial principles of Work-related Health amongst Colleagues
- Health promotion and prevention of work-related illness

Links to current specialisms in the curriculum may fall within:

- Professionalism
- Systems
- Communication and consultation skills
- Occupational medicine
- General practice

Section Four – Pilot evaluation in English Medical Schools

4.1. Pilot evaluation aims and objectives

The objectives of the pilot were:

To consider whether the teaching materials are suitable and appropriate	To help identify which resources have worked and which sections need strengthening	To gauge from UGs' views and perspectives whether the teaching slides were useful / what topics they found less useful	To explore whether the learning objectives were achieved	To make changes to the teaching resources before they are distributed or offered widely

4.2. Selection of medical schools

The number of medical schools who agreed to take part in the pilot (n=6) was chosen to give a broad set of responses possible given the short period of time available for implementation (one academic term). Purposive sampling was used to recruit medical schools with a mixture of snowballing techniques, email circulars and personal contacts as recruitment strategies. The actual number of who took part was reduced by one (n=5), as one medical school was unable to proceed with the pilot (this is explained further below).

We selected medicals schools that had a range of curriculum types, according to whether the curriculum already addressed health and work, at what stage medical undergraduates were introduced to patients, whether there were traditional preclinical/clinical phases or whether the curriculum was more integrated and systems-based, and the degree to which teaching on psychosocial issues was integrated across the curriculum.

4.3. Topics piloted

The medical schools were provided electronic copies (available via an online cloud) of all 16 topics in PowerPoint, as well as the supplementary Lecturer Notes in September 2019. Once the medical schools had viewed all of the resources, the course tutors, in consultation with the team at the University of Kent, were able to choose which topic(s) they wanted to pilot.

Table 1 shows the specific resources piloted in the five medical schools, the dates on which they were delivered and the year groups and class sizes to which they were delivered. In addition course tutors identified where the topics would be best delivered (also in Table 1). Learning Framework 1 was the most commonly piloted. Most were piloted either in the public health or general practice parts of the curriculum. Parts of Learning Framework 2 were piloted but none of Learning Framework 3.

Table 1: Topics Piloted

Medical School Site Code	Delivery dates	Year	Class size	Topic	Where best delivered in the curriculum
1	17/10/19	Year 2	~100-160	Work and health; Talking about work with patients (Learning Framework 1)	Epidemiology & Public Health
2	5/11/19; 7/11/19	Year 2	120 (over two classes)	Recognising illness that may be caused by work (Learning Framework 2)	Lifestyle medicine
3	28/10/19	Year 2	~100-150	Work & health; Talking about work with patients (Learning Framework 1)	General Practice
4	*Unable to proceed with pilot	___	___	___	___
5	16/9/19; 30/9/19	Year 3	10	Work & health; Talking about work with patients; (Learning Framework 1) Fitness for work and the fit note (Learning Framework 2)	General Practice
6	25/10/10	Year 4	~100	Work & health (Learning Framework 1)	Public Health

4.4. Recruitment, outcome measures and data collection

4.4.1. Pre and post-pilot interviews with course tutors

All course tutors were sent a participant information letter asking them to take part in semi-structured interviews (Appendix 3). Informed written consent was obtained from all interviewees (Appendix 4). Semi-structured interviews were undertaken with course tutors prior to and following the teaching pilot. Interviews were undertaken either face-to-face or over the telephone and were guided by the use of a semi-structured interview guide (Appendix 5 and 6). The interviews lasted approximately 30 minutes. The interviews were audio-recorded and transcribed. The course tutors were asked questions on: what they thought about the content, general impressions, what the mode of teaching delivery should be, where it might fit in the curriculum, whether the learning objectives were achieved and what areas could be improved. Dates of data collection are shown in Table 2.

The course tutors were also asked their advice about where they felt was the most appropriate on-line platform to host the resources.

4.4.2. Post-pilot focus groups

Medical undergraduates were invited to take part in focus groups after the teaching session. Informed written consent was obtained from all focus group participants on the day (Appendix 7 and Appendix 4).

All focus groups were undertaken face-to-face at the medical school or at a general practice surgery, and discussions were guided by a focus group topic guide (Appendix 8). The length of the focus groups ranged from 32 minutes to 72 minutes. The focus groups were audio-recorded and transcribed. The undergraduates were asked questions on the following topics: general impressions, where in the curriculum it would be best placed, what worked about the slide-sets and what requires improvement, and what mode of teaching delivery should be used to facilitate learning. Dates of data collection are shown in Table 2.

4.4.3. Post-pilot undergraduate feedback survey

A participant information letter (if recruited face to face; emailed / posted if sent remotely) was disseminated to the students informing them of the project and inviting them to take part in the survey (Appendix 9). Consent was obtained from students online / in hard copy for the survey (Appendix 10).

The students were asked to complete the survey following the delivery of the teaching sessions. The course tutors in four of the medical schools (Sites 1, 3, 5 and 6) asked to

disseminate the survey via an online link. One medical school asked for hard copies of the survey (Site 2), which were distributed to the students at the end of their session.

A feedback survey was developed to collect the perspectives of the undergraduates in an online or paper version (Appendix 11). The questionnaire included items from three validated instruments and some created specifically for the pilot.

Items from the validated instruments asked medical undergraduates about:

- how well the resources facilitated learning (four questions) (Strachota, 2006), in relation to the course documents, case studies or exercises, requirement to apply problem solving skills and requirement to apply critical thinking; response categories were strongly disagree, disagree, agree and strongly agree;

- level of satisfaction with the resources and teaching in relation to competence, confidence and professionalism conveyed by the teaching session ambience and tutor, the appropriateness of the resources, the teaching quality, and the importance of each of these (4 questions) (Douglas, Douglas, & Barnes, 2006); response categories 1 – 5;

- level of satisfaction with format, availability online, content and quantity of the slides, and the pacing of the slides during the session and the way in which the slides linked with what the tutor presented (8 questions) (Babb and Ross, 2009); response categories very dissatisfied, dissatisfied, neither satisfied nor dissatisfied, satisfied or very satisfied.

The items created specifically for this pilot used Likert response scales. Five questions asked about how helpful, thorough, and complicated the slides were, the extent to which knowledge and understanding was improved after the session. Six questions asked about medical undergraduates' use and perspectives of the Health Education England e-learning for healthcare professionals (e-LfH) hub. Dates of data collection are shown in Table 2.

Table 2: Data Collection Dates

Medical School Site Code	Pre-pilot interview date	Date survey shared	Post-pilot interview date	Focus group date
1	6/8/2019	9/1/2020	7/1/2020	24/1/2020
2	10/10/2019	05/11/2019 06/11/2019	10/12/2019	10/12/2019
3	17/10/2019	28/10/2019	04/12/2019	27/11/2019
4	22/8/2019	---	18/12/2019	---
5	20/9/2019	30/9/2019	15/11/2019	15/11/2019
6	23/10/2019	01/11/2019	5/12/2019	5/12/2019

4.5. Data analysis

4.5.1. Qualitative analysis

Interview and focus group data were analysed using a thematic analysis approach including the following steps: familiarisation of the transcript, identifying themes, indexing the data including highlighting quotes and comparing within and between participants, charting and mapping the quotes according to themes identified and interpretation of the data with reference to context, internal consistency, frequency, extensiveness and specificity of comments. This analysis was aided by the use of a qualitative software analysis programme (NVIVO Pro 12).

4.5.2. Quantitative analysis

The medical undergraduate survey data were analysed using IBM SPSS Statistics (Version 24). We calculated mean responses for each item based on the numbering on each scale. We have also calculated the percentage and proportion of students' agreement /disagreement with each of the questions.

Section Five – Pilot evaluation results

5.1. Sample size and recruitment

Seven course tutors completed the interviews before the teaching sessions and five of these completed the interviews after the teaching sessions (Table 3). Thirty-six medical undergraduates took part in the five focus groups and 85 completed the survey questionnaire (Table 3). Only 36 had ever visited the Health Education England e-learning for Health website, so the response was low for this part of the survey questionnaire.

One medical school (Site 4) was unable to proceed with piloting the slide-sets. The course tutor for Site 4 commented in a follow-up interview that the key issues were around timing: this course was usually prepared in May or June, before we were able to provide the resources. Another issue delayed the process even further: the University's student research and ethics committee required additional approval through their committee.

Table 3: Sample sizes

Medical School Site Code	Pre-Pilot Interview (teaching staff)	Post Pilot Interview (teaching staff)	Post Pilot Focus Group (undergraduates)	Post Pilot Survey (undergraduates)
1	1	1	4	2
2	1	1	9	58
3	1	1	8	7
4[*]	1	1[**]	-	-
5	2	1	10	7
6	1	1	5	11
Total	7	6	36	85

* Medical school unable to proceed with pilot

** This interview was not a post-pilot interview, but an interview to find out why Site 4 was unable to proceed with the pilot.

5.2. Objective 1 – To consider whether the teaching materials are suitable and appropriate

To gather evidence in relation to this objective we used data from the interviews with course tutors and from the questionnaire completed by medical undergraduates.

5.2.1. Perspectives of course tutors

The key themes that arose from the analysis of the semi-structured interviews with course tutors are summarised in Figure 1.

Figure 1: Thematic Map – Objective 1
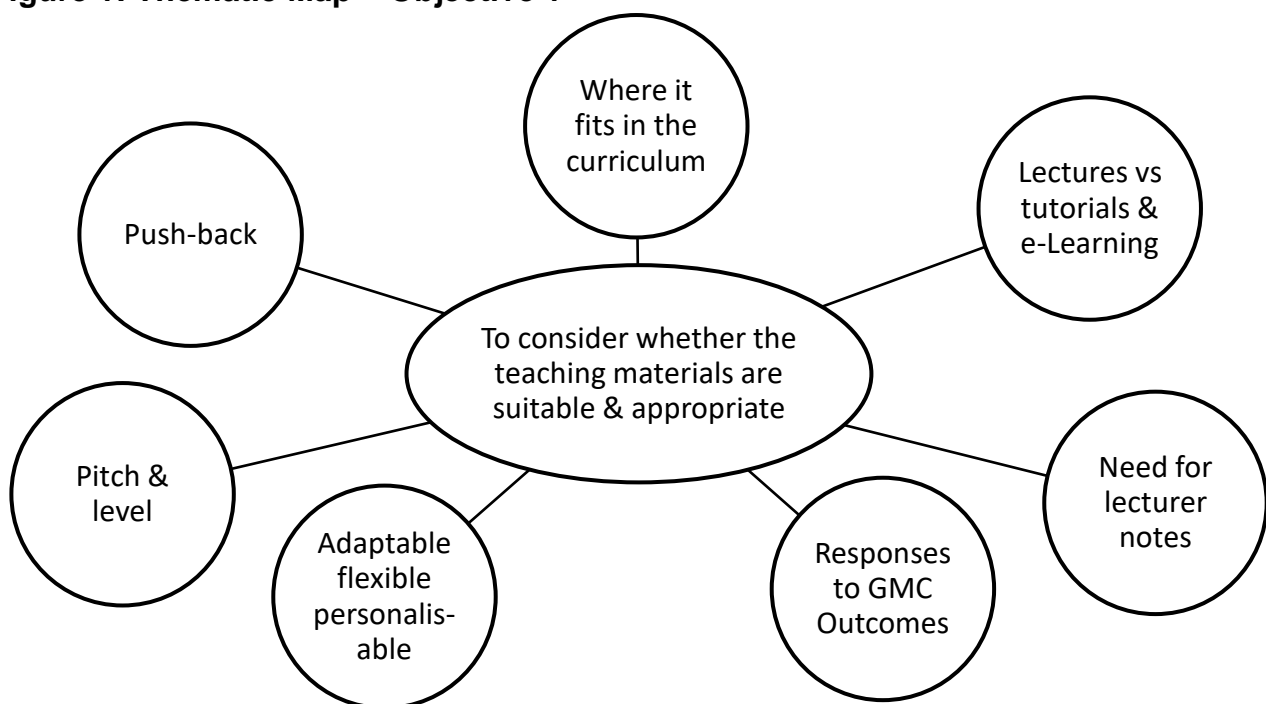
Where it fits in the curriculum

The undergraduate course tutors were asked where they felt the teaching resources would best fit within the curriculum in their medical schools. Prior to teaching the resources, having viewed the teaching materials, the course tutors suggested that the resources would most suitably be incorporated into public health, lifestyle medicine within occupational health as well as general practice:

> *I think it would probably have to be within the general practice to [inaudible] medicine module on our course, I think. In looking from a sort of first assessment primary prevention type approach to the problem, you know, so we have a module which is general practice and public health medicine*

so that would be where we could facilitate learning definitely.

The above tutor spoke about the resources fitting in general practice and highlighted the possibility of the relevance of the materials in public medicine. The following tutors spoke about the health and work resources having salience within lifestyle medicine within the specialty of occupational health, with the second tutor suggesting that the resources would have relevance with topics on illness, disability and work:

I think the one that I was going to go down was the occupational lecture. …So in terms of my role here I've really tried to help develop a lifestyle medicine theme and I've been quite successful in it and we all sort of felt this could sit very nicely within that. So we've managed to shift a few things around and get the…try and get the occupational…sort of dealing with things…as well as dealing with the occupational aspect and that kind of stuff it's also an emphasis on stress and work related stress and I think that would be a really good one to deliver within the lifestyle medicine theme.

Yeah, I like all the topics and I think they're all important however I thought the ones I picked linked to what we're…I'm teaching in my module at the moment. So in my module at the moment we do talk about life changing illnesses and things like that so that's obviously linked with the disability thing, you know, about work and disability and health. So, I thought that sort of linked in with what we've been doing.

Some of the tutors commented that the materials would also be suitably delivered in the public health curriculum:

I think with this I could see it fitting into some of the teaching around public health for instance and in fact when I gave the talk the preceding lectures were public health people who I was chatting to and actually some of the research that is being done in their part of the University actually overlaps with this and so they were actually expressing an interest in doing this themselves in future

Yes, so I led the improve health course, which is the public health teaching. We've always had an occupational health element in that which covered a significant bit of the content here but the additional bits like the fit note that

sort of thing that's all new. But it tied in very nicely with this being public
health delivery because it's related isn't it…

In summary, the course tutors expressed the view that the health and work resources were appropriate and suitable for delivery, and could be incorporated into different parts of the medical school curriculum.

Lectures versus tutorials & e-Learning

The course tutors commented about which teaching delivery setting they felt would be the optimal environment for the health and work resources to be taught. The responses from the course tutors suggest that there was not an ideal teaching setting:

> *…If these were…[if] somebody [was] to click through and use effectively as*
> *e-learning then they're brilliant, you know, it's different materials for different*
> *contexts and different purposes isn't it.*

The above tutor indicated that on-line distance learning would be an appropriate teaching setting. Yet, drawing from the comments from the tutor below, he felt this would not be suitable, rather small group teaching would be a far better environment for teaching delivery:

> *… I think if you did this in a lecture format it's not interactive enough. I think*
> *if you did it as sort of distance learning as sort of online module as something*
> *a lot of students won't take part in those, won't engage in those. So I think a*
> *tutorial is a good way of doing it.*

The tutor from Site 5 stated that in fact he believed that the teaching resources would not be appropriate for on-line distance learning, or even a more traditional teaching method such as in a lecture format. He argued that the tutorial context was, what he felt, the optimal setting. His colleague also confirmed this in an interview prior to delivering the teaching resources, when he commented that, "…having it delivered by way of a tutorial setting by an engaged tutor perhaps it would be the most helpful or fruitful way of delivering it". This also highlight that perhaps this medical school (Site 5) had a preference for facilitating learning in small group tutorial settings.

One course tutor commented that the health and work resources were also appropriate for use for facilitating learning using a more traditional style and format through a lecture:

> *…[they] had discussions with me…it was interactive enough to get them*
> *engaged but it wasn't a big onerous deal for them but I think if we did it*

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*using what would seem like better teaching methodology. So if we did
small group work etc., we might actually find that learning, and the attitude
changes was actually less, than using a slightly more basic teaching
methodology, weirdly.*

Site 3 Post-pilot interview– Course Tutor

This course tutor explained that he felt that if a 'better' teaching method such as small group learning were used, he believed that there would be far less impact with student learning, in comparison to the more 'basic' teaching method such as through large group lectures.

What the statement above indicated is that the course tutors felt that there was not an identifiable optimal teaching setting, and in fact the health and work teaching resources were appropriate across a variety of teaching environments.

Need for lecturer notes

The lecturers were adamant that they required additional lecturers notes to help them with delivery of the health and work teaching materials:

*…I just wonder, you know, obviously we see the slides but is there anything
else to go round it or with it for the tutors that gives them a bit more information?*

And I would like the teacher background notes, you know…

Site 4 Pre-pilot interview – Course Tutor

Following teaching, one of the course tutors commented how useful they found having the additional lecturer notes:

Interviewer: Did you find that the lecture notes helped you…?

*Interviewee: Yeah they did definitely, yeah. Absolutely, they really helped
as well. And there was quite an extensive amount that was written so I think
the health and safety executive management standards were actually under-
neath the common conditions caused by work…I can't quite remember, but
yeah, it really helped, they really helped.*

Site 2 Post-pilot interview – Course Tutor

The course tutor explained how helpful the additional information was on an area that he was not particularly familiar with. The lecturer notes could also serve to allay any concerns course tutors may feel if they had anxiety or worries over teaching a subject that they were unfamiliar with.

Response to GMC Outcomes for Graduates

The majority of course tutors found having the GMC Outcomes for Graduates (2018) a helpful reference point, which is highlighted by this statement below:

> *There's pictures; they're colourful, you know. They link quite carefully, they show you that they link to the GMC outcomes which is important, you know, so…I think it's quite good in that way.*
>

Only one of the course tutors found reference to the GMC Outcomes less helpful, and in fact found them an unnecessary additional slide which the undergraduates would pay little attention to:

> *But the main thing is I've never put GMC outcomes into a slide and also I don't think…I don't think they look that strong that the actual link to the outcomes it's sort of ok but it's I don't think it's going to make a student think suddenly this is going to make sense*
>

Adaptable, flexible and personalisable

The course tutors stated that they were able to use the slide-sets to complement the topics they were planning on delivering. The course tutor in Site 5 planned to use the slides during the undergraduates' general practice placement, and therefore decided to use the topics on *Work and health, Talking about work with patients,* and the *Fitness for work and the fit-note*, thereby adapting the slides to suit his teaching context. He talked about the relevance of all three:

> *I decided I want them to have that teaching now before we moved on really so I chose the slide sets. Firstly the one to explain why work and health is so important, so why the effects of unemployment and the benefits of having a job in terms of your general health and then I introduced the shared…I wanted to introduce the shared decision making tool so I picked the slide set that addressed that as well*
>

Other tutors spoke about wanting to use the slide-sets to facilitate learning by sticking closely to the content and personalising the slides by drawing from personal experiences. This tutor used the topics on *Work and health* and *Talking about work with patients*:

> *…But then what I'll try and do is stick fairly closely to the slides but again potentially just a little bit of narrative about in my own experience when it*

comes to almost bringing some of it even more to life really.

<div align="right">Site 3 Pre-pilot – Course Tutor</div>

Another tutor spoke about using the materials flexibly as a reference point, but also personalising the slides by prefacing with their own examples:

…whenever I deliver teaching I tend to have little rambles. [Laughter]. I find it quite difficult to stick to a script exactly I think and I would certainly want to go…I'd want to use the key references, the key knowledge, the key concepts but maybe kind of structure it slightly differently

<div align="right">Site 6 Pre-pilot interview – Course Tutor</div>

Pitch and level

Following the delivery of the teaching sessions, the tutors were asked whether they felt the slide-sets were suitably designed for different levels of undergraduate teaching. The majority of tutors expressed that they felt it was appropriate:

I think, yeah…so I think the resources we used at this stage, year three, were perfect. I think in terms of getting more room in the curriculum in year three to do more on it I think would be difficult. I think the curriculum's quite full without adding more around this topic.

<div align="right">Site 5 Post-pilot interview – Course Tutor</div>

I think the materials were actually well designed for doing at different stages in the course and the students actually engaged with the discussion bits well so…which was a sign that it wasn't something that was whizzing over their heads or anything. So they did…they did join in and despite it being last lecture of the day they actually showed signs of being awake and interested.

<div align="right">Site 3 Post-pilot interview – Course Tutor</div>

My personal preference for…it's really difficult to design a resource that is used by everybody and I think on the whole they are very good. But I think… I imagine that they will have to be adapted a bit for each setting just to make sense within each context. So…but if you are happy to have them as a resource that's there, you know, here's the information and just kind of cannibalise it and put it together and create some flow and story around the core content

<div align="right">Site 6 Post-pilot interview – Course Tutor</div>

Only one tutor expressed the view that he felt that the materials could have been aimed at a higher level, but he qualified this statement with an explanation that he did not think this was overly important:

> *I think probably could have been a bit more advanced, yeah, definitely think it could be a bit more advanced. And I think as well…I know we probably shouldn't dwell on it too much…*
>
> <div align="right">Site 2 Post-pilot interview – Course Tutor</div>

Push-back

Lastly, one of the course tutors stated that she felt some of the undergraduates may raise an issue with the content of the material, which could be perceived as addressing a government issue rather than dealing with patient care:

> *I could imagine some push back from the students around the slightly political aspect of work and health, and because the disability assessment stuff and fit notes and that kind of thing. I can imagine some of our students challenging it and saying well "hang on a minute we're…you're teaching us to address a government, a political point here of reducing unemployment figures and I'm not sure I want to be manipulated like that". I can really imagine some of our students saying that.*
>
> <div align="right">Site 6 Pre-pilot interview – Course Tutor</div>

Although this issue was raised by the course tutor prior to teaching the resources, drawing from interviews and focus group feedback from the other course tutors and undergraduates, these views were not expressed in their assessment of the health and work materials in general.

5.2.2. Perspectives of medical undergraduates (survey)

Table 4 shows means of student satisfaction and importance rating for each of the four domains, which suggest they were satisfied with the teaching session in terms of ambience, tutor, appropriateness of resources and consistency and considered these important. Course tutor satisfaction was particularly high and this was also rated as most important. Mean satisfaction over the four domains was 4.49/5 and mean importance 4.38/5. There did not appear to be much variation between sites. Figure 2 shows that the students were highly satisfied with the delivery of the lectures and the materials. Their responses show little variation with a level of satisfaction for each question higher than 85% (Q1 89.8%; Q2 94.9%, Q3 85.9% and Q4 87%). Figure 3 shows that the students found these aspects of consistency, ambience and appropriateness important to very important (Q1 87.6%, Q2 85%, Q3 83.3%, and Q4 80.1%).

Table 4. Average satisfaction and importance scores (n=85 undergraduates)

	Item	Satisfaction	Importance
Q1	The sense of competence, confidence and professionalism conveyed by the ambience during the lecture or tutorial	4.47/5	4.28/5
Q2	The sense of competence, confidence and professionalism conveyed by the tutor or lecturer	4.68/5	4.48/5
Q3	The appropriateness of the exercises and case studies	4.41/5	4.44/5
Q4	The consistency of teaching quality irrespective of whether the tutor or lecturer was teaching health and work topics compare to the other material taught in that module	4.43/5	4.34/5

Figure 2: Proportion (%) of students' satisfaction with the delivery of the lecture and slides
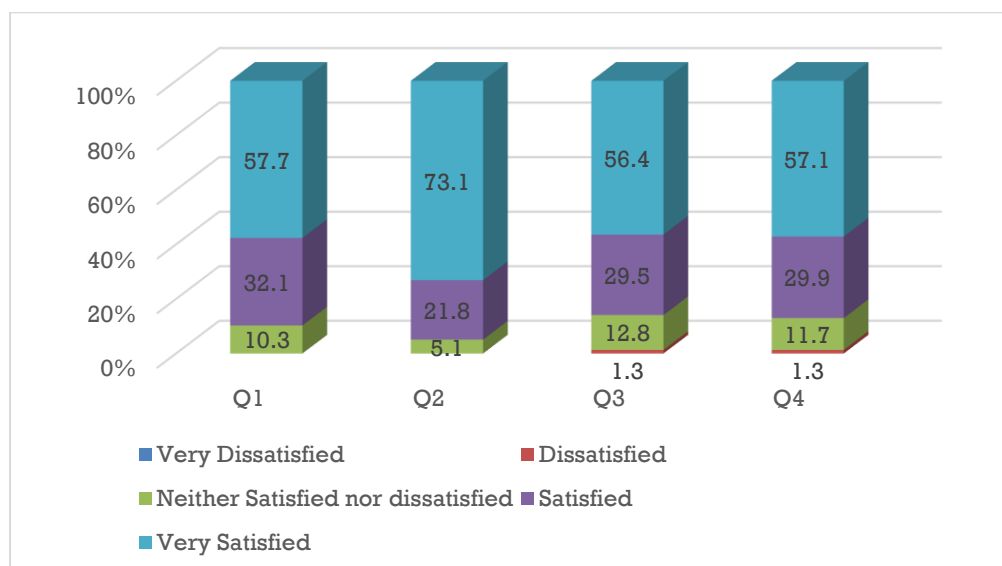
Figure 3: Level (%) of importance with the delivery of the lecture and slides
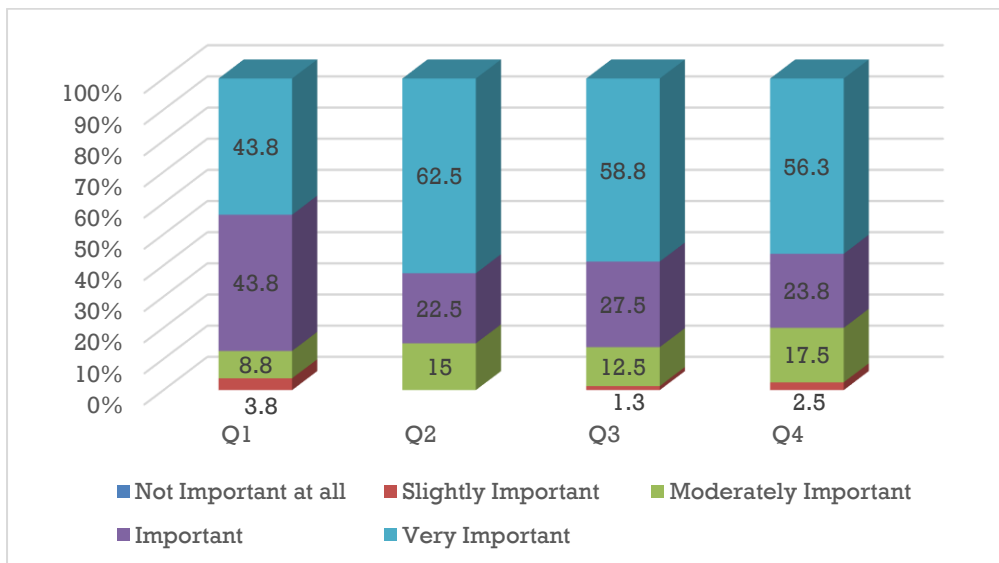
5.2.3. Summary: Objective 1 – To consider whether the teaching materials are suitable and appropriate

The key findings of our evaluation in relation to whether the teaching materials were suitable and appropriate are below:

- Incorporated in the curriculum in:
  - Public Health
  - Lifestyle medicine
  - Illness, disability & work
  - General practice

- GMC Outcomes for Graduates:
  - Most lecturers commented that mapping onto GMC Outcomes was helpful

- Adaptable, flexible and personalisable:
  - Lecturers delivered the slides as they were given, while others personalised them drawing from their own experiences

- Pitch / level:
  - Most lecturers commented that the resources were appropriately designed so could be adapted at different stages

- Satisfaction and importance of slide-sets and delivery:
  - Both were rated very highly by undergraduates

5.3. Objective 2 – To help identify which resources have worked and which sections need strengthening

We have drawn from the pre-pilot and post-pilot interviews with course tutors to explore this matter further. The thematic map below shows the key themes that emerged from the data:

Figure 4: Thematic Map – Objective 2
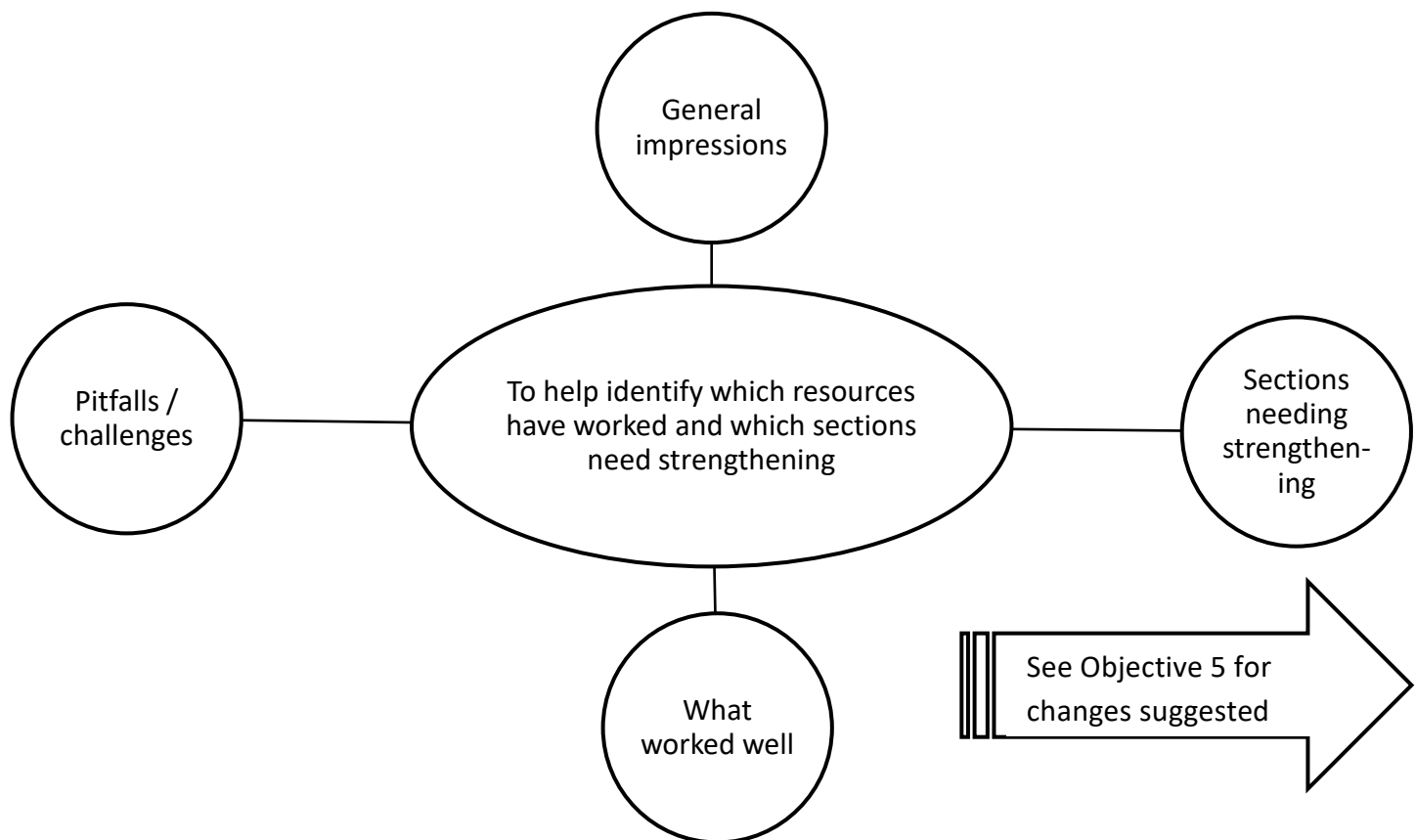
5.3.1. General impressions

The course tutors were very complimentary in their responses to the slide-sets they chose to use. Prior to teaching the slide-sets, the course tutors provided the following feedback of their general impressions:

> *Yes. I thought they were good. I thought they were clearly presented. I think it's good that the outcomes we put very clearly at the start. I like the fact that it was linked to the GMC outcomes for graduates. Something I try to do with presentations I write myself because I think that helps the students to see why we're doing it. And I think the way the sessions flowed…followed a natural progression and then the learning points at the end were quite good; the summary learning points at the end were helpful.*

Well I thought they looked like they've had a lot of effort put into them. I thought they looked professional...I like the fact that there's like tasks to do and things to ask. They are a bit interactive. It's not just death by Power-Point, you know, I quite like there's little things to do.

Site 4 Pre-pilot interview – Course Tutor

…the breadth of the content is really good because it does highlight a lot of the different issues that people might not even consider really if they think about working out, you know, once you give it a minutes thought, disability is obviously incredibly relevant but I wonder whether for students, disabilities would be an obvious part of teaching and working out. So I think it's really good to have breadth of content there.

Site 6 Pre-pilot interview – Course Tutor

I thought it was really good and…so, I'm relatively comfortable standing up and talking without much preparation that didn't…I'm fairly relaxed using a slide set but I think they were very…very easy to use and in terms of using in a lecture theatre I think the right balance between information giving and interactivity and the notes that accompanied them were very good and again made it easy to use because what the notes did was allow me to look as if I knew something about it…

Site 3 Pre-pilot interview – Course Tutor

The course tutors commented that the slide-sets that they piloted were: clearly linked to the GMC's Outcomes for Graduates, which highlighted to medical undergraduates why they were being taught these topics; looked professional; had tasks embedded within the sets; provided a breadth of coverage on new important material with a focus on disability; and struck the right balance between imparting new information that was broken up with interactive exercises.

Following piloting their chosen slide-sets, the course tutors also reflected upon how they felt the sessions went. The course tutor at Site 2 commented upon which aspects from his session on *Recognising illness that may be caused by work* were particularly successful:

So I think first of all things that worked really well was identifying that muscular-skeletal disorders and stress, are two of the top two commonly reported illnesses and I think that's…they're associated with work and I think that's really important to outline so I think that was really good. I really enjoyed the positive and negative aspects of work because often we think about, we're not necessarily able to get them down on paper as what they're put on there so that was really good as well. And again I've already mentioned

the pressure performance curve which I think is…I've never seen before but makes so much sense when you actually look at it so I think they were really really good slides that were put in there.

<div align="right">Site 2 Post-pilot interview – Course Tutor</div>

Another tutor stated that he felt the slide-sets on *Work and health* and *Talking about work with patients* were easily incorporated into his existing session:

…although the resource was very helpful and I was…it was easy for me to take it to the lecture theatre and deliver it and I had gone through the slide before the session just to make sure they were running smoothly and so it was over all a very good resource

<div align="right">Site 1 Post-pilot interview – Course Tutor</div>

The course tutors gave very positive feedback on the topics they had piloted, whose comments were extremely favourable on the content, design, interactive exercises and the overall ease at which they used them.

5.3.2. What worked well

Moreover, the course tutors spoke about many aspects of the slide-sets that proved to be especially fruitful in the delivery of their sessions, which they commented upon in their post-pilot interview:

I think they were very…very easy to use and in terms of using in a lecture theatre. I think the right balance between information giving and interactivity and the notes that accompanied them were very good, and again made it easy to use because what the notes did was allow me to look as if I knew something about it…

<div align="right">Site 3 Post-pilot interview – Course Tutor</div>

I think it's easy to navigate, I think it's…you can edit it, you can change the slides to fit what you're doing. I don't think it…I wouldn't say it needs very much.

<div align="right">Site 5 Post-pilot interview – Course Tutor</div>

It works well with the delivery of teaching within the medical school as well. I mean all the things that we deliver and examine do comply with how the module is being taught. So it runs with the philosophy of teaching in the medical school at the present time.

<div align="right">Site 1 Post-pilot interview – Course Tutor</div>

5.3.3. Pitfalls and challenges

One of the course tutors raised a specific point describing a hypothetical situation, when tutors maybe be tasked to teach health and work, when they had no prior expertise or experience of the facilitating learning on this topic. He argued that the tutors may feel an element of concern or anxiety:

> *…to ensure that there's sufficient detail and resources, and knowledge*
> *for the people delivering the sessions in order to make…to make the*
> *sessions as useful as possible for the students… I found that asking*
> *people to do things where they don't feel like it's their area of expertise*
> *sometimes generates a little bit of anxiety in the teachers or kind of 'I can't*
> *really teach them that because I don't really know very much about it'.*
> *So…that's just an area that might be worth thinking about.*

<div align="right">Site 5 Pre-pilot interview – Course Tutor</div>

The concerns raised by this course tutor were allayed when he was reassured by the researcher that there were lecturer notes available to help course tutors in case they needed further information and guidance about running a session on health and work:

> *…I think having tutor notes is really helpful, having put together a*
> *number of teaching programs and tried to disseminate them I think*
> *giving people slide sets is good but they are often used quite differently.*
> *If people haven't got a guide to go with them they actually, I think, it*
> *turns out that's something you've already done.*

<div align="right">Site 5 Pre-pilot interview – Course Tutor</div>

The availability of lecturer notes, as noted, was seen as a vital resource to help tutors, both familiar and unfamiliar with health and work topics, to aid their knowledge-gap and support them to deliver the slide-sets.

5.3.4. Summary: Objective 2 – To help identify which resources have worked and which sections need strengthening

The key messages in relation to this objective obtained from the findings were:

- Positive feedback received from course tutors on:
    - Interactive sessions
    - Easy to use and deliver
    - Linked to GMC Outcomes for Graduates 2018
    - New content provided

- Complies with medical school teaching – both spiral & non-spiral curriculum

- Lecturers who were less familiar with teaching health and work topics had the aid of the lecturer notes to supplement their knowledge gaps

5.4. Objective 3 – To gauge from undergraduates' views and perspectives whether the teaching slides were useful / what topics they found less useful

To assess this objective we drew from the post-pilot focus groups with the medical undergraduates and the results of the post-pilot student survey.

5.4.1. Themes emerging from the medical undergraduate focus groups

The thematic map in figure 3 shows the key themes that emerged from the focus groups.

Figure 5: Thematic Map – Objective 3
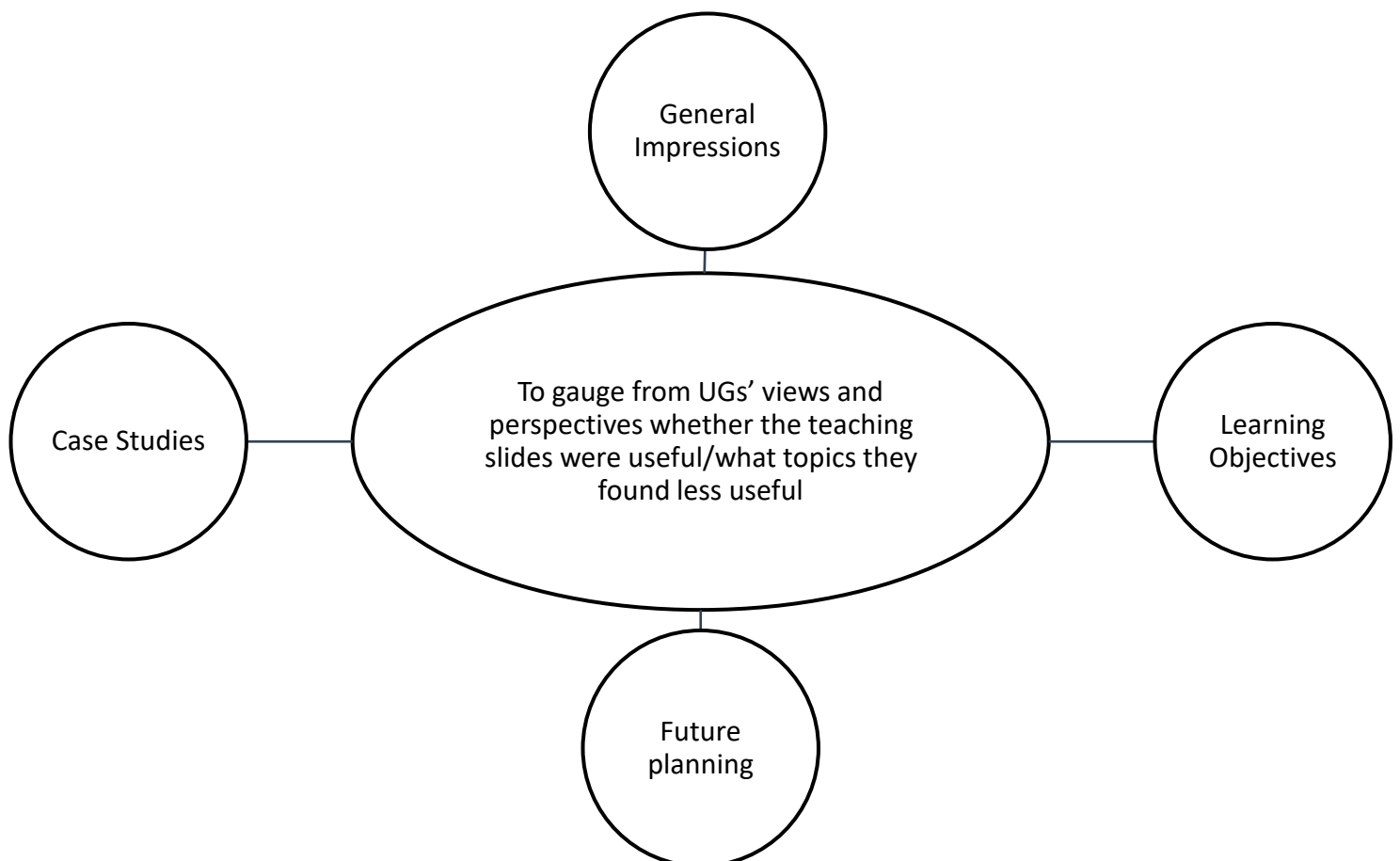
General impressions

The medical undergraduates who participated in the focus group shared their general impressions about what they thought about the slide-sets:

> *Yeah, I thought they were good. I thought there wasn't too much information on each slide and it was quite easy to understand. You didn't have to think to hard about what it was saying it was straight to the point of what we need to know. And each one was not too long so, yeah, I thought they were good.*

> Site 5 Post-pilot focus group – Year 3 Undergraduate Student

> *I quite liked the colour scheme and I quite liked the formatting of the slides. There was a good amount of information density on each slide…*

> Site 1 Post-pilot focus group – Year 2 Undergraduate Student

> *I thought it was interesting on the first slide it says long version. We all felt was quite a short session.*
> Site 2 Post-pilot focus group – Year 2 Undergraduate Student

> *…it was easy to pick up the important bits and retain that so that's definitely something to praise.*

> Site 1 Post-pilot focus group – Year 2 Undergraduate Student

> *…it completely changed my perception on how important work is on the patient's health. Because I used to look at the sick, or the fit note and be like it's not that relevant but actually it's…it can make up the biggest part of the consultation and part in someone's life…*

> Site 5 Post-pilot focus group – Year 2 Undergraduate Student

The undergraduates commented that they thought the slides were easy to follow, well-presented, without too much heavy text on them. One undergraduate commented that they thought the long version of the slides could in fact have been longer, questioning whether a short version was necessary. In addition, the last comment showed that this respondent had not previously appreciated the importance of work on health and their views of the subject had changed.

Learning objectives

Some medical undergraduates commented upon the learning objectives:

> *I'm the opposite, so…when I look at a lecture I look at the learning objectives
> because I look at this is what I need to know*

> Site 2 Post-pilot focus group – Year 2 Undergraduate Student

However, other medical undergraduates were less concerned about whether the learning objectives were achieved:

> *Myself I never looked at the learning objectives. I find them a slide of
> information I don't need to know.*

> Site 2 Post-pilot focus group – Year 2 Undergraduate Student

> *I think the first one and the last one; the characteristics of good work and
> discussing it with the patient were covered a lot. It might just be that I've
> forgotten. I don't remember much about the other two.*

> Site 1 Post-pilot focus group – Year 2 Undergraduate Student

The two above statements suggested that some medical undergraduates were ambivalent about whether the learning objectives had been met, and others did not remember at all. There are limitations in terms of drawing from student responses to find out what they thought about the learning objectives due to their vague and ambivalent responses.

Case studies

Two medical undergraduates commented on case studies. One, from Site 5, commented on the case studies that were used during the session on *Recognising illness that may be caused by work*, saying that these were interesting and well-presented:

> *…the case scenarios were so interesting it kept, well it kept me awake
> and kept me interested*

> Site 2 Post-pilot focus group – Year 2 Undergraduate Student

Another student from Site 6 indicated that in their session on *Health and work*, they felt they needed more case studies in their session:

> *…if you wanted a bit more engagement maybe at the end have one or two case studies and do small group work at the end of the content*

<div align="right">Site 6 Post-pilot focus group – Year 4 Undergraduate Student</div>

In response to the feedback from this student, we added extra case study exercises to the topic, in particular we have added this at the end of the slide-set.

Future planning

The medical undergraduates reflected upon the sessions that had been taught and what parts year of medical school they felt the health and work topics would be best suited to:

> *I suppose if you wanted to introduce it just as a little topic you could throw it into one of our CHDD (compassionate caring holistic diagnostic detective) sessions, because that's more about the patient thing. But I don't think you'd be able to cover it in much depth, it would be more like let's have a think about this and then if you want to add on to that then come back to that in the third year but I think first year might be a bit early.*

<div align="right">Site 5 Post-pilot focus group – Year 3 Undergraduate Student</div>

This student believed that teaching this area to first year undergraduates was too early on in their curriculum, and thought the third year would be more appropriate. This resonates with the comments below from another student:

> *…if they want to implement it in their undergraduate curriculum obviously it's too late for us because they can't assess us so it would have to be in year three or year four.*

<div align="right">Site 3 Post-pilot focus group – Year 2 Undergraduate Student</div>

The two medical undergraduates' comments concur in suggesting that including this content later on in years three and four would be more suitable. However, this view seems to differ from that of the course tutors who felt that the health and work slide-sets could be used at different stages of the curriculum.

5.4.2. Perspectives of medical undergraduates (survey)

Medical undergraduates' responses to the questions in the survey about how helpful, thorough and complicated the slides are shown in Table 5. The responses were provided

on Likert scales 1-7 (not at all helpful to very helpful, not at all thorough to very thorough, and simple to complicated). The mean response was 5.51/7 for helpfulness, 5.31 for thoroughness and 2.53/7 for complicatedness, suggestion that the medical undergraduates on average thought the slides were fairly helpful and thorough, and relatively simple. The proportion of students that found the slides helpful (from moderately helpful to very helpful) is 82.7% with less than 5% finding the slides not useful at all. The proportion of students that found the slides thorough (from moderate thoroughness to very thorough) is 72.6% with less than 3% finding the slides not thorough at all. The proportion of students that found the slides complicated or very complicated is less than 5%, while 76.3% found the slides moderately to not complicated at all.

Table 5. Medical undergraduates' assessments of slide sets

	Item	Overall
1.	how helpful did you find the slides?	5.51/7
2.	how thorough did you find the lecture slides?	5.31/7
3.	how complicated did you find the lecture slides?	2.53/7

5.4.3. Summary: Objective 3 – To gauge from undergraduates' views and perspectives whether the teaching slides were useful / what topics they found less useful

The key messages from these findings are that undergraduates

- Thought that the resources were visually appealing which struck a balance with sufficient information on the slides and helpful content

- Felt that the resources had changed their perceptions about the importance of health and work

- Found the case studies interesting, but some further case studies were required to facilitate learning

- Thought the resources were helpful, thorough and not too complicated.

5.5. Objective 4 – To explore whether the learning objectives were achieved

To obtain evidence on whether the learning objectives were achieved, we drew from the post-pilot interviews with course tutors and the undergraduates post-pilot survey to provide evidence.

5.5.1. Evidence from post-pilot interviews with course tutors

We have reported tutors' feedback without requiring any thematic mapping because there was little variation between tutors in their responses. The majority of the tutors (four out of five) reported that the learning objectives had been achieved:

Yeah, I think the…yeah, the overarching learning objectives, there were four, when applying them describe the range of factors that determine health, that's the Dahlgren and Whitehead thing; identifying work as the key determinant of health, I think the slides achieved that; and setting out the evidence, again it was nicely picked out evidence and so it did that. And then justifying why health professionals should support to return to work really followed on from the previous three points that…

<div align="right">Site 3 Post-pilot interview – Course Tutor</div>

Interviewer: Thinking about the learning outcomes, not the GMC outcome, do you think that the slide set met those learning outcomes?

Interviewee: Yes.

<div align="right">Site 5 Post-pilot interview – Course Tutor</div>

Yeah, exactly. So for example I think that's what I'm getting at addressing the learning outcomes completely I think for things like [short break] stuff like the range of factors that determine health. That learning objective feels quite big and there's a lot that I already cover around that in the public health course of course because think about wider determinants, so…work fits really nicely in there and worklessness and health and work and work and health and the effects, like that

<div align="right">Site 6 Post-pilot interview – Course Tutor</div>

I think it showed very well and it achieved its objective considering this is the first time this is being done.

<div align="right">Site 1 Post-pilot interview – Course Tutor</div>

The course tutors reported that the learning objectives were met, with one course tutor in Site 5 providing explicit reference to specific areas where and how these had been

achieved during the sessions on *Work and health* and *Talking about work with patients*. Other tutors (Site 6) reported that the learning objective was broad enough to link in topics that had been covered previously with new material. While the course tutor in Site 1 indicated that considering the session was the first time it had been delivered, he was satisfied that the learning objectives had been achieved.

5.5.2. Evidence from the survey of medical undergraduates

The results of the survey of medical undergraduates suggested that they found the course documents and case studies and exercises had facilitated their learning well. They also reported a high level of agreement that the learning activities required problem-solving skills and critical thinking (Table 6). Figure 5 shows the proportion of students that stated agree to disagree with each of the statements. Generally, the proportion of students that stated strongly agree and agree, that the materials and case studies facilitated their learnings for each of the questions is higher than 85.8% (Q1 95.3%, Q2 95.3%, Q3 85.8%, Q4 87.9%). The proportion of students disagreeing with these statements varied between 0 to 2.4%.

Table 6: Medical undergraduates' average levels of agreement with statements about facilitating learning

	Item	Mean score
Q1.	The course documents - lessons or notes used in this class facilitated my learning	3.25/4
Q2.	The case studies and/ or exercises in this course facilitated my learning	3.46/4
Q3.	The learning activities in this course required application of problem solving skills which facilitated my learning	3.21/4
Q4.	The learning activities in this course required critical thinking which facilitated my learning	3.13/4

Figure 6: Proportion of students who found that the slides facilitated their learnings

5.5.3. Summary: Objective 4: to explore whether the learning objectives were achieved

The key messages from our findings in relation to objective 4 were:

- The learning objectives reported to have been achieved by the tutors

- The slide sets were commended by the tutors because although it was the first time the sessions were delivered, student learning was achieved

- The evidence set out in the slides helped to achieve learning objectives

- Undergraduates reported that the sessions facilitated their learning

5.6. Objective 5 - To make changes to the teaching resources before they are distributed or offered widely

The main purpose of Objective 5 was to make changes to the teaching resources before they were distributed or offered widely. We have drawn from the pre and post-pilot interviews with course tutors to explore this matter further. The thematic map below shows the key themes that emerged from the data:

Figure 7: Thematic Map – Objective 5
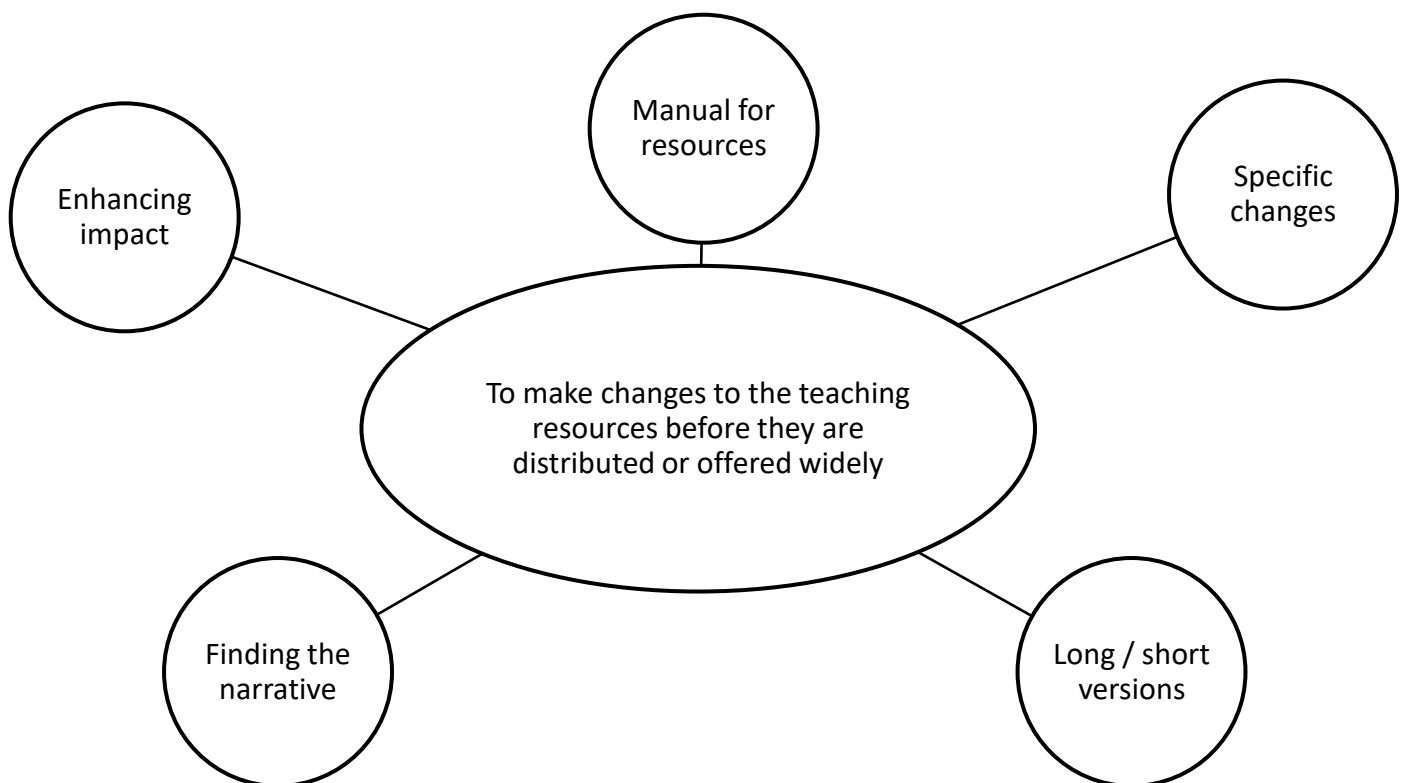
5.6.1. General observations and future planning

The above themes, as shown in Figure 4 (except the theme on 'specific changes') will be discussed in this section, which reports upon the responses from the course tutors on their overall general impressions on the slide-sets, who also provided ideas on how to go forward in order to maximise adoption and impact.

One course tutor suggested that to optimise impact and ensure that all medical schools were aware of the resources, he suggested creating a **manual of resources** that could be developed alongside GMC guidelines:

…so you could also have a small manual of work and health curriculum for UK medical school according to GMC guidelines which would be four or five or six pages of resources which can be formally published and submitted to all medical school along with the resources so they can use that resource and the guidelines and develop the modules themselves as well so you help them make a start.

<div align="right">Site 1 Post-pilot interview – Course Tutor</div>

The purpose of the manual would be to provide guidelines to medical schools that would enable them to use the materials to develop their own modules. One course tutor spoke about it being hard in **finding the narrative** when using the slide-sets:

To be honest I found it a bit tricky when I was first approaching the slide-sets trying to work out exactly how all the different slide-sets were intended to be used…I couldn't see a natural…I couldn't understand the natural flow. But given that I knew I only had an hour to deliver the content I had to be quite ruthless and then really pick and choose how I arranged them and which ones I included to make sure that it would make sense to me as a presenter so that I had a flow. So once I had done that it was ok because I'd picked out the slides that I felt would work as a story for me. So that was ok.

<div align="right">Site 6 Pre-pilot interview – Course Tutor</div>

In terms of finding strategies to help course tutors find the narrative, perhaps the manual for resources would help to give a framework or narrative. The lecturer notes were also available to help give the topics coherence.

Another two course tutors spoke about **enhancing impact** of the slide-sets by creating new resources such as *videos*, *role-playing activities* and *simulated patient teaching* for teaching undergraduates:

Maybe some more, again some actors to do some videos or something rather than the animations. The animations are good but I think actual consultations have a little bit more power… I think role-playing is good because the doctor is practicing on how they would ask questions and how they would respond to patient questions but actually the person role-playing the patient is starting to get a feel what it's like on the other side of that conversation and so it gets them a bit of insight into what it's like to be a patient which is a good thing. [Inaudible] I think if you do too many role-playing it can overdo it. If you do too many role-plays it becomes …they get frustrated with it I think.

<div align="right">Site 5 Post-pilot interview – Course Tutor</div>

But probably the most effective way of helping the students with this would be to have simulated patient teaching with scenarios and so on but how you've done it I think is the right way to try and get things moving. If you try and achieve the gold standard of embedding it into skills teaching and PBL and case based learning cases you'd probably spend for ever getting not very far.

<div align="right">Site 3 Post-pilot interview</div>

Lastly, one course tutor spoke about only having one version of the slides, and not having long and short versions:

> *There is a short version and a long version so I think in between the two sessions there was some repetitions, which is not needed really.*

<div align="right">Site 1 Post-pilot interview</div>

The undergraduates also commented about the existence of long and short versions and whether this was needed. In response to the feedback, and in discussion with PHE and WHU, we will be disregarding having two versions of the slide-sets for the final product, and will only have one version available for the medical schools.

5.6.2. Specific changes

Following the pre and post-pilot interviews, the course tutors recommended very few changes to the slide-sets that were piloted. The following four statements illustrate the full extent of comments received:

Feedback on the topic on *Work and health*:

> *I would have liked to see a bit more of them using case study throughout. That may be changed I don't know. And again the clinical relevance so I think that's, I mean they're similar points really.*

<div align="right">Site 6 Pre-pilot interview – Course Tutor</div>

> *But after a while I thought some of it seemed a bit repetitive. There was some slides that were similar to previous slides and I know they were presenting different bits of evidence but I thought the evidence [inaudible] strongly enough that it didn't necessarily need backing up with further evidence and I think if I was going to use that slide set again I'd take some of the…I would shorten it*

Feedback on the topic on *Recognising illness that may be caused by work*:

> *The case studies need to remain but maybe we could bulk them out a little bit, maybe even add a few more into it. Yeah, I've really liked the background and the case studies. I think there was a few slides I wasn't too sure what the purpose of them was in particular the health and safety executive management standard. I understand that's health and safety related things that's probably quite crucial but I wonder whether there might be a different way of putting that down on the slide.*

<div align="right">

Site 2 Post-pilot interview – Course Tutor

</div>

Feedback on the topic on *Fitness for Work and the fit note*:

> *I suppose maybe a little bit more on some sorts of management, maybe we could have gone into a little bit more on how you help a patient to return to work who is struggling. What sort of services are available for those patients. I suppose the difficulty would be that those services vary nationally. They are not always the same in every area. So having to have an updated list of what services were available in your own area would need providing but that's more work I suppose.*

<div align="right">

Site 5 Post-pilot interview – Course Tutor

</div>

5.6.3. Summary: Objective 5 - To make changes to the teaching resources before they are distributed or offered widely

The key messages obtained from the findings of Objective 5 are as follows:

- It may be useful to create a manual of resources for course tutors

- The impact of resources could be enhanced by using videos, role play & patient simulated learning

- Slide sets could be reinforced with case study learning / elaborating on case studies

- Tutors questioned whether long and short versions were needed

5.7. Course tutors' perspectives about appropriate online platforms

The course tutors were also asked their advice about where they felt was the most appropriate on-line platform to host the resources

> *…I guess online…an online sort of depository for resources would make sense…as long as they are accessible. So for example we have a number of GP surgery and academies who went to Medical School and some of them aren't actually able to access our blackboards because they don't have the rights and have to keep applying every twelve months to get them renewed. So there's actually quite a lot of resources on the student's blackboards it's just actually some of the tutors aren't able to access it. So I guess it just needs to be somewhere everyone knows about and can access.*
>
> Site 5 Pre-pilot interview – Course Tutor

> *…if you could put it on one place where there was other stuff, you know, the first thing then at least everything's there isn't because you've got all your mandatory training there, do you know what I mean, it's all on one site so you've only got one password to remember, you know, otherwise you're going to be busy with the password change thing I think. Everybody will forget their password.*
>
> Site 4 Pre-pilot interview – Course Tutor

The statements above indicate that having the resources on an accessible on-line repository would be preferable. As highlighted by the Site 4 Course Tutor, requiring a password protected login should be avoided, and as indicated by the Site 5 Course Tutor, not needing 12 month access rights that requires renewal should not be put in place, as both these measures restricting access will prevent course tutors using them on-line.

The course tutors we asked whether Health Education England's (HEE) *e-Learning for Health* was a suitable repository. The Site 6 course tutor mentioned that:

> *I think the only danger of that is that it gets lost in the whole…it's a bit of a monster isn't it e-Learning for Health. So yeah…it's an idea, it's an obvious place to put it and yeah it would be sensible to have it hosted somewhere lots of people have access to and they know the format and that kind of thing. So I guess it's just making sure there's publicity attached to that content so that students are aware of it and the usefulness of it. So there's something about signposting I think within any [inaudible] teaching to make sure that these kind of champion the usefulness and the work that's gone into these*

slide sets and it's not just another thing you're learning that's a chore and a tick box.

<div align="right">Site 6 Pre-pilot interview – Course Tutor</div>

This course tutor suggested that although HEE's *e-Learning for Health (e-LfH)* seemed like a possible option, the vastness and breath of content available on it already, may make it hard to find the health and work resources. She suggested in addition to making the resources available on it, drawing attention to it through publicity and raising awareness would help to raise its profile with course tutors and medical undergraduates. Moreover, she recommended that signposting would also be required to champion the usefulness of the work.

Fewer than half the respondents said they had visited e-LfH website. There was a moderate level of agreement that the slides and interactive materials were useful and a moderate level of agreement that the website would be an appropriate place to host the health and work topic. There was a higher level of agreement that the material should be accessible to everyone but a lower level of agreement that it should be accessible only by username and password.

Table 8: Mean responses on Likert scales in relation to helpfulness and accessibility of e-LfH materials (among those who answered these questions)

	Item	Overall
1.	How useful have you found the slides and interactive materials available?	4.8/7
2.	How useful have you found the interactive materials available?	4.77/7
3.	How appropriate would the hub be to host the Health and work topics(s)?	4.83/7
4.	How appropriate would it be if the material was accessible to everyone?	5.29/7
5.	How appropriate would it be if it the material on the hub was usable only by having a username and password to access the material?	3.76/7

Section Six – Summary of findings, limitations and recommendations

6.1. Summary of findings

Both medical undergraduates and course tutors expressed that the structure, content and design of the piloted material integrated into the existing curriculum seamlessly. The pitch/level of the content varied with a mixture of the particpants suggesting it was absolutely at the right level and others feeling there was room for it to be pitched at a more advanced level. While still others noted it served as an excellent foundational resource and an adaptable guide from which more advanced information could be developed from.

The mapping of the GMC outcomes and its presence within the resource material however, led to a difference of opinion. For the most part, course tutors felt having these outcomes at the outset of the lecture was useful as they informed the subsequent material.

Feedback on the resources as noted previously was overwhelmingly positive. Course tutors found the resource and accompanying lecture notes easy to understand and therefore easy to deliver. Medical undergraduates also expressed a similar sentiment, noting the resources displayed the right balance of information, which allowed for an increased ease of understanding. They indicated that the teaching slides introduced and/or increased awareness to the topic of health and work that did not exist prior to this teaching being delivered. Medical undergraduates also recognised the importance of what they were taught and its relevance when they would subsequently enter the workforce. The case studies in particular were identified as helpful as they allowed undergraduates to discuss possible real-life scenarios.

The course tutors, never having taught this material before, felt the learning objectives outlined were achievable; a sentiment echoed by undergraduates. It was noted that the content within the resources were presented flexibly that allowed for the learning objectives to be tenable.

Overall, commentaries in relation to the teaching resources revolved around adding patient simulations and videos to the existing content as well as adding additional case studies to specified topics. There was also discussion from course tutors on whether there was any relevance to having both a short version and long version of the resources and whether the creation of a formal manual developed alongside the GMC guidelines should be considered.

6.2. Limitations

The main limitations are set out below; some of which were identified in a previous risk mapping exercise undertaken earlier in the study.
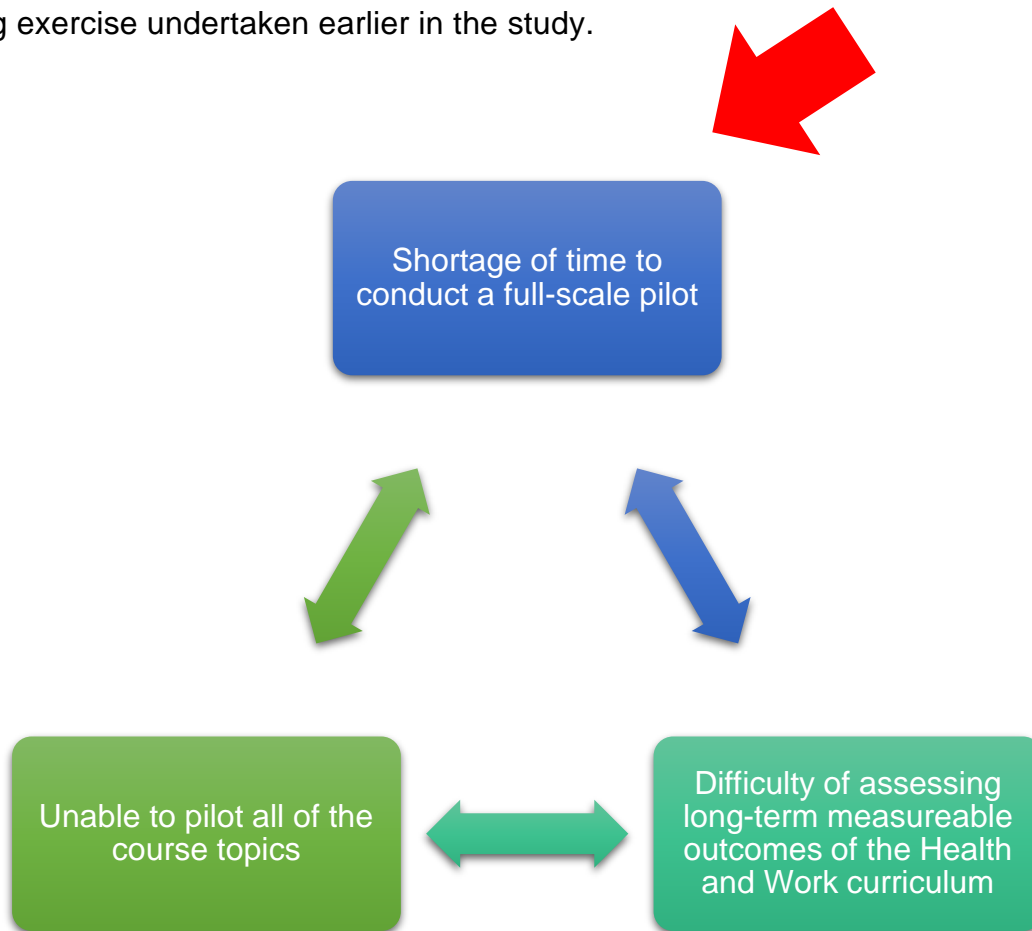
The overall timescale of this project was a major limitation that impacted upon and influenced a multitude of other factors. Although an integral and necessary component to any future innovation and research undertaken by WHU and PHE on this area, this phase of the project was nonetheless comparable to that of a feasibility study.

A longer project period would have allowed for a more extensive recruitment phase. This would have increased the timeframe to invite more medical schools to take part in the pilot in order to ensure a comprehensive methodology was employed where each of the course topics could have been piloted.

6.3. Recommendations

This piece of work serves as a feasibility study to highlight where the next steps for further exploratory work should take place. It is recommended that other research work is undertaken to fully explore aspects that this current phase identified as needing further examination, as outlined below:

- Increasing the number of lecturers and students who receive and comment upon the topics
- Effectively piloting all of the developed Health and Work topics
- Exploring the e-learning concept further i.e. looking at where the content is hosted and how it impacts upon the teaching and learning process
- Developing guidance for student assessment for medical schools on Health and Work topics
- Examining how medical schools implement the topics, for example, in different types of curriculum (e.g.traditional, systems based, timing of earliest clinical contact), which years of study the health and work topics are taught, the extent to which the health and work topics are integrated with other parts of the curriculum (e.g. public health, systems, clinical skills, professionalism)
- Examining the extent to which lecturers adapt the slide sets to fit in with their own curricula
- Measuring the long-term impact of the Health and Work curriculum on newly qualified doctors (i.e. asking the question: does implementing this curriculum change clinical practice?)

In addition, we recommend considering the following actions to promote uptake by medical schools:
- Suggesting that medical schools appoint a Health and Work Champion tutor
- Publicising the resources with a link to where to access them on existing medical school virtual learning platforms (such as on Blackboard or Moodle)

In relation to this project specifically it was suggested that the following be considered:

- A single version of the resource material existing instead of having both a long and short account of the material
- A further investigation into how best this content could be hosted (i.e. open access or login) particularly as many medical undergraduates do not have access to Health Education England's e-learning for health website (the considered host)
- Incorporating the use of videos and patient simulations to enhance the impact of the existing content
- Developing a manual for resources, which is verified by an external committee in line with GMC outcomes.

Section Seven – References

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Section Eight – Appendices

Appendix 1 Terms of Reference and members of the HaWC Group

Appendix 2 Terms of Reference and members of the Ex-APS Group

Appendix 3 Invitation letter for course tutors

Appendix 4 Consent form for course tutors / undergraduate medical students

Appendix 5 Semi-structured interview schedule for course tutors – Pre pilot

Appendix 6 Semi-structured interview schedule for course tutors – Post pilot

Appendix 7 Invitation letter for students to take part in focus groups

Appendix 8 Student focus group topic guide

Appendix 9 Student survey invitation letter / email

Appendix 10 Student survey consent form

Appendix 11 Student survey questionnaire

Appendix 1 Terms of Reference and members of the HaWC Group

PHE HEALTH & WORK - DEVELOPING UNDERGRADUATE CURRICULUM RESOURCES ON HEALTH AND WORK

HEALTH AND WORK CURRICULAR (HAWC) ACADEMIC AND PROFESSIONAL WRITING GROUP

TERMS OF REFERENCE:

These Terms of Reference (ToR) set out the working arrangements of the Health and Work Curricular Academic Professional Writing (HaWC) group in addition to identifying its purpose, membership and ways of working.

1. Purpose

Drawing on the expertise of clinicians, academics, educators as well as lay representatives, the HaWC group will work collaboratively to create a slide set curriculum on the topic of health and work for implementation within medical schools in the UK, as part of the Teaching & Learning undergraduate programme for medical students to equip them in their future role as doctors when dealing with issues such as Work and Health, Health and Work and Work as a Health Outcome.

The External Academic Panel Steering Group (EX-APS) will provide guidance and oversight of the project, as well as endorse the final curriculum content; in the event of the HaWC group being unable to reach an agreement over aspects of the developed curriculum content, the EX-APS group will provide direct input and advice to the HaWC group to overcome the areas of disagreement.

The **overarching aims**:

- Create learning objectives for the curriculum.
- Determine curriculum content and content delivery format.
- Develop a product which fits the intended purpose/ specification and can be adapted across the various learning approaches of medical schools, and with a view on promoting sustained use.

The **specific tasks** will involve:

- Developing and writing the core components of the curriculum based on the candidate topics.

2. Term

This ToR is effective from October 2018 until the completion of the evaluation and dissemination of the findings, anticipated April 2019.

3. Meeting Format

Three face to face chaired meetings on the dates specified below, with virtual contact in between.

    a. Tuesday, October 16th, 2018 **Time:** 11 am – 4 pm **Location:** University of Kent

    b. Tuesday, December 4th, 2018 **Time:** 11 am – 4 pm **Location:** University of Kent

    c. Friday, March 8th, 2019 **Time:** 11 am – 4 pm **Location:** University of Kent[1]

4. Attendance

Attendance by members to these 3 meetings is required to guarantee consistency and to ensure the project aims, objectives and deadlines are adhered to. In the event a member is unable to attend they will need to send a representative and/or circulate completed tasks via e-mail to the group 2 days prior to the impending meeting.

5. Accountability and membership

The HaWC Group is accountable to Project Manager Ferhana Hashem from the University of Kent. Core membership is:

- **Dr Mark Allerton** Work and Health Unit, Department for Work and Pensions.
- **Dr Amanda Bates** Patient Experience and Public Involvement Lead, CHSS, University of Kent.
- **Dr Lindsay Forbes** Senior Clinical Research Fellow Public Health, CHSS, University of Kent.
- **Dr Ferhana Hashem** Programme Manager, Senior Research Fellow, CHSS, University of Kent.
- **Dr Jane Hitchins** Consultant Occupational Physician, East Kent University Hospital Foundation Trust.
- **Sabrena Jaswal** Researcher, CHSS, University of Kent.
- **Patient and Public Involvement Representative #1**
- **Patient and Public Involvement Representative #2**
- **Dr Jacky Moore** Patient and Public Involvement Representative, Opening Doors to Research Group, CHSS University of Kent
- **Emma Palmer** Nurse Manager Occupational Health, East Kent University Hospital Foundation Trust.
- **Dr Dil Sen** Academic Dean & Chair of the Undergraduate Working Group, Faculty of

Occupational Medicine.
- **Dr Naren Srinivasan** Clinical Research Fellow General Practice, CHSS, University of Kent, member of Royal Colleges including the Royal College of Physicians and the Royal College of General Practitioners.
- **Hazel Woodward** Patient and Public Involvement Representative, Opening Doors to Research Group, CHSS University of Kent
- **Helen Wooldridge** Administrative Support, CHSS, University of Kent

6. Roles

The Writing Group comprises the following roles:

- *Administrative Support:* To record notes of the Writing Group meetings and disseminate to members (Helen Wooldridge, University of Kent).

- *Chair:* Co-coordinates the work of Writing Group and its members (TBC).

- *Membership:* To support the work of the Writing group in achieving the stated purpose (All).

- *Project Manager:* Ensures meetings stay to time, to task and meet the outlined objectives (Ferhana Hashem, University of Kent).

7. Amendment, Modification or Variation

This Terms of Reference may be amended, varied or modified after consultation and agreement by its members.

8. Confidentiality

Any personal information shared at the HaWC will be kept strictly confidential by members of the group.

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[1]The actual date of the final HaWC meeting was 7th May 2019.

Appendix 2 Terms of reference and members of the Ex-APS Group

PHE HEALTH & WORK - DEVELOPING UNDERGRADUATE CURRICULUM RESOURCES ON HEALTH AND WORK

EXTERNAL ACADEMIC PANEL STEERING (EX-APS) Group

TERMS OF REFERENCE:

These Terms of Reference (ToR) set out the working arrangements of the External Academic Panel Steering (EX-APS) group in addition to identifying its purpose, membership and ways of working.

9. Purpose

The EX-APS group will act as a 'quality check' for developing the content of the health and work curricula by monitoring key aspects including compliance with:

- GMC standards and training.
- Government's health and work agenda and intended outcomes.
- Evidence of external consultation, correct designation of resources across medical, surgical and core skills and education topics.

The **overarching aims**:

- Checking that there has been scrutiny and approval of proposed curriculum.
- Monitoring the development of subjects/topics that are similar across medical schools and undergraduate curricula for AHPs and Nurses.
- Avoiding duplication and proliferation.
- To steer development of the proposed curriculum in a manner that can be easily integrated and accessible to all undergraduates within the medical schools environment.
- To consider recommendations with a sustainable focus.
- In a governance capacity, to provide a final say on any variation in views on the work being developed by the Health and Work Curricular (HaWC) Academic and Professional Writing Group.

The **specific tasks** will be to review:

- The clarity of aims and learning outcomes for the health and work teaching resources to ensure they appropriately reflect and are applicable across medical education. .
- The effectiveness of the curriculum content and design in achieving the intended learning outcomes.
- The appropriateness of the curriculum content to each stage of the spiral curriculum.
- The appropriateness of the design of assessment to measure achievement of the intended outcomes
- The needs of all students, including those with disabilities and specific learning difficulties
- The teaching and learning strategy
- The resources available to teach including staffing, books and equipment.

10. Term

This ToR is effective from October 2018 until the completion of the evaluation and dissemination of the findings, anticipated April 2019.

11. Meeting Format

2. Three face to face chaired meetings on the dates specified below, with virtual contact in between.
   a. Friday, 2nd November 2018 **Time**: 11am-2pm Location: via GO-To-Meeting
   b. Wednesday, 9th January 2019 **Time**: 11am-4pm Location: London (venue TBC)
   c. Monday 11th or Wednesday 13th March 2019, **Time**: 11am-4pm Location: London (venue TBC)[1]

Attendance by members to these 3 meetings is required to guarantee consistency and to ensure the project aims, objectives and deadlines are adhered to. In the event a member is unable to attend they will need to send a representative and/or circulate completed tasks via e-mail to the group 2 days prior to the impending meeting.

12. Accountability and membership

The EX-APS Group is accountable to Project Manager Ferhana Hashem from the University of Kent. Core membership is:

- **Dr Amanda Bates** Patient Experience and Public Involvement Lead, CHSS, University of Kent.
- **Professor Tarani Chandola** Professor of Medical Sociology, School of Social Sciences, University of Manchester.
- **Professor Debbie Cohen** Medic Support and the Centre for Psychosocial Research, Occupational and Physician Health, Cardiff University School of Medicine.
- **Dr Rob Hampton General Practitioner** Health & Work Clinical Champion, Public Health England
- **Dr Ferhana Hashem** Programme Manager, Senior Research Fellow, CHSS, University of Kent.

- **Dr Catherine Marchand** Research Associate, CHSS, University of Kent.
- **Professor Anjum Memon** Chair in Epidemiology and Public Health Medicine, Brighton and Sussex Medical School & Medical Schools Council.
- **Stuart Moore** Diversity and Inclusion Manager, Health Education England.
- **Professor Stephen Peckham** Professor of Health Policy, CHSS, University of Kent.
- **Prasanthi Sivakumaran** Patient and Public Involvement Representative, Undergraduate in Medicine, Imperial College School of Medicine.
- **Christopher Wan** Patient and Public Involvement Representative, Undergraduate in Medicine, King's College Medical School.

13. Roles

The Steering Group comprises the following roles:

- *Administrator:* To record notes of the Steering Group meetings and disseminate to members. A representative from the University of Kent.
- *Chair:* Co-coordinates the work of Steering Group and its members.
- *Membership:* To support the work of the steering group in achieving the stated purpose.
- *Project Manager:* Ensures meetings stay to time, to task and meet the outlined objectives.

14. Amendment, Modification or Variation

This Terms of Reference may be amended, varied or modified after consultation and agreement by its members.

15. Confidentiality

Any personal information shared at the EX-APS group will be kept strictly confidential by members of the group.

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[1] The actual date of the final steering group took place on 30th July 2019.

Appendix 3 Invitation letter for course tutors

Medical School Course Tutor / National Representative Invitation text to be sent by email or post

<insert sender and recipient address if sent by post>
<insert relevant subject title if sent by email>

Dear *<insert name>*,

Developing Undergraduate Curriculum Resources on Health and Work in Medical Education

We would like to invite you to take part in two interviews for a study on developing undergraduate curriculum resources on Health and Work in medical education in England.
The objective of the project is to create a collection of curriculum teaching resources and slide sets on the topic of health and work. This is to equip students in their future role as new doctors when dealing with issues relating to Work and Health, Health and Work, and Work as a Health Outcome.

We are inviting you because we are keen to have the perspective of medical school course tutors to help understand whether you felt the learning objectives were achieved, and to find out if and where there any changes to the teaching resources needed before they are distributed or offered widely.

If you agree, we will set up the interviews with you. One will take place prior to piloting the health and work teaching resources, and the other will be arranged after you have taught the teaching materials for the pilot. The interviews will last between 30-45 minutes. We will contact you to arrange the interviews at a time of your convenience by telephone, or if you prefer, we would be happy to conduct the interviews face-to-face. All the information collected will be confidential, only identifiable to the project team and anonymised in the analysis. Participation in the study is entirely voluntary. Taking part or not taking part in the study will have no effect on you as a professional. For further information on our research privacy notice please refer to: https://www.kent.ac.uk/chss/contact/privacy.html

At the end of the project all participants will be invited to attend the dissemination workshops. These activities will include one workshop to disseminate and receive feedback from students and medical course tutors on the course content. A second workshop will also be delivered at the end of the project to inform PHE, policy makers, medical schools, medical students and patients.

If you would like to take part in this study, please complete and return the attached/enclosed *(delete as appropriate)* consent form by email to *<insert researcher email>* or by post using the Self-Addressed Envelope.

If we do not hear from you in the next two weeks, a member of our project team will contact you by email and/or telephone to confirm if you are willing to take part or not. If you decide to participate you are free to withdraw from the study at any time.

The project is an initiative funded and supported by Department of Health & Social Care, Department of Work and Pensions joint Work and Health Unit, and commissioned through Public Health England (PHE).

If you would like any further information about the research please contact Dr Ferhana Hashem, Senior Research Fellow: F.Hashem@kent.ac.uk or tel: 01227 824887.

If you are unhappy about any aspects of the study and wish to make a formal complaint, you can do this through contacting Nicole Palmer, Research Ethics and Governance Officer, University of Kent: N.R.Palmer@kent.ac.uk or tel: 01227 824797

Thank you for taking time to read this information
Yours sincerely

Professor Stephen Peckham
Project Principal Investigator & Professor of Health Policy (Project Principal Investigator)

Appendix 4 Consent form for course tutors / undergraduate medical students

Medical School Course Tutor / National Representative / Undergraduate Medical Student Consent Form

Study Title: **Developing Undergraduate Curriculum Resources on Health and Work in Medical Education**

Please initial boxes

1	I confirm that I have read and understood the study information invitation email received. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.	
2	I understand that my participation is voluntary and that I am free to withdraw at any time.	
3	I consent to the processing of my personal information for the purposes explained to me. I understand that such information will be handled in accordance with the terms of the General Data Protection Regulation (GDPR).	
4	I understand that my information may be subject to review by responsible individuals from the University of Kent or from regulatory authorities for monitoring and audit purposes where it is relevant to the research.	
5	I understand that confidentiality and anonymity will be maintained and it will not be possible to identify me in any publications.	
6	I agree that the research team may use my anonymised data for future research.	
7	I understand that by participating in an interview, I am consenting to have my comments recorded.	
8	I agree to take part in the study	

_____ _____ _____
Name of Participant (Print)   Date   Signature

_____ _____ _____
Researchers Name (Print)   Date   Signature

Appendix 5 Semi-structured interview schedule for course tutors – Pre pilot

Department of Health & Social Care

CHSS
University of Kent
Centre for Health Services Studies

Developing Undergraduate Curriculum Resources on Health and Work (Pre Pilot Phase)

<u>Background:</u>
I.   Please could you tell us a about your experience with teaching undergraduate medical school students? What courses have you previously and/or currently teaching at the undergraduate level?

II. How long have you been a course tutor at this specific institution?
   a.   What courses have you taught to undergraduate medical school students?
   b.   What teaching approach do you employ when teaching at this level (i.e. traditional, integrated, problem based learning, course based learning, enquiry based learning)? *(Provide a definition of each learning approach)*
   c.   Are you aware of the overall teaching approach employed at this intuition (i.e. traditional, integrated, problem based learning, course based learning, enquiry based learning)? *(Provide a definition of each learning approach)*
   d.   Is the teaching of undergraduate medical school curriculum based on a spiral curriculum? *(Provide definition of spiral curriculum: spiral curriculum is a course of study in which students will see the same topics throughout their schooling. Each encounter will increase in complexity thus reinforcing the previous learning)*

III. Are you aware of which Health and Work slide set your medical school has decided to pilot? If yes, do you know how the school came to decide on this?

<u>Health and Work in the Medical Curriculum</u>
IV. What is your first thought when you think of "health and work"? What does that term mean to you?

V.   Have you seen elements/have you taught elements of health and work at the undergraduate level within the medical school setting?

VI. Do you feel there is a natural fit for the topic of Health and Work within the undergraduate medical school curriculum?

VII. How best could a resource set on health and work engage students if there is not an assessment attached to the module?

<u>The Curriculum Resources on Health and Work</u> (participants will be shown a few of the slide sets from the health and work resource package in advance and/or at the time of the interview)
VIII. What are/ were your first impressions of this slide set?
   a.   Do you think the format of the information presented will allow you as a course tutor and the students you teach to understand the material?

    b.   What changes would you make to this set of resources if they were to become widely utilised in undergraduate medical schools in the UK?

IX.   What do you feel works about these slide sets and what still needs to be improved?

X.   How do you think this slide set should be presented (i.e. online only, mixed approach, tutorial, lecture based etc.)?

XI.   Are you aware of who will be teaching this material?

XII.   Do you feel there are any limitations with introducing health and work teaching materials at the undergraduate level?

Feasibility

I.   Can you see such a resource becoming a standard part of the learning curriculum? Please elaborate.

II.   Where in the overall curriculum could you see this resource being best placed (i.e. what year, what module, standalone module)?

III.   What would this resource set need in order to have longevity within the medical schools?

IV.   As a course tutor, where do you feel this content should be hosted for ease of access?

V.   Are you familiar with Health Education England's (HEE) e-Learning for health care? *(If no, provide the interviewee with a brief description and show one of the programmes i.e. cultural competence).*

    a.   What are your thoughts on having the content being hosted on this platform?

    b.   Do you have a preference with how the content should be accessed via HEE (i.e. login/password)?

Final Question: Is there anything else you would like to add that you think would be helpful to this discussion?

Thank you for your time

Appendix 6 Semi-structured interview schedule for course tutors – Post pilot

[Department of Health & Social Care logo]   [CHSS University of Kent logo — Centre for Health Services Studies]

Developing Undergraduate Curriculum Resources on Health and Work (**Post Pilot Phase**)

Background:

XIII.   Please could you tell us a about your experience with teaching undergraduate medical school students? What courses have you previously and/or currently teaching at the undergraduate level?

XIV.   How long have you been a course tutor at this specific institution?

    a.   What other courses have you taught to undergraduate medical school students?

    b.   What teaching approach do you employ when teaching (i.e. traditional, integrated, problem based learning, course based learning, enquiry based learning)? *(Provide a definition of each learning approach)*

    c.   Are you aware of the overall teaching approach employed at this intuition (i.e. traditional, integrated, problem based learning, course based learning, enquiry based learning)? *(Provide a definition of each learning approach)*

    d.   Is the teaching of undergraduate medical school curriculum based on a spiral curriculum? *(Provide definition of spiral curriculum: spiral curriculum is a course of study in which students will see the same topics throughout their schooling. Each encounter will increase in complexity thus reinforcing the previous learning)*

Health and Work in the Medical Curriculum

XV.   What is your first thought when you think of "health and work"? What does that term mean to you?

XVI.   Have you seen elements/have you taught elements of health and work previous to these Health and Work Curriculum Resources being piloted at this institution?

XVII.   Do you feel there is a natural fit for the topic of Health and Work within the undergraduate medical school curriculum?

XVIII.   How best could this resource engage students if there was not an assessment attached to the health and work module?

The Curriculum Resources on Health and Work (participants will be shown a few of the slide sets on health and work topics they were taught in order to remind them)

XIX.   What were your first impressions of this slide set?

    a.   Do you think this format allowed you to better understand the material?

    b.   What changes would you make to this set of resources if they were to become widely utilised in undergraduate medical schools in the UK?

XX.   Did the resources address the learning objectives as outlined at the outset of the slide set?

XXI. Where in the curriculum was this resource taught and was the content at an appropriate level given the year of study it was taught in?
XXII. What worked well and what still needs to be improved with this resources set?
XXIII. Can you recall and explain briefly how you taught this resource set?
XXIV. How did you find the supplementary lecture notes? Did you feel you needed additional training requirements to teach this slide set?
XXV. How do you think this resource slide set should be taught (i.e. online only, mixed approach etc.)?
XXVI. What do you feel are the limitations with introducing the health and work teaching materials to the cohort it was taught to?

Feasibility

VI. Can you see such a resource becoming a standard part of the learning curriculum? Please elaborate.
VII. Where in the overall curriculum could you see this resource being best placed (i.e. where in the overall undergraduate medical school curriculum and what format i.e. large classes, tutorial sessions)?
VIII. What aspects of this curriculum do you think have the potential to improve undergraduates' understanding of approaching health and work conversations with potential patients?
IX. What does this resource set need in order to have longevity within the medical schools?
X. As a course tutor, where do you feel this content should be hosted for ease of access?
XI. Are you familiar with Health Education England's (HEE) e-Learning for health care? *(If no, provide the interviewee with a brief description and show one of the programmes i.e. cultural competence).*
   a. What are your thoughts on having the content being hosted on this platform?
   b. Do you have a preference with how the content should be accessed via HEE (i.e. login/password)?

Final Question: Is there anything else you would like to add that you think would be helpful to this discussion?

Thank you for your time

Appendix 7 Invitation letter for students to take part in focus group

PILOT: Undergraduate Medical Students Invitation text to be sent by email or post

<insert sender and recipient address if sent by post>
<insert relevant subject title if sent by email>

Dear *<insert name>*,

Developing Undergraduate Curriculum Resources on Health and Work in Medical Education

We would like to invite you to take part in a focus groups for a project on developing undergraduate curriculum resources on Health and Work in medical education in England.

The objective of the project is to create a collection of curriculum teaching resources and slide sets on the topic of health and work. This is to equip students in their future role as new doctors when dealing with issues relating to Work and Health, Health and Work, and Work as a Health Outcome.

We are inviting you because we are keen to have the perspective of undergraduate medical students to find out from you if the teaching materials that were taught to you on health and work were are suitable and appropriate, and to help identify which resources have worked and which sections need strengthening. We are also keen to gauge from you whether the teaching slides were useful, and what topics you found less useful.

If you agree, we will arrange a focus groups for you to attend with other undergraduate medical students. The group will be composed of no more than 6 to 8 participants. The focus group will last between 60 to 90 minutes and will take place on XX (date) from between XX (time) and will be held at XX (location). We will reimburse your travel expenses (with proof of purchase) and will send you an Amazon voucher worth £20, as a gesture of thanks for your participation.

All the information collected will be confidential, only identifiable to the project team and anonymised in the analysis. Participation in the study is entirely voluntary. Taking part or not taking part in the study will have no effect on you or your academic study. For further information on our research privacy notice please refer to: https://www.kent.ac.uk/chss/contact/privacy.html

At the end of the project all participants will be invited to attend the dissemination workshops. These activities will include one workshop to disseminate and receive feedback from students and medical course tutors on the course content. A second workshop will also be delivered at the end of the project to inform PHE, policy makers, medical schools, medical students and patients.

If you would like to take part in this study, please complete and return the attached/enclosed *(delete as appropriate)* consent form by email to *<insert researcher email>* or by post using the Self-Addressed Envelope.

If we do not hear from you in the next two weeks, a member of our project team will contact you by email and/or telephone to confirm if you are willing to take part or not. If you decide to participate you are free to withdraw from the study at any time.

The project is an initiative funded and supported by Department of Health & Social Care, Department of Work and Pensions joint Work and Health Unit, and commissioned through Public Health England (PHE).

If you would like any further information about the research please contact Dr Ferhana Hashem, Senior Research Fellow: F.Hashem@kent.ac.uk or tel: 01227 824887.

If you are unhappy about any aspects of the study and wish to make a formal complaint, you can do this through contacting Nicole Palmer, Research Ethics and Governance Officer, University of Kent: N.R.Palmer@kent.ac.uk or tel: 01227 824797

Thank you for taking time to read this information

Yours sincerely

Professor Stephen Peckham
Project Principal Investigator & Professor of Health Policy (Project Principal Investigator)

Appendix 8 Student focus group topic guide

Developing Undergraduate Curriculum Resources on Health and Work (Post Pilot Phase)

Background
I.   Please could you tell us where you study and what year of your studies you are currently in?
II.   Are you aware of the teaching approach employed at the medical school you attend (i.e. traditional, integrated, problem based learning, course based learning, enquiry based learning)? *(Provide a definition of each learning approach)*
III. Are you aware if the teaching is based on spiral curriculum? *(Provide definition of spiral curriculum: spiral curriculum is a course of study in which students will see the same topics throughout their schooling. Each encounter will increase in complexity thus reinforcing the previous learning)*

Health and Work in the Medical Curriculum
I.   What is your general view of health and work topics in undergraduate medical education?
II.   Have you come across such topics in your undergraduate medical education before the health and work resource slide set was piloted with your university/institution?
   a. If yes, can you elaborate (i.e. description of what was taught, what year, were you assessed on this competency)?
III. Health and Work resources aside, how would you rate the topic of health and work in terms of importance (10 being very important and 1 being not important at all)? Has that number/rating changed since being introduced to this resource slide set? Please explain.

Placements

I.   Does your school offer student placements? Are you aware where the placements are, if so could you elaborate?
   a. If a placement on "health and work" was offered at a GP surgery or at the Department for Work and Pensions would you be interested? Please explain.

The Curriculum Resources on Health and Work (participants will be shown a few of the slide sets on health and work topics they were taught in order to remind them)

XXVII.   What were your first impressions of this slide set?
  a. Do you think this format allowed you to better understand the material?
  b. What changes would you make to this set of resources if they were to become widely utilised in undergraduate medical schools in the UK?
  c. Was the content at an appropriate level given your year of study?

XXVIII.   Did the resources address the learning objectives as outlined at the outset of the slide set?

XXIX.   Where in the curriculum was this resource taught to you?

XXX.   What worked well and what still needs to be improved with the resources?

XXXI.   Can you recall and explain briefly how this resource was taught?

XXXII.   Based on your experience do you think your course tutor had enough time and resources to teach this content?

XXXIII.   How do you think this resource slide set should be taught (i.e. online only, mixed approach etc.)?

XXXIV.   What do you feel are the limitations with introducing the health and work teaching materials to your cohort?

Feasibility

XII.   Did you find the health and work topics to be a useful/ less useful to your learning?

XIII.   Can you see such a resource becoming a standard part of your learning curriculum and that of other undergraduate medical students? Please elaborate.

XIV.   Where in the overall curriculum could you see this resource being best placed?

XV.   What aspects of this curriculum do you think have the potential to improve undergraduates' understanding of approaching health and work conversations with potential patients?

XVI.   What does this resource set need in order to have longevity within the medical schools

Final Question: Is there anything else you would like to add that you think would be helpful to this discussion?

Thank you for your time

Appendix 9 Student survey invitation letter / email

PILOT: Undergraduate Medical Students Invitation text to be sent by email or post or face-to-face

<insert sender and recipient address if sent by post>
<insert relevant subject title if sent by email>

Dear *<insert name or student>*,

Developing Undergraduate Curriculum Resources on Health and Work in Medical Education

We would like to invite you to take part in a survey for a project on developing undergraduate curriculum resources on Health and Work in medical education in England.

The objective of the project is to create a collection of curriculum teaching resources and slide sets on the topic of health and work. This is to equip students in their future role as new doctors when dealing with issues relating to Work and Health, Health and Work, and Work as a Health Outcome.

We are inviting you because we are keen to have the perspective of undergraduate medical students to find out from you if the teaching materials that were taught to you on health and work were are suitable and appropriate, and to help identify which resources have worked and which sections need strengthening. We are also keen to gauge from you whether the teaching slides were useful, and what topics you found less useful.

If you agree, please complete the survey *<attached or online>*. We are inviting all the students that have received the Health and work topic *<indicate topic and date>*. This survey should not take more than 5 minutes to complete.

All the information collected will be confidential, only identifiable to the project team and anonymised in the analysis. Participation in the study is entirely voluntary. Taking part or not taking part in the study will have no effect on you or your academic study. For further information on our research privacy notice please refer to: https://www.kent.ac.uk/chss/contact/privacy.html

At the end of the project all participants will be invited to attend the dissemination workshops. These activities will include one workshop to disseminate and receive feedback from students and medical course tutors on the course content. A second workshop will also be delivered at the end of the project to inform PHE, policy makers, medical schools, medical students and patients.

The project is an initiative funded and supported by Department of Health & Social Care, Department of Work and Pensions joint Work and Health Unit, and commissioned through Public Health England (PHE).

If you would like any further information about the research please contact Dr Ferhana Hashem, Senior Research Fellow: F.Hashem@kent.ac.uk or tel: 01227 824887.

If you are unhappy about any aspects of the study and wish to make a formal complaint, you can do this through contacting Nicole Palmer, Research Ethics and Governance Officer, University of Kent: N.R.Palmer@kent.ac.uk or tel: 01227 824797

Thank you for taking time to read this information

Yours sincerely

Professor Stephen Peckham
Project Principal Investigator & Professor of Health Policy (Project Principal Investigator)

Appendix 10 Student survey consent form

Undergraduate Medical Student Consent Form

Study Title: **Developing Undergraduate Curriculum Resources on Health and Work in Medical Education**

Dear student,

The following survey aims to gauge your views on the Health and Work slide sets resources and the delivery of this content by your tutor More precisely, we would like to know how satisfied you are with the overall delivery of the _____ topics.

This questionnaire will take you a maximum of 5 minutes to complete. Participation is entirely voluntary. Choosing not to take part will not disadvantage you in any way. All data will be anonymous, no individual will be identifiable and all data will be treated with strict confidentiality.

Please contact a member of the research team if anything is not clear or if you would like more information.

Any concerns, questions or requests for further information about any aspect of this survey can be addressed to Dr Catherine Marchand or Dr Ferhana Hashem. Please do not hesitate to contact Dr Marchand at c.marchand@kent.ac.uk; 01227 827 912 or f.hashem@kent.ac.uk; 01227 824 887.

If you are unhappy about any aspects of the study and wish to make a formal complaint, you may contact Nicole Palmer, Research Ethics and Governance Officer, University of Kent: N.R.Palmer@kent.ac.uk or tel: 01227 824 797

Consent

Please initial box

1. I confirm that I have read and understand the information sheet for the above study and have had the opportunity to ask questions. ☐

2. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving reason. ☐

3. I agree to take part in the above study. ☐

Thank you for your participation!

Appendix 11 Student survey questionnaire

Developing Undergraduate Curriculum Resources on Health and Work

Student survey

Dear student,

The following survey aims to gauge your views on the Health and Work slide sets resources and the delivery of this content by your tutor. More precisely, we would like to know how satisfied you are with the overall delivery of the _____ topics.

This questionnaire will take you a maximum of 5 minutes to complete. Participation is entirely voluntary. Choosing not to take part will not disadvantage you in any way. All data will be anonymous, no individual will be identifiable and all data will be treated with strict confidentiality.

Please contact a member of the research team if anything is not clear or if you would like more information. Any concerns, questions or requests for further information about any aspect of this survey can be addressed to Dr Catherine Marchand or Dr Ferhana Hashem. Please do not hesitate to contact Dr Marchand at c.marchand@kent.ac.uk; 01227 827 912 or f.hashem@kent.ac.uk; 01227 824 887.

If you are unhappy about any aspects of the study and wish to make a formal complaint, you may contact Nicole Palmer, Research Ethics and Governance Officer, University of Kent: N.R.Palmer@kent.ac.uk or tel: 01227 824 797

Thank you for your participation!

Developing Undergraduate Curriculum Resources on Health and Work

Survey

1. Thinking about the session on Health and Work topic _____

	Please indicate your level of agreement or disagreement on the following statement	Strongly disagree	Disagree	Agree	Strongly agree
1	The course documents - lessons or notes used in this class facilitated my learning.	1	2	3	4
2	The case studies and/or exercise in this course facilitated my learning	1	2	3	4
3	The learning activities in this course required application of problem solving skills which facilitated my learning	1	2	3	4
4	The learning activities in this course required critical thinking which facilitated my learning	1	2	3	4

2. In terms of **satisfaction** and **importance how do you rate** the following statement…

		Satisfaction					Importance				
1	The sense of competence, confidence and professionalism conveyed by the ambiance during the lecture or tutorial	1	2	3	4	5	1	2	3	4	5
2	The sense of competence, confidence and professionalism conveyed by the tutor or lecturer	1	2	3	4	5	1	2	3	4	5
3	The appropriateness of the exercises and case studies	1	2	3	4	5	1	2	3	4	5
4	The consistency of teaching quality irrespective of whether the Tutor or Lecturer was teaching Health and work topics compare to the other material taught in that module	1	2	3	4	5	1	2	3	4	5

3. Thinking about the Health and work topic _____, please indicate how satisfied you are with the following.

	Please indicate your level of agreement or disagreement on the following statement	Very dissatisfied	Dissatisfied	Neither Satisfied nor dissatisfied	Satisfied	Very satisfied
1	How satisfied were you with the availability of formats for lecture slides (PowerPoint, PDF)?	1	2	3	4	5
2	How satisfied were you when the lecture slides were posted on the website, blackboard or Moodle?	1	2	3	4	5
3	How satisfied were you with the amount of material on the lecture slides?	1	2	3	4	5
4	How satisfied were you with the way material was written on the slides?	1	2	3	4	5
5	How satisfied were you with the number of slides provided for each lecture?	1	2	3	4	5
6	How satisfied were you with the pacing of the lecture slides during the lecture?	1	2	3	4	5
7	How satisfied were you with the way lecture slides tied in with the lecture presentation (i.e., consistency of the slides with what was said in lecture)?	1	2	3	4	5
8	How satisfied were you with the lecture slides, overall?	1	2	3	4	5

4. Thinking about the Health and work topic _____, how helpful did you find the slides (circle one the numbers below)?

   1 ----------------- 2 ----------------- 3 ----------------- 4 ----------------- 5 ---------------- 6 ---------------- 7
Not at all   Very
Helpful   useful

5. Thinking about the Health and work topic _____, how thorough did you find the lecture slides (circle one the numbers below)?

   1 ----------------- 2 ----------------- 3 ----------------- 4 ----------------- 5 ---------------- 6 ---------------- 7
Not at all   Very
thorough   thorough

6. Thinking about the Health and work topic _____, how complicated did you find the lecture slides? (circle one the numbers below)?

   1 ----------------- 2 ----------------- 3 ----------------- 4 ----------------- 5 ---------------- 6 ---------------- 7
Simple   Complicated

7. How would you rate your knowledge of _____ compared to before this class or tutorial (circle one the numbers below)?

   1 ----------------- 2 ----------------- 3 ----------------- 4 ----------------- 5 ---------------- 6 ---------------- 7

Simple   Complicated

8. How would you rate your understanding of the Health and work topic _____,
compared to before this class or tutorial (circle one the numbers below)?
   1 ------------------ **2** ------------------ **3** ------------------ **4** ------------------ **5** ---------------- **6** ----------------- **7**
Simple   Complicated

9. Have you visited the e-learning for healthcare (**e-LfH**) website? Yes   or   No
If yes,

9a. how useful have you found the slides and interactive materials available (circle one the numbers below)?
   1 ------------------ **2** ------------------ **3** ------------------ **4** ------------------ **5** ---------------- **6** ----------------- **7**
Not at all   Very
                                                                                          helpful

9b. how useful have you found the interactive materials available on **e-LfH** (circle one the numbers below)?
   1 ------------------ **2** ------------------ **3** ------------------ **4** ------------------ **5** ---------------- **6** ----------------- **7**
Not at all   Very
                                                                                          helpful

10. How appropriate would **e-LfH** be to host the Health and Work topic _____ (circle one
the numbers below)?
   1 ------------------ **2** ------------------ **3** ------------------ **4** ------------------ **5** ---------------- **6** ----------------- **7**
Not at all   Very
                                                                                          appropriate

11. How appropriate would it be if the material was accessible to everyone on **e-LfH** (i.e. all population)
(circle one the numbers below)?
   1 ------------------ **2** ------------------ **3** ------------------ **4** ------------------ **5** ---------------- **6** ----------------- **7**
Not at all   Very
                                                                                          appropriate

12. How appropriate would it be if it the material on **e-LfH** was usable only by having a username and
password to access the material (circle one the numbers below)?
   1 ------------------ **2** ------------------ **3** ------------------ **4** ------------------ **5** ---------------- **6** ----------------- **7**
Not at all   Very
                                                                                          appropriate

13. What did you like about the lecture slides?

14. If you had the opportunity, what would you change about the lecture slides?

15. How did this session compare with other sessions?

Demographic information

16. Gender: Male   Female   non-binary   prefer not to say

17. Age: _____

18. Have you decided which speciality of medicine you would like to practice in? Yes   or   No

     18a. Can you please state: _____

Thank you for your participation!!