

Greater Manchester Cancer Vanguard Evaluation  
Report : Project 5



**online platform of cancer education and information  
for primary care**

**Project lead : Dr Catherine Heaven**

Date: November 2017



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## 1. Duration of project

Project initiation date: 25 July 2016 (Steering Group)

Project review date: 30 October 2017 (Steering Group), 6 November 2017 (Oversight Group)

## 2. Project team

The project brought together a wealth of cancer expertise in Greater Manchester, the Strategic Clinical Networks, the Greater Manchester Cancer pathways boards and commissioning programme, specialists or GPs with a particular interest in cancer, service users, Cancer Research UK and Macmillan, under the leadership of The Christie School of Oncology.

Name	Role	Organisation
Dr Cathy Heaven	Project Lead	The Christie School of Oncology
Dr Sarah Taylor	Content Lead	Cancer GP Lead
Sue Whitworth	Project Management	GM Cancer Vanguard
Friday Knight	Gateway-C Development	The Christie School of Oncology
Nicola Harrison - Swainston	Comms & Engagement	Cancer Research UK
Ewan Jones	Monitoring Effectiveness	GM & Eastern Cheshire SCN
Charlotte Heaven	Monitoring Effectiveness	Christie Patient Centred Research
Lora Capobianco		
Gill Barnard	Senior Programme Manager	Cancer Commissioning Team, GM
Susan Sykes		
Naomi Kelly	Administration	The Christie School of Oncology
Technology Enhanced Learning Team	Gateway-C Development	The Christie School of Oncology

Special acknowledgement is also given to service users who were particularly involved in the project.

Sue Coggins	Person affected by cancer
Saeed Shakibai	Rider, golfer and person affected by cancer

## 3. Contact details

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## 4. Executive Summary

### 4.1 Introduction

Over 300,000 people each year are diagnosed with cancer; that number is rising year on year. It is easy to see this number as just a statistic, but it isn't. It is 300,000 mothers, fathers, daughters or friends, all going through possibly one of the most frightening experiences of their lives. Nearly half of those people will have a late stage diagnosis, meaning their chances of survival are greatly reduced, their treatment is harsher, and for those that do survive the long term complications of that treatment can devastate their quality of life.

Three times as many people will survive cancer if diagnosed early. To achieve that we need to significantly reduce the number of people who are diagnosed at late stage.

Over half of GP practices in Greater Manchester have suspected cancer two-week-wait referral ratios below the England average, with many patients reporting 3+ visits to the GP before referral. To reduce the number of multiple appointments prior to referral and improve referral ratios in line with NICE guidance, GPs need access to good quality, evidence based, and behavior changing education, available when they need it, in a form they can easily access.

### 4.2 Gateway-C

Recognising the plethora of online information GPs have to navigate, and their lack of time to do so, the team set out to support early diagnosis through building a "go to place" for GPs incorporating an online education platform which would provide knowledge, challenge behavior and support GPs clinical decision making around referral; Gateway-C.

Gateway-C web-portal comprises an interactive learning zone, a searchable calendar of training events, a searchable data base of online cancer resources and a link to the ICan community support resource.

The learning in Gateway-C is uniquely built around patient consultations. Using realistic scenarios helped users identify with the challenges and dilemmas facing professionals. People affected by cancer and GPs were involved in identifying the challenges and developing the stories. Modules follow a patient through events on the cancer pathway, focusing on clinical decisions about referral or care. Consultations are presented in bite sized chunks, allowing the user to interact with the decision making process, and are supported by a wide range of expert interviews which provide valuable insights from those dealing with specific cancers on a daily basis. Additional educational materials include interactive quizzes, reflective pieces, journal articles and significant event analyses add to the learning. Gateway-C is accredited by the RCGP and is the first learning not built by CRUK which carried its endorsement.

Gateway-C now has 5 modules, 3 supporting early diagnosis, 1 supporting management of late effects and 1 supporting end of life care. Two more are currently being created.



### **4.3 Pilot findings**

Gateway C was piloted by 38 GPs in eight practices (4xWigan and 4xSouth Manchester) and was robustly evaluated using Kirkpatrick's 5 stage model of evidence.

GPs found Gateway-C easy to access and use; they found the consultations realistic and felt they learned a great deal. Nearly 95% reported referring back to learning in subsequent consultations, with 94% saying it helped them with future referrals. Pre-post testing showed Gateway-C had an impact on confidence in managing the consultation with patient and crucially raised confidence in making decisions about when to and when not to refer. The objective evaluation showed Gateway-C improved GP recording of key red-flag symptoms, especially in lung cancer. Objective evidence of change in referral behavior was difficult to assess, however, there was a hint that GPs in the pilot moved to use the 2-week wait pathway more frequently. Data to assess outcomes more robustly was not available to the team.

### **4.4 Roll out and applicability to others**

In May 2017 Gateway-C was launched to all 500 practices in GM. In December 2017, more than 73% have at least 1 person registered for the learning, including over 640 users across the area. This represents a range of practices, including 13 of the 20 practices with the worst A&E presentation figures in the region.

A second pilot was also run with our Vanguard partners in London, UCLH Cancer Collaborative. Twenty-six GPs started the pilot, however only 17 completed the training and post-test. These GPs comments and responses mirrored those of their Greater Manchester colleagues, however, objective pre-post test data did not show the same significant changes in confidence. This could have been because of small number, but might have been due to the training effect of raising awareness of how tricky decisions can be. Subjective comments however show very clearly how useful the GPs found Gateway-C and the London partners are interested in continuing to work with Greater Manchester and Gateway-C.

Many other professional groups are now looking at the applicability of Gateway-C to their workforce. GP trainees and primary care nurses who accessed the platform during the pilot reported on its usefulness; discussions are underway about applicability to community pharmacy, optometry and dentistry. Additionally, the team would like to look at how the platform could support emergency service staff in recognising potential cancer patients presenting at A&E.

### **4.5 Going forward**

Discussions are underway to see how Gateway-C can be taken forward. The new Greater Manchester Cancer Education Strategic Plan proposes building on the success of Gateway-C, with 3 additional portals, for secondary and social care and for patients. Funding for the plan and for Gateway-C is now being discussed with The Christie, as current host organisation, and the GM Cancer Board team.

There is interest in Gateway-C from other areas of England. Three cancer alliances have made enquiries about access as have a number of CCGs. A licensing model is being created to allow others to buy into the training offered in Gateway-C.

## 4.6 Summary

Gateway-C has been a huge success. It sets out to tackle an issue of national importance. It has shown that it offers an innovative, relevant, realistic, evidence based high quality solution which is available to GPs when they need it. It has the potential to be scalable, assessable and affordable when considered across the whole NHS.

As summed up by the GM Cancer Vanguard Medical Director

*“Gateway-C is the most exciting innovation project to come out of the Greater Manchester Cancer Vanguard. The initiative has real scope; we have had interest from NHSE and others for roll out across the country. Furthermore, this approach has the potential to deliver ongoing education across all areas of health care.”*

*Mr David Shackley, Medical Director, Greater Manchester Cancer*

And Saeed Shakibai, who has supported the project from the beginning:

*“Educating primary care providers is paramount in the fight against cancer. Giving GPs a tool to help them with early diagnosis of cancer ultimately saves lives. The cancer journey is a challenging one for both the patient and their family and friends, but it is also challenging for our healthcare providers who do a wonderful job. I know of many cancer vanguard projects currently on-going, but none more important than Gateway-C. Why? Because, until such time that we have found a cure for cancer, let us make sure our GPs are armed with every tool necessary to detect signs of cancer early and refer the patient quickly for tests and treatment.”*

*Saeed Shakibai, Rider, Golfer and person affected by cancer*

It is therefore recommended that the GM Cancer Vanguard continues to support and fund the project whilst discussions with The Christie and GM Cancer continue, in order for the project team to best prepare for the longer term sustainability and rollout of Gateway-C.



*Sue Coggins & Saeed Shakibai at our roll-out preview event*

## 5. Introduction – including background, context and rationale

Every year 300,000 people are diagnosed with cancer. Half of these are diagnosed at a late stage, leading to poor outcomes poor experience and greater reliance on the NHS.

Manchester has one of the worst incidences of cancer in the NHS, the second highest level of late diagnosis, amongst the poorest outcomes and some of the worst mortality figures. However, once in the system, a person's (one year) survival in Manchester is better than many other cities. A key factor therefore contributing to the low mortality figures is the number of people who are diagnosed late and through A&E. Early detection and quick referral getting people into the system faster is therefore a key priority of the Greater Manchester health economy as a person is three times more likely to survive if diagnosed early.

Data shows:

- Half (49%) of all cancer presentations are late (stages 3&4); in GM 60% of lung cancers and 40% of colorectal cancers are diagnosed at stages 3 or 4
- Too many patients present in A&E in GM meaning they have not been referred until symptoms becomes troublesome. In some areas of Greater Manchester as many as 28% patients are diagnosed in A&E
- Lung cancer is the single biggest cause of premature death in Greater Manchester, above coronary and other lung diseases.
- Lung cancer accounts for 28% of all premature (pre 75) cancer deaths in GM; Colorectal for 10% and Hepato-pancreato-biliary for 9%

### 5.1 Current position

Currently, GPs are the gate keepers to the health care system. GPs see hundreds if not thousands of patients each year, many of whom have symptoms that are vague and might be suggestive of cancer. On average less than 8 of these will in fact be new cases per year. No GP wishes to miss a cancer diagnosis; meaning they can experience huge pressure to be familiar with a whole gamut of cancer symptoms, to ensure that they recognise possible indications, and be confident about making decisions about when to and more importantly when not to refer into the system using 2-week suspected cancer referral pathways.

The New NICE guidance (NG12) has been created to help GPs in decision making about cancer referral. Feedback is that this can be confusing and that it is on occasions difficult to interpret, and not specific to Greater Manchester.

A 2012 study showed GPs have a tendency to use either 2-week or non-urgent referral pathways irrespective of patient presentation (BMJ 2015)<sup>1</sup>; those who used 2 week pathways had lower mortality figures. A Lancet published paper showed higher than predictable variation between number of GP appointments and diseases groups (Lancet 2012)<sup>2</sup>. The most recent cancer patient experience survey (2016 data published March 2017)<sup>3</sup> have shown that 76% of cancer patients were referred via their GP, 10% via emergency presentation, 11% from screening with 3% of patient being unsure. Of those referred via the GP whilst 77.7% reported having 1or 2 consultations, 14.5% reported having 3-4 and 7.9% having 5 or more consultations. The treatment and experience of this 22.4% of patients had the potential to be improved.

*References (see section 17)*

## 5.2 Training available for GPs

There are a good number of training events which GPs can access. Many of these are of high quality and run by NHS and 3rd sector organisations. However, it is important to remember, cancer is only a small portion of a GPs caseload, and therefore updates on other more commonly seen and community managed diseases take can take priority as do other element of learning about cancer, for example cancer treatment, side effects, care, management of late effects. GPs often struggle to attend day time training events due to their clinical commitments and the difficulty of locum cover in primary care, therefore they often rely on general update sessions, generic training events or training which focuses on specific issues they commonly encounter. The consequence of this and of the rarity of GP encounters with some cancers, means that face to face training may not be the only an answer to supporting GPs with detailed cancer education.

There is also a plethora of information and training units available on the internet for GPs. Much of this is high quality, eg CRUK, SCN and Macmillan sites, however, GPs report that some of this is difficult to navigate and much of it is informational and not educational with some simply being power-point presentations online. There is little that is based on the reality of the GP consultation, which is evidence based and driven by educational theory.

Despite availability of current information based training, cancer referral and A&E presentation statistics are not improving. One could therefore conclude that the type of training available online is not a solution to the early referral paradigm. Part of the solution, as already noted, relates to the quality of the educational packages and the relevance of the learning. Behavioural insight and educational theory would suggest that online education is required that takes account of behavioural drivers. This means that education needs to not only provide knowledge, but address those things which are governing behaviour in the clinical encounter. This includes beliefs and attitudes, and emotion, and that it needs to be available when a GP needs it to provide the solutions and support a GP is looking for.

## 6. Aims and objectives of the project

This vanguard project aimed to support the objective of improving outcomes by increasing compliance with NICE guidance on recognition and referral for suspected cancer and reducing the number of patients presenting with cancer through routine referral and A&E:

It **aimed** to do this by:

- supporting GPs in identifying patients with potential cancer symptoms
- increasing GP confidence in decision making relating to use of the 2-week pathway for suspected cancer symptoms
- improving patient experience, by helping GPs to prepare patients for suspected cancer referral and tests

The project team set out to create an educational platform which would meet the above aspirations. By creating the educational environment online, it can address the rarity of cancer in the average GP workload and ensure that GPs have access to high quality learning and support when it is required

*“The training they need, when they need it”*



The image contains three red rounded rectangular boxes stacked vertically. Each box has a small image on the left and text on the right. The first box shows a woman at a computer with the text 'Give GPs a tangible framework to use in clinical encounters'. The second box shows two men talking with the text 'Create an education environment that focuses on skills and challenges attitudes and feelings'. The third box shows the Cancer Research UK logo with a checkmark and the text 'Aligns with CRUK's mission to change cancer outcomes'.

-  Give GPs a tangible framework to use in clinical encounters
-  Create an education environment that focuses on skills and challenges attitudes and feelings
-  Aligns with CRUK's mission to change cancer outcomes

### 6.1 Objectives by year

Year 1: The objective was to build, pilot and test the platform in 2 cancer pathways

Year 2: The objectives included

- expand the content across pathways and into living with and beyond areas
- roll out the platform across Greater Manchester & Eastern Cheshire,
- test applicability outside the GM Cancer Vanguard area and with other professional groups
- test models of sustainability

## 7. Gateway-C; online gateway to primary care cancer education

Gateway-C comprises a freely accessible website <http://www.gatewayc.org.uk> and a secure learning zone, accessed via [online registration](#), containing a number of new online courses.



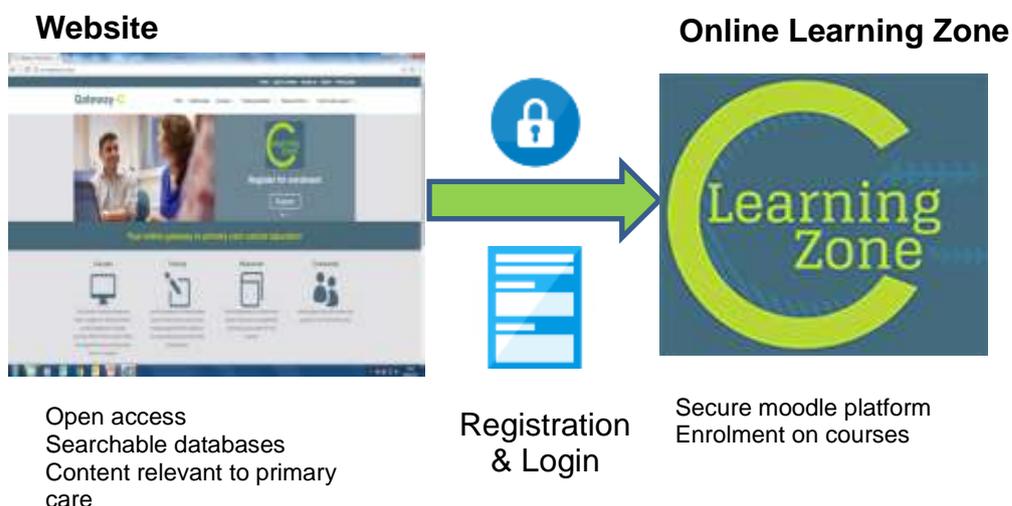
### 7.1 Website

The aim of the website is to act as a gateway to signpost GPs and other primary care staff to [online cancer education courses](#), face to face [training events](#), published [resources](#) and [community groups](#) that offer support to persons affected by cancer. In the courses section, a registration form invites primary care staff to register for the Gateway-C learning zone, where new online courses, developed by the project team, are freely accessible.

### 7.2 Moodle - learning Zone

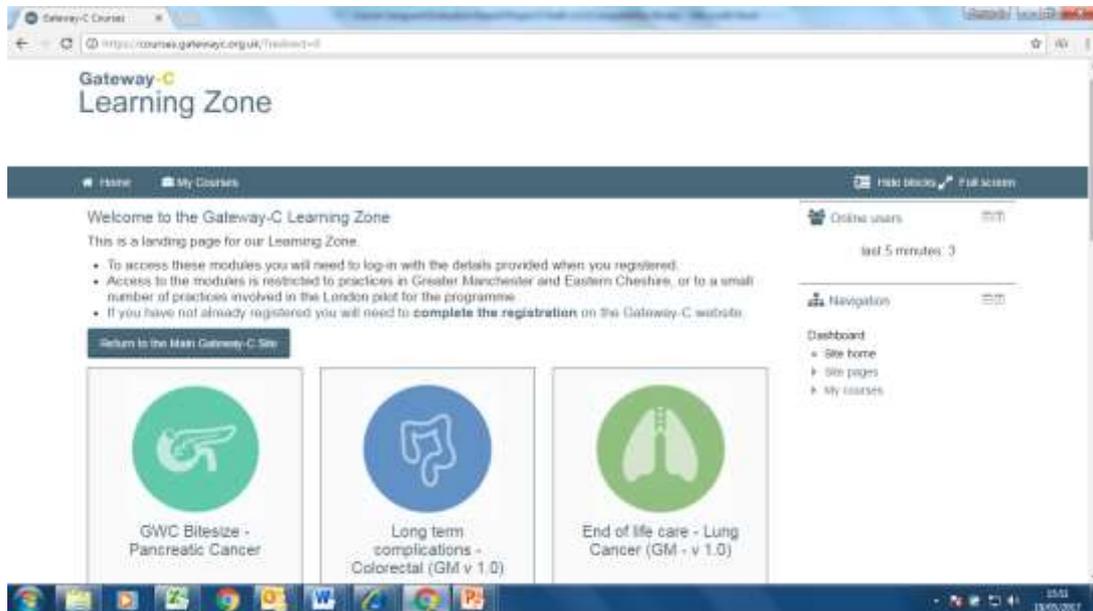
#### 7.2.1 Moodle Access

To enter the “learning zone” individuals have to register. This allows each person to have their own private learning space, which tracks activity, learning, and feedback. Each time a person returns to the space they pick up from where they have left off.



## 7.2.2 Learning Zone

Once in the learning Zone individuals can select courses from those available. Each course has clear information about content, objectives and an indication of time taken to complete.



## 7.2.3 Pilot modules

For the initial pilot, participants had a choice of two Greater Manchester specific modules for lung and colorectal cancer.

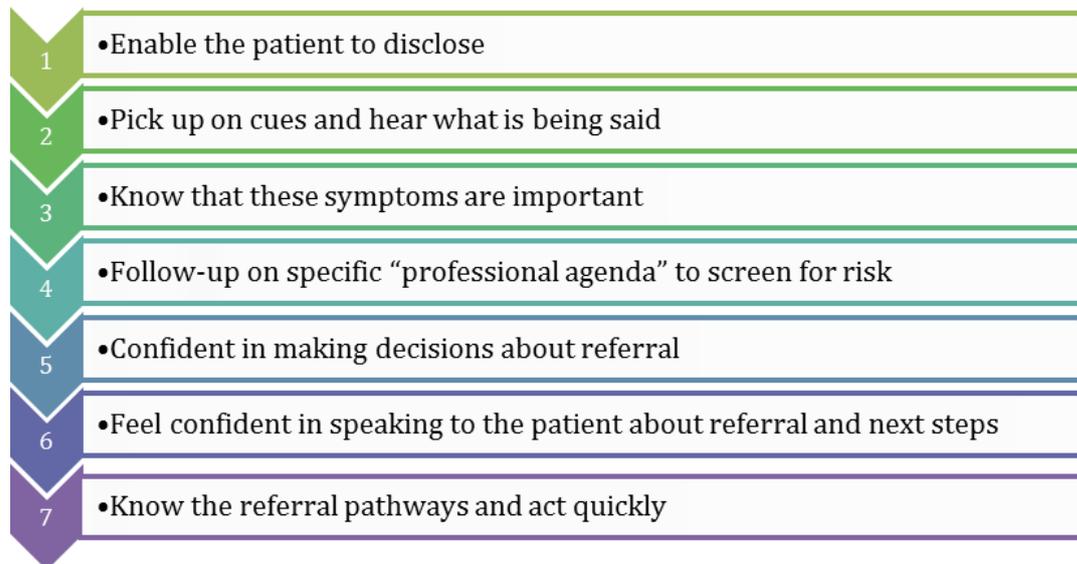


The decision to focus first on these two cancers was based on Greater Manchester data for late diagnosis and premature deaths highlighted in section 5.

These modules were tailored for a London audience and tested again during the second pilot with UCLH Cancer Collaborative.

## 7.2.4 Module development

Process mapping of consultations revealed seven elements of the consultation which needed to be present to ensure successful decision making and referral for a 2-week pathway. Modules were then built to cover these aspects of learning, and to ensure behavioural, affective and attitudinal aspects of consultations for example communication skills and emotional support were addressed to optimise the learning environment



Using educational theory, courses were designed to be interactive and to teach skills as well as challenge beliefs and emotions.

Each scenario was built around a realistic patient story designed to help users identify with the challenges and dilemmas facing professionals. People affected by cancer and GPs were involved in identifying the challenges and developing the stories. Patients were interviewed to collect experiences to ensure realism, and then a script of a consultation was created which blended the required training elements with realistic experiences. Additional insights were scripted to give insights into the thoughts and feelings of patients, family members and the GP at key points, to help users engage with the scenarios and gain from the learning.

Scripts were then sent to GPs, clinical experts and service users to test for realism, validity and factual accuracy, before being sent to professional actors, who were filmed by the Technology Enhanced Learning team depicting the consultations.

**Decision making:** Modules follow a patient story through events on the cancer pathway, focusing on clinical decisions about referral or care. Consultations are presented in bite sized chunks, allowing the user to interact with the decision making process. Each module is unique and follows a slightly different format. The lung early diagnosis module requires the user to make decisions and then see the consequence of that decision, whilst the colorectal early diagnosis module follows a story chronologically asking the user to give a course of action, before being given the opportunity to see interviews with a wide range of experts, who provide valuable insights from those dealing with specific cancers on a daily basis.



Additional educational materials include interactive quizzes, reflective pieces and journal articles. Each section encourages GPs to reflect on their own practice and consider what they themselves would do.

For each topic there is a suggestion about how much time it will take users to work through the activities and the system allows users to save any progress, offering the flexibility to return at any time to complete the courses. Both courses were expected to take 2 hours with an optional hour of learning around Significant Event Analysis. At the end of each course the participant could print off a certificate for their CPD records.

### 7.2.5 Testing and accreditation

Once built, modules were tested by GPs, clinical experts and educationalists; following amendments RCGP accreditation was sought and approved. Cancer Research UK also reviewed the modules and endorsed them as extremely high quality. The modules were also sent to educational colleagues at Macmillan for review and whilst they could not permit the use of their logo directly in the Learning Zone (given they have their own), they were very positive about the content of both the website and the courses and allowed their logo be used on marketing materials.



### 7.2.6 Additional modules post pilot

After the pilot the current 2 courses were improved following feedback from the test GPs. Additional modules were then built. These were based on those things GPs expressed a wish to see and also those things known to have the biggest impact on GM cancer outcomes. Additional diagnostic modules were built in Pancreatic cancer, living with late effects of bowel cancer, end of life care in lung cancer. Other modules still in development include Brain cancer, Hodgkins lymphoma and Acute Oncology. There is also the opportunity to work with UCLH in London to create a module on Myeloma, and with Macmillan Cancer Improvement Partnership (MCIP) to create a module to support the lung screening programme.



Although the GM user groups were keen to endorse it, a decision was taken not to create a separate psychological or communication module as this was built into every module. Gateway-C did not want communication and psychological awareness to be considered an optional extra but essential for delivery of every part of patient care. To date psychological and communication issues detailed above have been addressed during the current modules.

## 8. Pilot methods and approach

### 8.1 Kirkpatrick's model



We used Kirkpatrick's model to evaluate the benefits of Gateway-C in Greater Manchester and London.

This approach to data collection allowed for not only subjective responses (L1-2) but also objective measures (L3-5) to be evaluated. A Research Assistant was employed to oversee key elements of behavioural evaluation, with the involvement of a Senior Quality Improvement Manager from the Strategic Clinical Network leading on the outcomes measures.

### 8.2 Data Collection Methods

#### 8.2.1 Behavioural Assessment Tools

The following data was collected:

- Demographics, previous experience of e-learning, level of technology usage and usage of social media (Pre Only)
- Experience of using Gateway-C (L1)
  - Through-out each course participants were asked to rate on a scale of 1-5 how beneficial they found each learning activity from 1 (very poor) to 5 (Very good)
  - Participants were also given the opportunity to reflect on their learning at different points during the course and submit this as free text. (During learning)
- Subjective assessment of learning and its usefulness in practice (L2). (Post only)
- A questionnaire was then created to assess self-confidence when related to the 7 aspects of the interview which had been identified. This was administered pre and post-test to assess behaviour change (L3)

- The Provider Decision Process Assessment (Dolan, 1999) (L3) to evaluate GPs level of decisional conflict around making a cancer referral. The questionnaire can be assessed with an overall decisional conflict score as well as splitting into three subscales; uncertainty, factors contributing to uncertainty and perceived effectiveness in decision making. Pre and post-test questionnaires to assess change.
- The Service Use questionnaire: The service use questionnaire is a validated questionnaire that is based on DeLone and McLean's (2003) information systems quality research as well as van der Heijden's (2004) technology acceptance model. The 8 subscales sit within 2 overarching dimension, global system quality (system, information, service, and user interface design quality), and technology acceptance (perceived usefulness, perceived ease of use, perceived enjoyment, and intention to use), which provide an overall account of the acceptability of the e-learning courses.

### **8.2.2 Behavioural Assessment Method**

Participants were asked to complete questionnaires prior to registering on Gateway-C and immediately after they had completed the two courses (annexes 1 and 2). Questionnaires were used as they allow for subjective responses to be measured across a wide range of concepts. Questionnaires are easy and quick to administer and were placed online using SurveyMonkey to allow GPs the flexibility to complete them at their earliest convenience. The post training questionnaire was adjusted slightly for relevance to the London audience (annex 3).

### **8.2.3 Outcome Data Assessment Method (L4)**

The initial approach devised was to audit cancer referral data

- the referrals made by the pilot GP practices to ascertain whether their referral behaviour changed after undertaking the learning activities.
  - Data for two week wait (2WW) referrals and non-2WW referrals for the period February to April inclusive 2016 was compared to data for the same three month period in 2017
- The recording of symptoms in the GP consultations for those patients referred by 2 week pathway or via non-2 week pathway

#### **Process for collecting data on referral pathway usage**

Aggregated anonymised data on the number of lung and colorectal referrals made by the pilot GP practices was obtained from the relevant referral centres (Writington, Wigan & Leigh Foundation Trust and the Manchester Integrated Care Gateway respectively).

Data were interrogated for number of referrals and pathway used.

The data supplied by the referral agencies on referrals from each of the pilot GP practices was also copied back to those practices and they were asked to audit the clinical consultation notes that resulted in those referrals being made, to ascertain what symptoms were present that prompted the referral. This was done using a template devised by the Gateway-C project team. This template assessed the information gathered on symptoms by the GP during consultation through a series of questions (Figures 1 and 2 below) which asked what had been recorded on the patient notes.

The potential responses to the questions on clinical symptoms recorded were:

- Yes
- No
- Not Recorded
- No previous presentation

It was felt that this measure in particular was an important indicator of the depth of investigation carried out during the GP consultation. The Gateway-C modules were designed, in part, to enable and motivate GPs to record more detail on potential symptoms which may suggest cancer and which may, therefore, require referral.

### GP audit questions for consultations resulting in lung referrals

Lung: Were patient responses to the following recorded during GP consultation?					
Was there a <u>cough</u> present?	Had the <u>cough</u> changed from previous presentation(s)?	Did patient exhibit <u>shortness of breath</u> ?	Did the patient report <u>chest pain</u> ?	Was the patient suffering from <u>fatigue</u> ?	Had the patient experienced <u>unintended weight loss</u> ?
Did the patient report <u>loss of appetite</u> ?	Were there <u>persistent or recurrent chest infections</u> ?	Was <u>finger clubbing</u> present?	Did the patient have <u>thrombocytosis</u> ?	Did the patient present with <u>haemoptysis</u> ?	

### GP audit questions for consultations resulting in colorectal referrals

Colorectal: Were patient responses to the following recorded during GP consultation?				
Did the patient report <u>abdominal pain</u> ?	Did the patient report <u>change in bowel habit</u> ?	Had the patient experienced <u>rectal bleeding</u> ?	Had the patient experienced <u>weight loss</u> ?	Was there <u>iron deficiency anaemia</u> ?
Was any <u>abdominal or rectal mass</u> present?	Had the patient experienced <u>fatigue</u> ?	If over 60, was there any <u>non-iron deficiency anaemia</u> ?	Did the patient report <u>bloating</u> ?	

## 8.3 Data Analysis

All pre-test post-test data were examined for goodness of fit, to determine the most appropriate statistical approach. Data were found to be non-parametric. Wilcoxon matched pair testing was therefore used to test significance of changes in data over time. The level of statistical significance was set at the usual 5% mark.

The GP consultation templates were analysed and the proportion of symptoms for which each potential response was calculated. The project team were particularly interested in the extent to which symptoms were 'Not Recorded'.

The project team repeated the same process for the post-learning period (Feb to Apr 2017) as had been carried out for the 2016 pre-learning period. The results were compared in order to assess whether any change had taken place.

## **8.4 Participant recruitment method**

### **8.4.1 Greater Manchester**

A sample of convenience of 8 practices was sought from GP practices in two CCGs in GM. CCGs were chosen that represented different socioeconomic populations; south Manchester and Wigan

All practices in the CCG were invited to take part in the pilot study (n=84). Annexes 4 & 5 shows the primary communication used to recruit practices in Greater Manchester.

Any participating practice had to ensure all GPs were willing to complete the learning and that the lead GP was willing to complete the audit. Payment of £1200 was made to practices with less than 5 GPs and £1500 to practices with 5 or more GPs to reimburse time spent on the audit data.

- Participating practices were invited to a pre meeting in October 2016 to explain the study process. Pre-test questionnaire were completed at this meeting if possible.
- Practices were asked to complete the pre-audit in October-end November 2016, for referrals made between February 2016 and April 2016
- GPs were asked to register for Gateway-C and complete any pre-test questionnaires by Mid-December
- Gateway-C learning modules were undertaken between Mid-December and end of January
- Post-test behaviour data was collected as soon as module were completed
- Post-test audit data was collected in May 2017, for referrals made between February and April 2017.

### **8.4.2 London**

A sample of convenience of 6 practices was sought from GP practices in two CCGs in Camden and Islington. CCGs were chosen that represented different socioeconomic populations and localities across both CCG areas.

All practices in the CCGs were invited to take part in the pilot study (n=71) by their Primary Care Cancer Leads.

Any participating practice had to ensure all GPs were willing to complete the learning and that the lead GP was willing to complete the audit. Payment of £1500 was made to practices to reimburse time spent on the audit data.

- A teleconference was held with each of the participating practices once they were selected to take part in the pilot to provide additional details of the process.

- Practices were asked to complete the pre-audit in April-beginning June 2017, for referrals made between July and September 2016.
- GPs were asked to register for Gateway-C and complete the pre-test questionnaires by beginning May 2017
- Gateway-C learning modules were undertaken between mid-April and end of August
- Post-test behaviour data was collected as soon as modules were completed

## 9. Outputs and outcomes – Greater Manchester pilot

### 9.1 Participation

84 practices across South Manchester and Wigan were invited to take part in the pilot study of Gateway-C. Recruitment was open for 2 weeks during which 8 practices agreed to participate, 4 in south Manchester and 4 in Wigan (practices are acknowledged in section 18).

**Table 1.** Population Characteristics (n = 38)

Characteristic	Mean	Range
<b>Gender</b>		
Female	20	
Male	18	
<b>Mean age (years)</b>	43	30-61
<b>Mean time practicing (years)</b>	14	1-46

From the 8 practices 38 took part in the pre-training questionnaire and 34 GPs completed the study and the post training survey. The characteristics of the population can be seen in table 1.

- 4 GPs did not complete follow-up questionnaires
- 18 of the 34 had no missing data in the questionnaires (53%). No more than 12% of dataset missing for any question therefore all questions were included in analysis

8 GP trainees used the platform during the pilot period and 4 practice nurses. These were not included in the analysis.

**Impact of attrition:** Drop outs were more likely to be:

- female (p=0.046)
- Have more time practicing as a GP (p=0.026)
- Score lower on computer usage questionnaires (p<0.001)
- Be older (p<0.001)

They were also more likely to rate the following questions lower:

- I pick up cues and hear what is being said for cancer symptoms (p=0.001)
- It was hard for me to decide if the benefits of the available referral options were more important (p<0.001)

## 9.2 Results

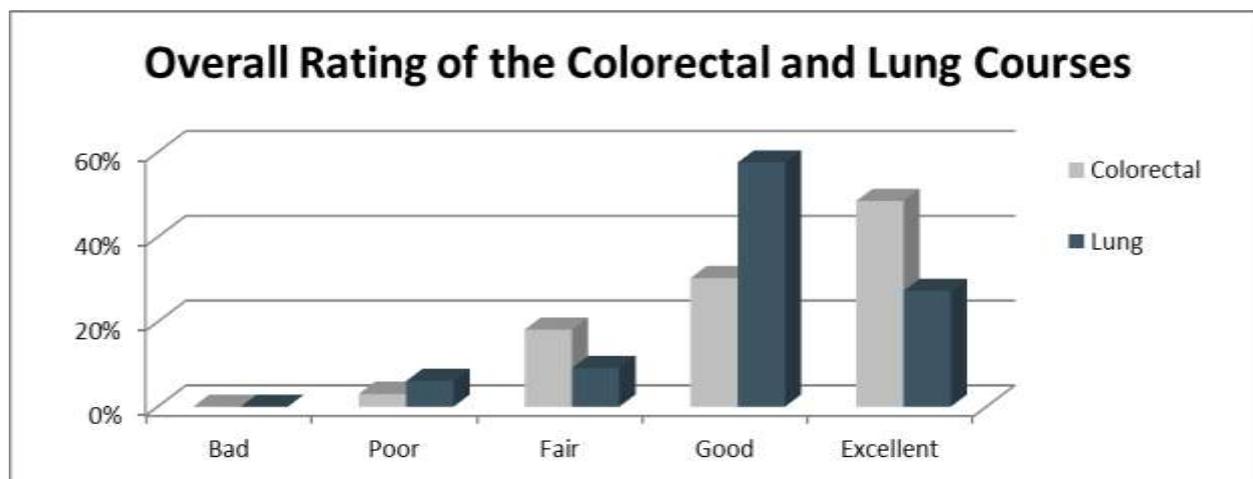
### 9.2.1 L1 Reaction: experience of learning

Overall three quarters of GPs reported Gateway-C was easy to log onto, with 80% reporting they found the online portal easy to use.

The e-learning was rated highly by the GPs with the breakdown of the colorectal and lung courses shown below. The most useful part of the learning highlighted as the interactive consultations.

#### Overall Course Ratings

- Lung Cancer Module: Mean = 4.26, where 73% of GPs rated the course as good or excellent
- Colorectal Cancer Module: Mean = 4.06, where 78% of GPs rated the course as good or excellent
- 86.5% stated that the most useful part was the interactive consultation



**Colorectal: Median = 4; Mean = 4.3; SD = 0.86; Range = 2-5**

**Lung: Median = 4; Mean = 4.1; SD = 0.78; Range = 2-5**

*“VERY interesting set of consultation. Am extremely glad that I have seen this set of consultations. Importance of early referral and therefore early diagnosis cannot be emphasised enough and seeing these videos has reinforced this. Will bear this in mind when CCG are asking us to reduce referral rate” (GP participant)*

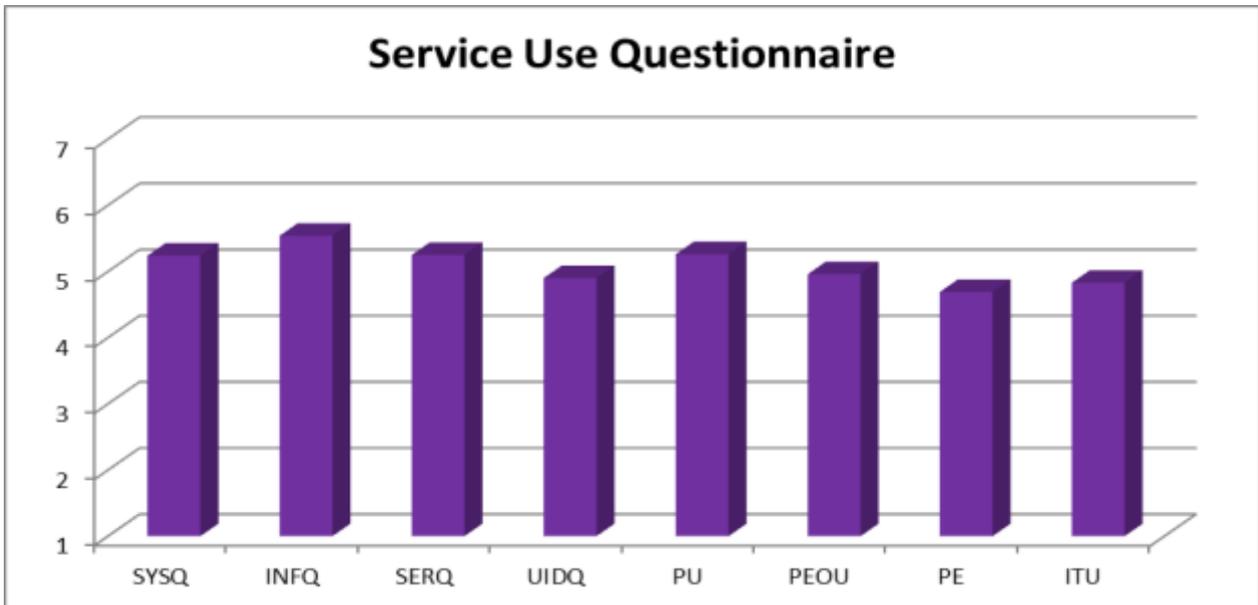
*“I found the activity very useful. As a GP I don't want to miss a diagnosis and over the years have come across patients under 50 with bowel cancer and have struggled when to refer or not so found the consultations good. Activity was good as it was based on consultation which is the job we do and how patients present to us.” (GP participant)*

*“A very good way of pointing out frailties in consultation. Under time pressure on busy days we sometimes take shortcuts. This interactive video shows that patient interpretations and anxieties means that safety-netting sometimes doesn't work. The exercise stresses the importance of making the best of having the patient in front of you; and points out that second chances don't always happen.” (GP participant)*

### 9.2.2 L1 Analysis of the service use questionnaire

Analysis of the service user questionnaire demonstrated that GPs found the e-learning courses both acceptable and feasible. On average scales received a rating of 5 out of a maximum score of 7.

Figure: Service questionnaire scores



Note: SYSQ = System Quality, INFQ = Information quality, SERQ = Service quality, UIDQ = User-interface design quality, PU = Perceived usefulness, PEOU = Perceived ease of use, PE = Perceived enjoyment, ITU = Intention to use

### 9.2.3 L2 Reported learning

GPs described the modules (as) useful. Nearly 95% had reported referring back to them in some way during a consultation, whilst almost 88% would recommend to a colleague that this was worthy to invest their time in. Having completed the first 2 modules, 95% of GPs reported being interested in further Gateway-C training modules.

#### Reported usefulness

- 94% referred back to GW-C during a consultation
- 94% GPs reported being interested in more modules
- 88% would recommend GW-C to a colleagues

#### Key quote:

*"I have spoken to a number of my GP partners who have also completed the learning modules, and they all agree that this has been one of the most useful educational experiences they have had, and there is evidence that the learning has ALREADY begun to change practice."  
(GP participant)*

## Reported improvement

- 94% reported that GW-C helped them with future referrals
- 85% reported it improved their recognition of symptoms meriting a 2 week referral
  - 85% felt more confident in knowing when to refer
  - 76% felt more confident in knowing when not to refer

### 9.2.4 L3 Change in confidence in conducting an effective consultation

One of the primary outcomes from the questionnaires was evaluating if the e-learning modules were able to aid GPs in increasing their confidence in managing the diagnostic consultation. Using the seven stage process mapping of the consultation, described earlier, we evaluated confidence in each of the 7 stages of the key aspect of the consultation. Changes are shown in the table below. Significance was tested using Wilcoxon signed rank tests and significant findings are highlighted in bold.

Question	Cancer	Pre-test (n = 38) Mean(SD)	Post-test (n = 34) Mean(SD)	Significance
I am confident in enabling the patient to disclose cancer symptoms	Lung	4.16 (0.44)	4.27 (0.52)	0.439
	Col	4.06 (0.41)	4.27 (0.52)	0.090
	All	4.11 (0.43)	4.27 (0.51)	0.077
<b>I pick up on cues and hear what is being said for cancer symptoms</b>	Lung	4.14 (0.35)	4.30 (0.47)	0.096
	Col	4.14 (0.35)	4.27 (0.45)	0.157
	<b>All</b>	4.14 (0.34)	4.29 (0.46)	<b>0.029</b>
<b>I know what symptoms are important</b>	<b>Lung</b>	4.16 (0.37)	4.39 (0.50)	<b>0.021</b>
	Col	4.14 (0.42)	4.33 (0.48)	0.052
	<b>All</b>	4.15 (0.40)	4.36 (0.49)	<b>0.003</b>
I follow-up with specific screening questions to elicit risk	Lung	4.19 (0.40)	4.18 (0.53)	1.000
	Col	4.11 (0.47)	4.18 (0.53)	0.439
	All	4.15 (0.43)	4.18 (0.52)	0.564
<b>I am confident in making decisions about referrals for</b>	Lung	4.14 (0.54)	4.24 (0.50)	0.285
	<b>Col</b>	3.95 (0.71)	4.18 (0.52)	<b>0.029</b>
	<b>All</b>	4.04 (0.63)	4.21 (0.51)	<b>0.019</b>
<b>I confidently speak to patients about referrals and next steps for</b>	Lung	3.92 (0.65)	4.06 (0.55)	0.180
	Col	3.89 (0.71)	4.09 (0.57)	0.142
	<b>All</b>	3.90 (0.68)	4.07 (0.56)	<b>0.046</b>
I know the referral pathway and act quickly for	Lung	4.16 (0.44)	4.18 (0.46)	0.763
	Col	4.08 (0.43)	4.18 (0.52)	0.285
	All	4.12 (0.44)	4.18 (0.49)	0.317
<b>Average confidence score</b>	<b>Lung</b>	4.12 (0.47)	4.23 (0.51)	<b>0.005</b>
	<b>Col</b>	4.05 (0.52)	4.21 (0.51)	<b>&lt;0.001</b>
	<b>All</b>	4.09 (0.49)	4.22 (0.51)	<b>&lt;0.001</b>

Wilcoxon Signed Rank Tests

An overall change in confidence in managing the whole of the diagnostic consultation was significantly increased overall ( $p < 0.001$ ) and across both lung ( $p = 0.002$ ) and colorectal ( $p < 0.001$ ).

### 9.2.5 Impact on confidence about referral

The primary outcome of the project was to increase GPs confidence in making the most appropriate decision about referring patients on the two week pathway for suspected cancer symptoms. GPs were asked whether they felt the modules made them over or under refer, and assessed their change in confidence in knowing when not to refer, ie being more confident that they were not missing a possible cancer patient.

<b>OVER-referral</b>	<b>Cancer</b>	<b>%</b>
<b>% less likely to OVER refer</b>	Lung	35
	Colorectal	29
	Both	32

Data showed that following training on Gateway-C 32% of GPs felt they were less likely to over refer patients, with 76% feeling they were less likely to under refer

<b>UNDER-referral</b>	<b>Cancer</b>	<b>%</b>
<b>% less likely to UNDER refer</b>	Lung	79
	Colorectal	74
	Both	76

Overall there was a significant change in confidence in knowing when not to refer ( $p = 0.010$ ). This was driven mainly by a change in confidence in knowing when not to refer colorectal patients ( $p = 0.016$ ). Although not significant, confidence in knowing when not to refer lung patients did increase.

<b>I am confident in knowing when not to refer a patient for</b>				
	Lung	3.44 (0.77)	3.70 (0.88)	0.236
	<b>Col</b>	3.21 (0.66)	3.65 (0.85)	<b>0.016</b>
	<b>All</b>	3.32 (0.80)	3.67 (0.86)	<b>0.010</b>

Wilcoxon Signed Rank Tests

### 9.2.6 Impact on Decisional Conflict

The 12 item Provider Decision Process Assessment (Dolan 1999) measured decisional conflict before and after the learning. Paired t-test showed there was a significant decrease in overall decisional conflict with a medium effect size of 0.55 (Cohen's  $d$ ),  $p = 0.014$ .

Breakdown using Wilcoxon Signed rank tests showed that changes were significant across three elements of the scale; knowing what treatment / option would be best ( $p = 0.001$ ), finding it was easy to identify all of the considerations ( $p = 0.001$ ), ensuring the patient fully understands the risks and benefits and perceived effectiveness in the decision ( $p = 0.022$ ), and believing the patient will comply with the referral ( $p = 0.026$ ).

Question	Pre-test (n = 38) Mean (SD)	Post-test (n = 34) Mean (SD)	Significance
1 The decision to refer was hard to make (negatively weighted)	2.72 (1.06)	2.39 (1.03)	0.068
2 I was unsure what would be best (negatively weighted)	2.67 (0.99)	2.42 (1.03)	0.280
<b>3 It was clear what treatment would be best</b>	3.39 (0.87)	4.06 (0.61)	<b>0.001</b>
4 I felt I did not know enough about the treatment alternative (negatively weighted)	2.83 (0.81)	2.61 (0.88)	0.179
5 I had trouble making the decision because important information is unavailable (negatively weighted)	2.47 (0.82)	2.28 (0.81)	0.451
6 It was hard to decide if the benefits of the treatments were more important (negatively weighted)	2.53 (0.81)	2.47 (0.86)	0.458
<b>7 It was easy to identify all of the considerations</b>	2.97 (0.81)	3.53 (0.76)	<b>&lt;0.001</b>
8 I fully understand the patient's views regarding the important issues	3.64 (0.87)	3.81 (0.69)	0.415
<b>9 I believe the patient fully understands the risks and benefits</b>	3.50 (0.81)	3.97 (0.47)	<b>0.022</b>
<b>10 I believe the patient will comply with the referral</b>	3.75 (0.73)	4.09 (0.58)	<b>0.026</b>
11 I am satisfied with the decision	3.83 (0.66)	4.03 (0.47)	0.177
12 I am satisfied with the process used to make the decision	3.56 (0.84)	3.85 (0.62)	0.063
<b>Total decisional conflict score (60) (Paired T-test)</b>	30.58 (6.80)	26.97 (6.44)	<b>0.014</b>

NB: Wilcoxon signed ranks on questions 1-12 ... overall decisional conflict data normally distributed therefore paired t-test used

NB: It was noted that Women had less decisional conflict than men ( $p = 0.005$ )

### 9.2.7 L4 impact on recording of symptoms

All referrals Feb-March from the 8 practices were audited before and after training for recording of cancer-suspicious symptoms, as described in section 8. Data were collated and analysed to identify changing in recording of key symptoms.

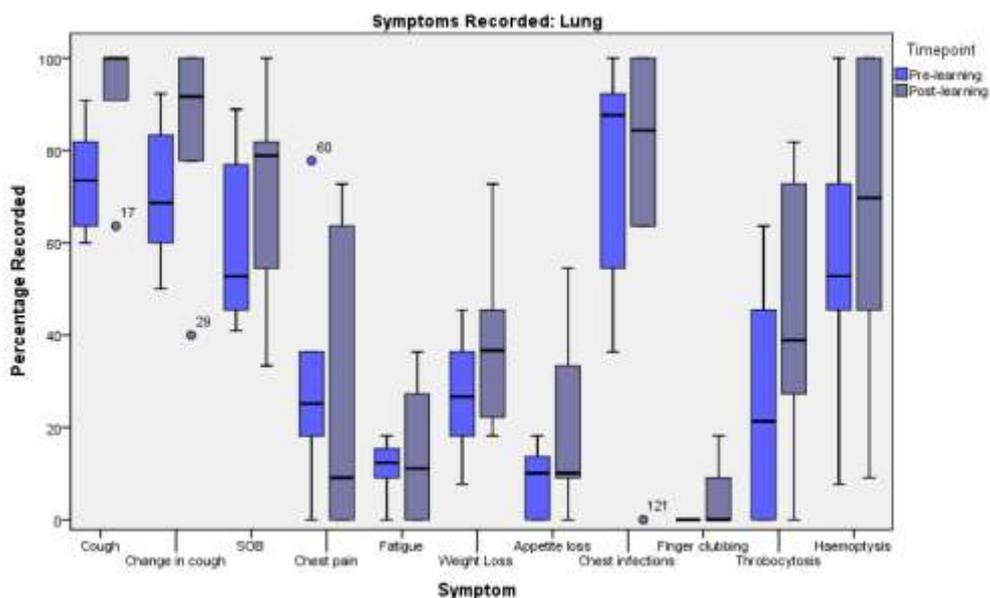
The results of the analyses of symptoms recorded and not recorded by GPs in consultations showed that following training there was an overall improvement in symptom recording; 54% pre to 59% post



However, when this was broken down by disease group the improvement was only seen in the recording of lung symptoms. Analysis showed that there had been an increase in the rate of potentially relevant symptoms recorded (from 42% to 51%) in lung patient consultations. However, the same analysis for consultations resulting in referral for colorectal referrals revealed a decrease in symptoms recorded (from 65% to 56%). Additional details are shown in tables below.

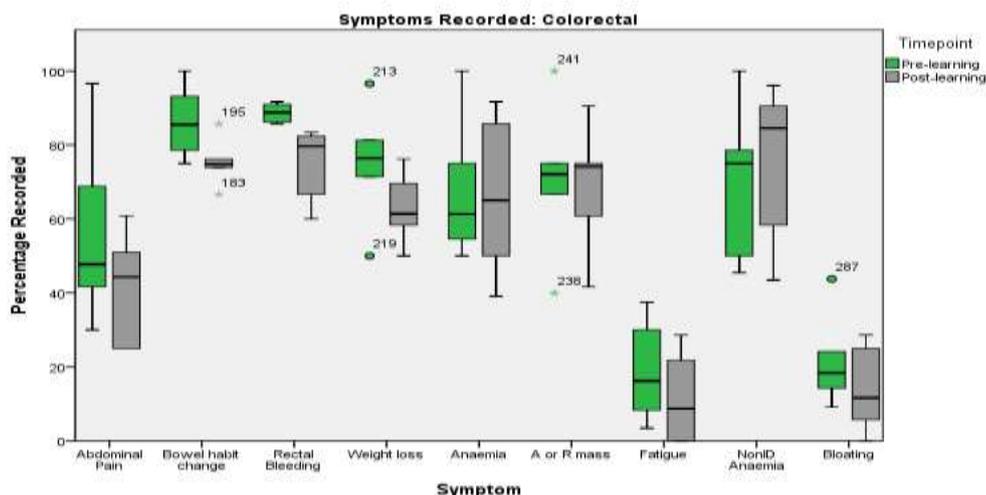
Metric	Pre	Post
<b>Lung</b>		
% of symptoms NOT recorded	58%	49%
% for whom cough not recorded	27%	14%
% for whom change in cough not recorded	30%	17%
% for whom SOB not recorded	48%	31%
% of coughs for which change in cough not recorded	10%	12%
<b>Colorectal</b>		
% of symptoms not recorded	35%	44%
% for whom change in bowel habit not recorded	14%	27%
% for whom rectal bleeding not recorded	14%	29%
% for whom unexplained weight loss not recorded	24%	44%
<b>% of total symptoms (lung + colorectal) not recorded</b>	<b>46%</b>	<b>41%</b>

These data were further investigated to understand the differences. The chart below shows the large variation in the recording of different symptoms associated with lung cancer symptoms other than chest pain and fatigue are recorded more often post training (dark blue). These difference seem considerable in recording of 'cough', 'change in cough' and 'shortness of breath', however the only difference that is statistically significant when tested using Mann Whitney U tests is recording of cough ( $p=0.026$ )



*Excludes practices with less than three referrals*

It can be seen that all changes in recording of colorectal symptoms are shown in dark green below



*Excludes practices with less than three referrals*

It appears that the only symptom which was on average recorded more frequently was anaemia. All other symptoms seem to be recorded less frequently, however, there seems to be only minor differences pre to post. The only significant differences pre to post was the fall in the recording of change in bowel habit ( $p=0.026$ ) and rectal bleeding ( $p=0.002$ ). This is of concern and warrants further exploration, especially as learning about the importance of rectal blood and blood on examination was commented upon by so many GPs in their feedback

In attempting to further understand these data, the project team is following up with the pilot practices themselves. The GP Lead on the project team has already offered some explanation.

- Although cancer is an important subject for GPs it makes up a small part of their workload therefore the impact of training may not be reflected over a short time scale
- Changes in GP staff, particularly junior doctors and use of locums may mean that not all referrers in the second audit will have completed the training
- GPs may take a more limited history if they elicit a "red flag" symptom and make a decision to refer early on in the consultation.
- Finally, we have no way of recording those consultations in which the GP took a thorough history which reassured them that they need not refer the patients.

Despite the evidence of the quantitative data, qualitative data support change in GP recognition of symptoms. Many comments were made about learning about symptoms, about being more aware of symptoms and of being more willing to follow up on key symptoms, as shown in this quote

*This consultation was very similar to 3 elderly male patients I see regularly with COPD who have acute infective exacerbations .... Having watched this I need to contact them to go through their histories more thoroughly and check most recent CXR .*

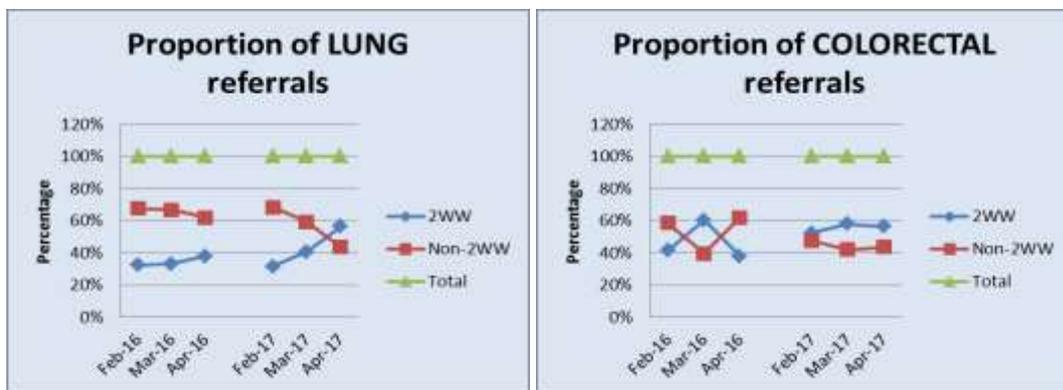
*It is too easy in a rushed surgery to go for the quick outcome of antibiotics +/- steroids when a more thorough history is needed ,with deeper questioning. Especially in the male elderly patients who can tend to minimise their symptoms .*

### 9.2.8 L4 Changes in referral patterns

The referral data supplied showed that during the study period (3 months) there were 60 referral for lung cancer pre and 42 post; and 79 referral for colorectal cancer pre and 129 post. The percentage of these referred using the 2 week suspected cancer pathways is given in table below.

Disease	when	% 2ww	% non 2ww
Colorectal	pre	62	38
	post	60	40
Lung	Pre	45	55
	Post	45	55

Data were analysed and the proportion of lung and colorectal cancer referrals reported by the referral centres as requested by GP practices via 2WW and non-2WW were calculated. The outcomes of this analysis are noted in the charts below calculated before and after the learning in January.



Data were further interrogated to identify the relationship between presence of key symptoms and referral. The only single symptom warranting a referral irrespective of other factors according to NG12 is haemoptysis. All patients with haemoptysis were recorded, pre and post were referred using the 22 week pathway.

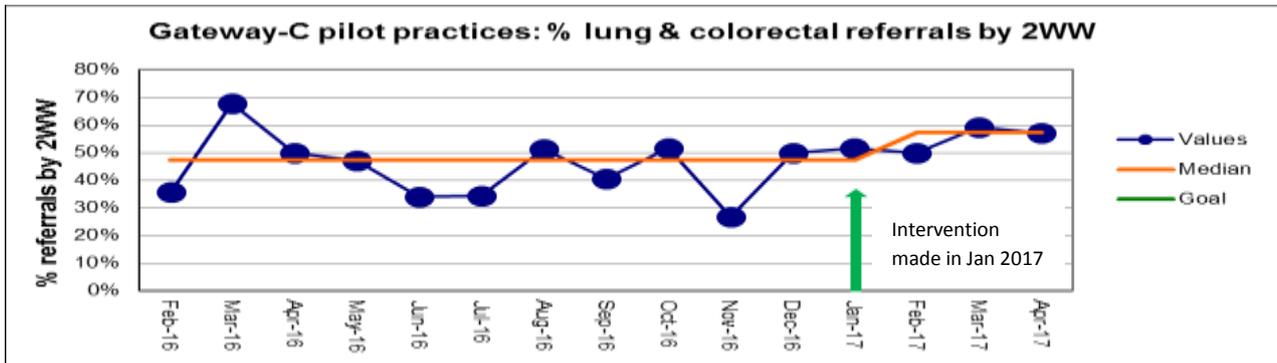
Metric	Pre	Post
Total no of LUNG referrals reported by GP practices	73	53
Haemoptysis that went by 2WW	13	11
Haemoptysis that DID NOT go by 2WW	0	0
Total no of COLORECTAL referrals reported by GP practices	39	164

On reflection, the project team agreed that the data was not robust enough to conclusively demonstrate improvement. Additionally the team found that no data was available about outcome of referrals therefore at this stage no comment can be made about appropriateness of the use of this pathway.

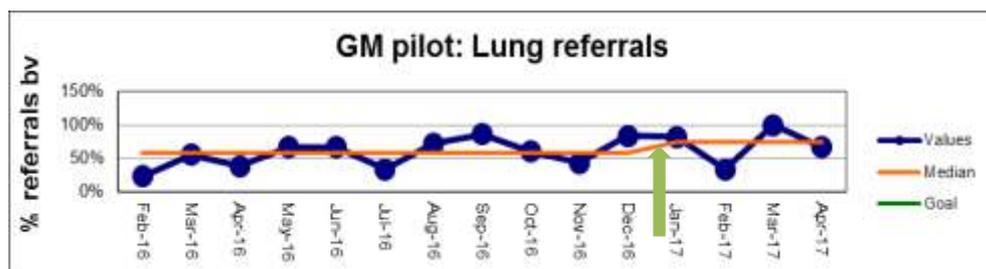
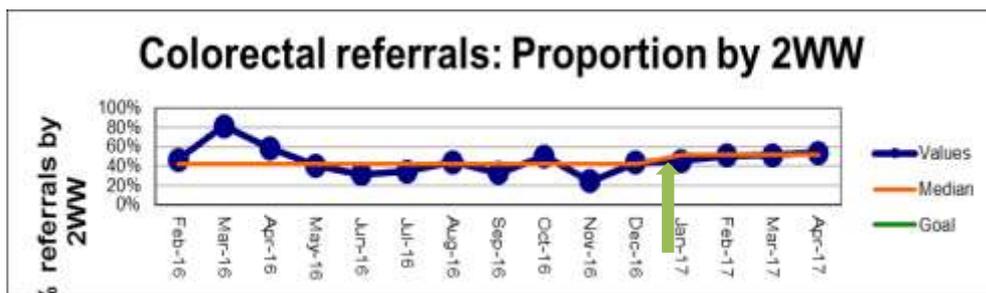
An additional longer term analysis of the proportion of pilot GP group referrals by 2WW was carried out for the period February 2016 to April 2017, and is ongoing.

### 9.2.9 Long term tracking of use of the 2-week pathway

Additional data was sourced on the practices referral numbers over a longer time period to use improvement science techniques to look for change. The percentage of referrals for lung and colorectal investigation made by 2WW was calculated and totalled for the eight pilot practices in the full time period February 2016 to April 2017. This was plotted on a run chart below to assess whether the median proportion of referrals made by 2WW has increased (improved) following the learning modules intervention. Plots are for all data, then data split by lung and colorectal.



The green arrow depicts the intervention of the training, which was between December and January 2017.



The charts show a slight change in median use of the 2 week pathway across both disease groups following training. Recognising referral rates are up in general and that these data are small, this can only be taken as an indication, and should be treated with caution.

Discussions are underway with Vanguard Project 14 (Cancer Intelligence Unit) about developing more refined and up-to-date GM cancer metrics. We are working with the Greater Manchester & Eastern Cheshire Strategic Clinical Networks to establish access to the Cancer Waiting Times (CWT), Secondary Uses Service (SUS) and Hospital Episode Statistics (HES) datasets in order to be able to build an ongoing measure of this data for GM and link it to outcome measures such as the one-year survival rate.

## 10. Output and outcomes - London pilot

### 10.1 Rationale

Whilst the GM pilot was underway the project group were approached by UCLH Cancer Collaborative to undertake a similar pilot with two allied CCGs, Camden and Islington. This provided the opportunity to test the relevancy of course materials with a different audience, having made some improvements following the GM pilot. Two London versions of the pilot lung and colorectal modules were piloted.

### 10.2 Results

#### 10.2.1 Participation

Six practices, involving 48 staff, initially expressed an interest in participating in the pilot (see Acknowledgements section 18). One practice withdrew entirely before the training started. When the pilot started 33 people registered for the learning zone and completed the pre-training questionnaire but only 26 started the courses (78%). We expect that the main remain reason for this drop out was lack of capacity but further feedback is being sought from practices by the project lead in London.

In the final sample of 26 who started the courses, demographics are given below. Seventeen GPs (65%) completed all aspects of the pilot including pre and post questionnaires.

- 1 respondent completed the post-questionnaire but did not complete the pre
- 14 of these were complete with every question answered (82%)
- However there was no more than 7% of the dataset missing for any one question

Characteristic	Mean	Range
<b>Gender</b>		
Female	16	
Male	10	
<b>Mean age (years)</b>	44	31-66
<b>Mean time practicing (years)</b>	13	1-33

#### Impact of attrition

- Those who did not complete were more likely to be younger ( $p < 0.001$ ), less time practicing as GP ( $p < 0.001$ ) and higher computer scores ( $p < 0.001$ ).
- Participants who dropped out of the study rated confidence in managing the diagnostic consultation higher.

#### 10.2.2 L1 Reaction: experience of learning

Whilst only 7% of London based GPs reported they had actually referred back to it during a consultation, 65% felt that they could recommend it to a colleague as a place to learn.

##### Reported usefulness

- 7% referred back to GW-C during a consultation
- 65% would recommend GW-C to a colleagues

### 10.2.3 L2 Reported learning

As with Manchester, London based GP felt that Gateway-C would benefit them in their consultations and help them with referrals.

#### Reported improvement

- 83% reported that GW-C helped them with future referrals
- 77% reported it improved their recognition of symptoms meriting a 2 week referral
  - 77% felt more confident in knowing when to refer
  - 73% felt more confident in knowing when not to refer

### 10.2.4 L3 Change in behaviour

Very interestingly in London pre-test post-test ratings of confidence in managing the different aspects of the consultation showed in general GPs felt less confident after the training in all aspects of the interview. Although these changes were **not** significant (Wilcoxon signed rank significance tests) and therefore could be attributed to chance, they are nonetheless interesting, and they are the opposite from the GM data.

Question		Pre-test (n = 26) Mean(SD)	Pre-test (n = 17) Mean (SD)	Post-test (n = 17) Mean(SD)	Sig
I am confident in enabling the patient to disclose cancer symptom	Lung	4.19 (0.57)	4.44 (0.51)	4.00 (1.13)	0.180
	Col	4.23 (0.59)	4.44 (0.51)	4.00 (1.12)	0.180
	All	4.21 (0.57)	4.44 (0.50)	4.00 (1.10)	0.058
I pick up on cues and hear what is being said for cancer symptoms	Lung	4.08 (0.49)	4.19 (0.54)	3.88 (1.05)	1.000
	Col	4.08 (0.56)	4.13 (0.62)	3.82 (1.02)	1.000
	All	4.08 (0.52)	4.16 (0.57)	3.85 (1.02)	1.000
I know what symptoms are important for	Lung	4.19 (0.40)	4.25 (0.45)	4.06 (1.31)	0.655
	Col	4.23 (0.43)	4.25 (0.45)	4.00 (1.12)	1.000
	All	4.21 (0.41)	4.25 (0.44)	4.03 (1.11)	0.739
I follow-up with specific screening questions to elicit risk for	Lung	4.08 (0.56)	4.13 (0.50)	3.82 (1.02)	0.564
	Col	4.08 (0.56)	4.13 (0.50)	3.88 (1.05)	1.000
	All	4.08 (0.56)	4.13 (0.49)	3.85 (1.02)	0.705
I am confident in making decisions about referrals for	Lung	3.85 (0.93)	3.75 (1.13)	3.71 (1.05)	0.414
	Col	3.96 (0.92)	3.81 (1.11)	3.82 (1.07)	0.257
	All	3.90 (0.91)	3.78 (1.10)	3.76 (1.05)	0.160
I confidently speak to patients about referrals and next steps for	Lung	3.96 (0.53)	3.94 (0.57)	3.65 (1.50)	0.083
	Col	4.08 (0.48)	4.13 (0.50)	3.65 (1.41)	1.000
	All	4.02 (0.51)	4.03 (0.54)	3.65 (1.39)	0.180
I know the referral pathway and act quickly for	Lung	4.04 (0.60)	4.00 (0.63)	3.94 (1.09)	0.157
	Col	4.15 (0.54)	4.19 (0.54)	3.94 (1.09)	0.705
	All	4.10 (0.57)	4.09 (0.58)	3.94 (1.07)	0.197
<b>Average confidence score</b>	Lung	3.97 (0.64)	4.08 (0.67)	3.90 (1.06)	0.317
	Col	4.03 (0.63)	4.12 (0.65)	3.90 (1.06)	0.866
	All	4.04 (0.72)	4.09 (0.60)	3.90 (1.05)	0.404

Wilcoxon signed rank test

It was also checked that there was no difference between people who dropped out and those who didn't on pre-test which might have affected the data analysis.

Although on the surface disappointing, education theory might predict such changes as part of a learning process. When people learn they are challenged to see things differently and to question what they have until then taken for granted. One explanation of this result is that through the learning, GPs realise that they maybe did not know as much as they thought they did, this raises their unconscious incompetence to conscious incompetence, leading to reduced confidence and efficacy. Educationalist would argue this is part of the essential process of learning. However, as it is a difference between London and GM it is of interest and warrants further investigation.

The qualitative responses provide a source of data which can help us understand the GPs experience of the learning.

Qualitative data showed that 13/17 GP noted learning from the colorectal modules, whilst 15/17 reported specific learning following the lung module. Examples include

I had not appreciated the significance of explosive diarrhoea (particularly in the AM) – I am not alerted by this (GP11)

How important it is to have in mind that patients' can downplay their symptoms. With symptoms such as PR bleeding this could e due to fear or even embarrassment (GP 5)

It shows that something that might only take another 5mins, could change the course of the rest of someone's life. (GP 11)

The consultation highlighted the importance of asking about red flag symptoms. I liked the way the GP used the wife's concerns to bring up the possibility of cancer (GP27)

Additionally GPs reported changing behaviour as a result of the learning.

In future I will do a full PR on all patients with potential haemorrhoids (GP11)

I will focus more in future on asking more about functional activity, weight and appetite (GP30)

I will refer those who have blood on the glove after PR (GP 27)

I will explain more about the 2WW appointment and make sure they have support of family and friends when they attend (GP19)

### 10.2.5 Impact on confidence about referral

Like the Manchester pilot, GPs also reported perceived changes in their likelihood of over and under referring

OVER-referral	Cancer	%	UNDER-referral	Cancer	%
% less likely to OVER refer	Lung	27	% less likely to UNDER refer	Lung	80
	Colorectal	27		Colorectal	80
	Both	27		Both	80

The data from London was very similar to Manchester; with improvements in overall confidence in knowing when to reassure a patient and not refer, in lung (p=0.034) and overall (p=0.005). In colorectal cases there was a strong tendency (p=0,058)

<b>I am confident in knowing when not to refer a patient for</b>	<b>Lung</b>	<b>3.35 (0.56)</b>	<b>3.31 (0.60)</b>	<b>3.53 (1.01)</b>	<b>0.034</b>
	Col	3.46 (0.58)	3.44 (0.63)	3.59 (1.00)	0.058
	<b>All</b>	<b>3.40 (0.57)</b>	<b>3.38 (0.61)</b>	<b>3.56 (1.00)</b>	<b>0.005</b>

Wilcoxon Signed Rank Tests

### 10.2.6 Impact on decisional conflict

The training had no overall impact on decisional conflict, but was shown to effect a change on aspects of decisional conflict which related to clarity about treatment (meaning referral) (p=0.025) and a tendency to have an impact on satisfaction with the decision making process (p=0.084)

<b>Question</b>	<b>Pre-test (n = 26) Mean (SD)</b>	<b>Post-test (n = 17) Mean (SD)</b>	<b>Sig</b>
<b>1</b> The decision to refer was hard to make (negatively weighted)	2.31 (0.93)	2.38 (0.89)	1.000
<b>2</b> I was unsure what would be best (negatively weighted)	2.50 (1.03)	2.25 (0.86)	0.107
<b>3 It was clear what treatment would be best</b>	3.38 (1.02)	3.88 (0.81)	<b>0.025</b>
<b>4</b> I felt I did not know enough about the treatment alternative (negatively weighted)	2.56 (0.87)	2.38 (0.81)	0.763
<b>5</b> I had trouble making the decision because important information is unavailable (negatively weighted)	2.23 (0.71)	2.06 (0.57)	0.480
<b>6</b> It was hard to decide if the benefits of the treatments were more important (negatively weighted)	2.46 (0.76)	2.50 (0.89)	0.509
<b>7</b> It was easy to identify all of the considerations	3.27 (0.87)	3.44 (0.81)	0.161
<b>8</b> I fully understand the patient's views regarding the important issues	3.65 (0.80)	3.81 (0.54)	0.157
<b>9</b> I believe the patient fully understands the risks and benefits	3.77 (0.82)	4.00 (0.52)	0.527
<b>10</b> I believe the patient will comply with the referral	3.88 (0.65)	4.13 (0.50)	0.527
<b>11</b> I am satisfied with the decision	4.08 (0.56)	4.31 (0.48)	0.480
<b>12</b> I am satisfied with the process used to make the decision	3.77 (0.71)	4.06 (0.57)	0.084
<b>Total decisional conflict score (60)</b>	<b>28.4 (5.10)</b>	<b>25.9 (5.37)</b>	<b>0.109</b>

Wilcoxon Signed Rank Tests

## **11. Learning from the pilot**

For the purposes of completeness the project team identified a number of aspects of the first pilot that required reflection. In some of these aspects amendments were made for the 2<sup>nd</sup> pilot or the roll-out and some are noted as lessons identified but not yet acted upon.

### **11.1 Gateway-C development (Learning zone)**

#### **11.1.1 Involvement of service users in course development**

Improvements were made following the pilot to the way that services users were involved in the process of course development. The Gateway-C and Service User team identified a process which enabled users to be more integrally involved in script development, to ensure that scripts could be created that reflected all the challenges required. The process identified involved

- Dr Taylor interviewing service users about their own stories, drawing from these and putting together a profile of a patient for Dr Heaven.
- Dr Heaven and Dr Taylor interviewing clinical experts to establish common presentations, symptoms, tests and pathway processes.
- Scripts were then worked up and sent back to user groups and clinical experts for comments.
- Comments were incorporated into the scripts before the consultations were filmed. In the pilot stage scripts were developed and then sent to user groups for review.

The original two scripts did not follow this process. The lung early diagnosis script was created from cases known to Dr Taylor and Dr Heaven. The colorectal early diagnosis script was based on a specific story of the son of a person affected by cancer, who engaged with Dr Taylor from the start.

#### **11.1.2 Course development (improving courses)**

Following the pilot, the team reviewed the ratings and reflections of participants about specific learning activities and made improvements to these for the London pilot and before they were rolled out further. As an example, a number of GPs thought the interactive consultation within the lung cancer early diagnosis was too complicated, with too many possible endings. This feedback is reflected in future courses where the flow is simpler.

To inform the future development of e-learning modules, GPs were asked about which future modules they would be interested in. GPs were predominantly interested in modules focusing on early diagnosis with the top 5 rated modules being: haematological cancer, hepatic-pancreatic-biliary cancer, non-site specific cancer, childhood cancer, and gynaecological cancer. The top two of these have been taken forward for development so far.

The feedback received from GPs on the modules has been essential and has helped inform future modules.

### 11.1.3 Learning activity grading

Some GPs failed to complete the courses because the grade set to pass any quiz was 100%. Participants could redo the activity as many times as required to achieve the pass mark, however, a few became frustrated with this.

For the London pilot the pass mark for quizzes was lowered to 80% which was felt to be more reasonable and the same level of frustration was not apparent.

### 11.1.4 Course completion progress

As the GM pilot drew to a close there were a number of GPs who claimed to have completed activities that was not showing up to those administering the moodle platform. In one case, due to the size of the screen, boxes that displayed as ticked when an activity was complete were just not obvious to this user. A plugin has since been added to the moodle to display a completion progress bar which turns green as different



activities are completed.

## 11.2 Branding of Gateway-C

### 11.2.1 Website domain name

The group established a brand that could be adopted in promotional materials and protected through trademarking in future they would pursue the use of 'Gateway-C' and secure the domain names [www.gatewayc.org.uk](http://www.gatewayc.org.uk), [www.gateway-c.org.uk](http://www.gateway-c.org.uk), [www.gatewayc.org](http://www.gatewayc.org) and [www.gateway-c.org](http://www.gateway-c.org) through '123 Reg' with [www.gatewayc.org.uk](http://www.gatewayc.org.uk) selected as the domain name to promote specifically.

In the roll-out phase we have continued to promote [www.gatewayc.org.uk](http://www.gatewayc.org.uk) and are progressing trademark registration for the name Gateway-C and the image below under class 41 (education services) and 44 (medical service).



### **11.2.2 Website registration form**

Reporting uptake and providing tailored follow up at a practice level about participants completion progress is only possible where users from the same practice are enrolled with exactly the same name. The group explored the idea of pre-loading the names of all practices across GM and Eastern Cheshire to overcome any issues in this regard, however, it was felt that this approach was not sustainable given how readily practices merge.

The use of practice code as a registration field ensures that all participants from one particular practice are enrolled with the same name.

### **11.2.3 Website community support area**

A specific page of the website looks to signpost GPs to community support groups and services that are available to the patients in their area. Following the pilot, it came to light that a similar database was being compiled by another GM Cancer Vanguard project team as part of the development of an app that would be used by 'cancer champions'. Following the launch of this app (ICan), the group agreed to change this area of the website to link directly to the app, keeping in mind the future potential for the website to be used by audiences outside Greater Manchester for whom the app would not be relevant.

### **11.2.4 GP decision support tools**

In the pilot courses, the use of [QCancer](#) risk assessment tool by GPs is promoted. The group was also approached by a Birmingham GP and his father to consider promoting the use of a newly developed decision support tool for GPs called 'Cancer maps'. This mind map tool had already received positive feedback from CRUK and RCGP but required further development work for it to be made available more widely to GPs.

The group considered piloting the use of this tool with the cohort of participants that had been established for the Gateway-C pilot, however, as year two commenced the Oversight Group required the group to focus efforts more fully on rolling out Gateway-C to GPs in Greater Manchester and Eastern Cheshire and not on the pilot of this decision support tool.

There is currently a link in the resources section of the website that signposts GPs to CRUK endorsed decision support tools.

## **11.3 Monitoring Engagement Effectiveness**

### **11.3.1 Recruitment of GP practices (selective bias)**

Two aspects of recruitment introduced to ensure sufficient participation levels in the timeframe allocated could arguably have biased the output; the payment to GPs to participate and soliciting interest through Dr Sarah Taylor's existing network of GPs in South Manchester.

### 11.3.2 Incomplete survey data

The feedback questionnaires given to the GPs following the learning were not always fully complete. In Greater Manchester, only 18 out of 34 (53%) had every required answer completed, however there was no more than 12% of the data missing on any one question and therefore all responses were used in the analysis. At all stages data from 'drop-out' GPs was compared to those who remained to ensure that drop-outs did not affect the outcome data. Any significant findings are reported in the results section.

### 11.3.3 Limitations of specific questions

- Recommending Gateway-C to a colleague (use of scale)

A five point scale was used to suggest how likely the GPs were to recommend Gateway C; from "not at all" to "somewhat likely" to "very much". In analysing the two lower points were used to mean that the GP would not recommend, the central and 2 higher points were used to mean recommend. It might have been better to use a yes/no question.

- Change in confidence in knowing when to refer

Originally questions asking about the GPs confidence in not over or under referring were intended to be asked on both pre and post questionnaires and the answers compared. However the questions on the post questionnaire were weighted, asking if the GP was "more likely" to over or under refer, so the pre-post comparison was not possible.

### 11.3.4 Cancer referrals audit & analyses

Initial analyses of referrals was insufficient to demonstrate improvement (or otherwise) in GP practice referrals. Further consultation with the referral agencies did yield some additional data which helped to build a more robust picture over a longer period. However, data availability remains a problem. It can be difficult / poor and is dependent on the ability and willingness of referral agencies to supply the data required. We were fortunate in that we were able to access additional data on referrals over a longer period but this resulted in some additional delays. GM needs a central local cancer data system which can supply up-to-date (ie near real time) information on a GM, locality or GP practice basis. Practice level profiles which can ultimately be linked up with diagnosis and outcome events need to be developed across GM. Mapping of GM-wide data and cross-referencing this with other factors (eg Be Clear on Cancer campaigns) could provide a rich and valuable picture.

Analyses of GP consultations provided valuable insight into the extent to which symptoms are recorded. However, more detailed analysis would be required in order to understand consultation and referral behaviour more fully and generate deeper learning. For instance, there are examples of consultations which apparently show 'red flag' symptoms but that were referred by a non-2WW route. It is believed that there may be other factors which justify such referral but this is not clear without further discussion. These were alluded to in 9.2.7.

Additionally, the consultation analyses could have been further improved in the Greater Manchester pilot with the inclusion of additional questions related to age and smoking status.

## 12. Rollout progress, approach and learning

In January 2017 the Greater Manchester Vanguard Oversight Group recommended that Gateway-C be rolled out to as many primary care staff as possible, following positive feedback received from the pilot.

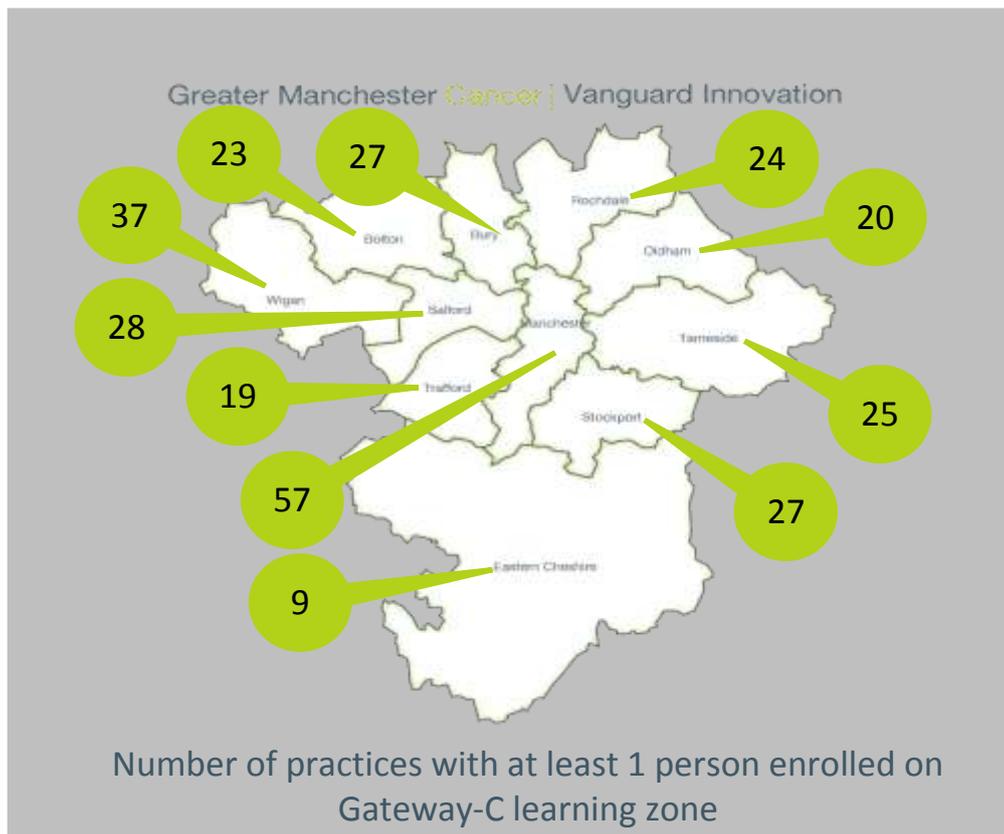
A target was set to enrol at least one individual from at least 60% of practices across Greater Manchester and Eastern Cheshire by 31 October 2017. This would include at least one ‘early adopter’ in each of the 11 NHS Clinical Commissioning Groups listed below.

The project group allocated a significant proportion of its resource to marketing, communications and engagement activities in year two. This included 2 days per week dedicated by the Project Manager to rollout activities with support from four Cancer Research UK Health Professional Engagement Facilitators acting in their designated CCGs. A Project Administrator was also recruited for 2.5 days per week primarily to enrol registered users on the learning zone.

CCG Area	CRUK Facilitator
Bury, Heywood Middleton Rochdale (HMR), Bolton	Nicola Harrison- Swainston
Manchester and Stockport	Steve Jones
Wigan, Trafford, Salford, Eastern Cheshire	Daniel Clark
Oldham, Tameside & Glossop	Azra Zia

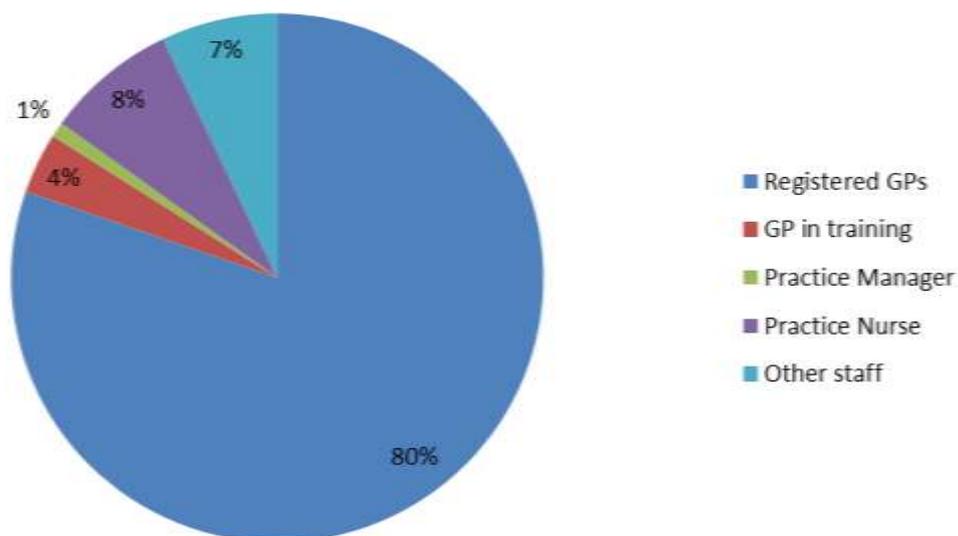
### 12.1 Registrations

On 9 October, the project team reported that they had exceeded the target set by the Oversight group, with **62%** of practices across Greater Manchester and Eastern Cheshire having at least one person registered to use the platform. This equated to 304 practices, based on a list of practices provided by the Strategic Clinical Network and validated by the CRUK Health Professional Engagement Facilitators (Annex 6). These areas spread across the CCGs as depicted below.



It is noted nationally that practices are merging and closing at quite a rapid rate currently, with the RCGP commenting at their recent conference, that at least 2 practices a week are closing nationwide. Over the course of this project, nearly forty changes were flagged up across Greater Manchester, with practices either closing or merging with others. The figure of 62% is therefore only accurate at the date reported. The CRUK Facilitators continue to follow up with practices left to sign up and new registrations are coming in daily.

From the 304 practices were 538 registered users. The chart below shows how this equates to role type. GPs were clearly the most obvious group to register and the marketing effort has primarily been targeted at this group, however, other practice staff also showed interest by enrolling on the courses.



## 12.2 Effectiveness of marketing and communication channels

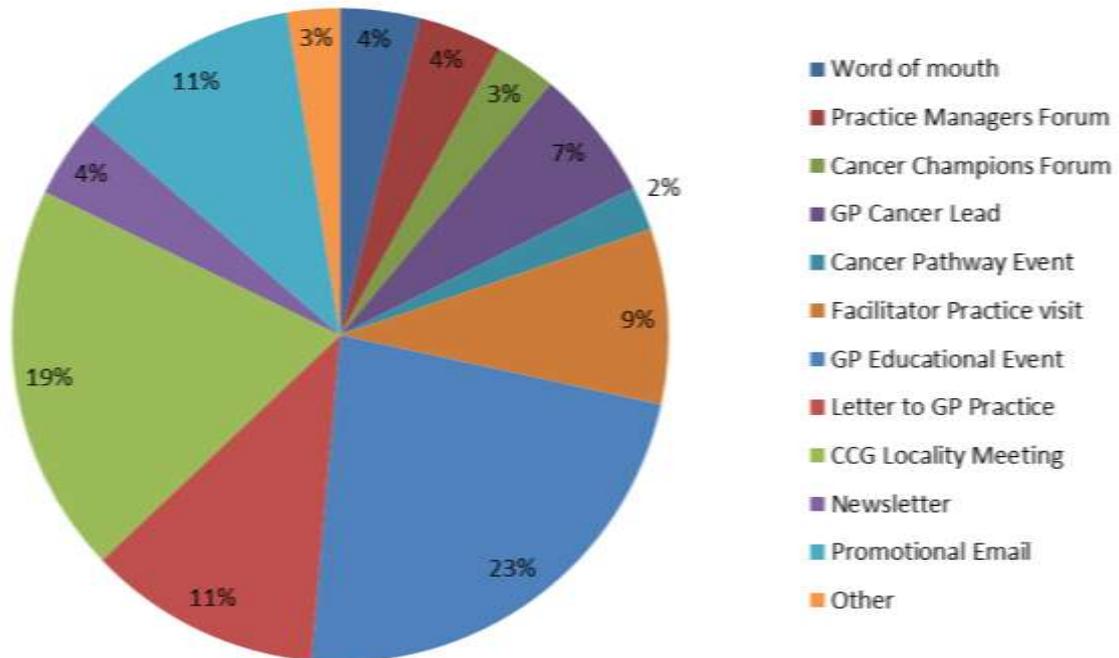
A variety of marketing and communications activities were undertaken to drive registrations, starting with a preview evening event on 3 May 2017 for CRUK Facilitators, Macmillan GPs, CCG Commissioning Managers and service user representatives receiving a preview of the pilot findings from the project team.

Prior to this event a logo was developed to represent Gateway-C and this was utilised across a range of marketing materials including post it notes, coasters, flyers and pop up banners (flyer annex 7). These materials were available for attendees to take away and share at other events. During the pilot GPs were provided with incentive packs, which was later evaluated.

The preview event was well attended with over thirty people from across all CCGs. This generated productive discussions about key opportunities to engage with primary care staff about Gateway-C and other materials they felt would be helpful to promote the platform. A question was then added to registration about: 'Where did you find out about Gateway-C'.

The chart below shows results of how registrants heard about Gateway-C. The majority (23%) was from GP Educational events, the second most common was from the CCG locality meeting.

CRUK Facilitators often captured the GPs details at these events on post cards and then registered them online afterwards, effectively removing the registration step for the GP.



### 12.2.1 Links to behavioural insight project with the Strategic Clinical Network

The team worked with the SCN behavioural insight project who supplied individual referral information to practises in a letter. The personalised letter that went to over 250 GP practices in Greater Manchester referenced Gateway-C as useful tool which can help GP practices improve their referral ratios, as reported on the nationally available Fingertips web site

(<https://fingertips.phe.org.uk/profile/cancerservices/data#page/0>).

10% of GPs said they found out about Gateway-C through a letter to their practice. Whilst we could not explicitly ask GPs if this letter had come from the Greater Manchester and Eastern Cheshire Strategic Clinical Network, anecdotally we know that it did in some of the cases where the GPs contacted the SCN.

### 12.2.2 Support from GM Cancer Vanguard communications

The project team also utilised the support of the GM Cancer Vanguard Communications Manager to support the registration efforts by writing and placing news articles about Gateway-C primarily in CCG and NHS Newsletters and on the GM Cancer Vanguard website. A substantial article has also featured in Prescriber Magazine (annex 8).

Twitter was also used to drive visitors to these website articles (both the GM Cancer Vanguard and School of Oncology accounts) and when GWC was showcased at various events. On reflection it would have be useful to add Twitter and the Vanguard website to the tick list when people registered to see how effective these were in comparison.

Activity	Number
Articles submitted to CCG Newsletters	10
Vanguard Newsletter – articles published	3
NHS GP Bulletin – articles published	2
New Care Models Bulletin	1
GM Cancer Vanguard Website articles - page views	1400
YouTube – first year commemoration film - page views	500
GWC showcased at events (eg NHS Expo, RCGP Conference, Communities of Practice, GM Vanguard Showcase)	20
Tweets seen related to Gateway-C on GMCV account	11,000

### 12.3 Access and completion

The project team has also used data collected by moodle to produce reports about how many registered users have completed courses in the learning zone, as well as looking at the number who have accessed but not yet completed courses. Individuals who complete a course are issued with a certificate for their CPD records.

In October, the focus of the effort by the team and the CRUK Facilitators in particular shifted to encouraging those GPs who have registered to take time to complete the courses. The flexibility built into courses, such that GPs may start a course one week, log out of the learning zone and return where they left at a later date, explains the time lag between people registering, accessing and completing courses. The project team will now monitor this on a monthly basis and look at how specific interventions might produce any spikes in activity and course completion.



### 12.3.1 Initiatives to support access and completion

- The Project team has worked across provider trusts to highlight Gateway-C to GPs. Discharge summaries from UHSM currently make reference to Gateway-C. From November all discharge summaries from The Christie, sent to GPs regarding their patients will have a reference to Gateway-C.
- Automated messages from the moodle platform will now contain “Gateway-C” in them, to assist GPs in finding their log-in details. To date emails from moodle providing registered users with their login details were in danger of going missing in e-mail inboxes because the word Gateway-C was not listed in the address (only in the subject of the e-mail).
- A new e-mail address, ‘gateway@christie.nhs.uk’, will be created to use for reminders to users who have registered but not yet accessed the courses. This will highlight the positive feedback we have had from GPs who have completed the courses. We continue to ask enrolled users for their feedback and a recent GP testimonial is worth sharing at this point.

'Subsequent to a SEA in the practice, I decided to attempt the Gateway-C 'Early Diagnosis of Bowel Cancer' module.

Watching the series of six consultations between a patient and GP provided a unique and interesting way of learning and reflecting on the common presentation of bowel disturbance within General Practice.

In particular, I found being able to put myself in the scenario a great way of learning. I was then able to use my reflections whilst listening to the GP discussing each consultation with a surgeon.

Also the two different endings shown where 'a potential cancer diagnosis' vs 'urgent referral' were discussed with the patient, highlighted the importance of clinical decision making by showing how the patient felt having taken both routes to his diagnosis. Seeing the impact of the consultation in a visual manner made it very realistic.

It is the first time in a long time that I have felt enthusiastic about CPD and actually changed my practice!

I would recommend GWC as an interesting, easy and quick way of learning and reflecting on cancer diagnosis.

I will certainly be completing the other modules. '

### 12.4 Website data

During the pilot we asked participants if they found the content on the website useful (as distinct from the moodle learning zone).

<b>Greater Manchester</b>	<b>Pilot</b>	<b>London</b>	<b>Pilot</b>
<b>Yes</b>	48%	Yes	36%
<b>Somewhat</b>	42%	Somewhat	57%
<b>No</b>	9%	No	7%

We also asked pilot participants if they found the navigation of the Gateway-C website easy?

<b>Greater Manchester</b>	<b>Pilot</b>	<b>London</b>	<b>Pilot</b>
<b>Yes</b>	72%	Yes	50%
<b>Somewhat</b>	28%	Somewhat	44%
<b>No</b>	0%	No	6%

Finally, we asked pilot participants how likely they would be to recommend and submit a resource, training event, online course, or support group through the online form for publication on the website.

<b>Greater Manchester</b>	<b>Pilot</b>	<b>London</b>	<b>Pilot</b>
<b>Very likely</b>	34%	Very likely	13%
<b>Somewhat likely</b>	44%	Somewhat likely	44%
<b>Not likely</b>	7%	Not likely	44%

#### 12.4.1 Google analytics

Google analytics on 15 October 2017 show that visitors are tending to view the home page of the website (40.6% of unique page views) and registration page (25.1% unique page views) more than any other pages.

This is not surprising given our marketing efforts have focused on driving registrations.

Visitors to the website since rollout have not explored the other static pages and searchable databases as much as the project team had expected and submission of content for the website using the online forms has been less than anticipated. Annex 9 shows a breakdown of page views across the website.

The group recognises that it will take to establish the website as a 'go to place' for primary care cancer education. Nevertheless the design and level of functionality of the website will be reviewed in the next few months as continuing to keep content refreshed and relevant will take significant resource beyond the Vanguard programme.

#### 12.5 Goldvision (CRM)

Once users had registered on the learning zone, we also took the opportunity to add their details to the School of Oncology customer relationship system (Goldvision). Permission was obtained at registration to contact users in future with notifications about Gateway-C and about other relevant education events.

Mailshots were pushed out to registered users who granted their permission when new modules were released.

We are able to glean insight from data captured by Goldvision as to whether this is an effective tool to remind people to log back into the learning zone and will continue to monitor this.

## **13. Impact of Project and Benefits Realisation**

### **13.1 Legacy**

The project has enabled the building of an online primary care education portal which has been shown to be accessible, easy to use, high quality, relevant, realistic and behaviour changing. This legacy of the study is

- The portal with its current modules,
- The knowledge about building a high quality of education platform
- A system for accessing it the portal
- The relationships and networking created across the GM system

### **13.2 Impact**

The pilot study (section 9 and 10) has given evidence of GPs reporting feeling more confident in recognising symptoms, knowing when to use referral pathways, being more comfortable and more confident in knowing when to use two week and non two week referral pathways. The direct impact on the GPs in the two pilot studies has been described extensively.

### **13.3 Benefits**

The study was not able to provide irrefutable evidence for changes in referral behaviour or change in A&E presentation, due to its limitations in size and access to data. However, there is some suggestive evidence that Gateway-C might be having an impact on referral behaviours.

Changes in recording of symptoms has been shown. Logic would dictate that this will change outcomes for patients, although direct evidence of that link was beyond the scope of the study

Measuring change in patient experience was again beyond the scope of the study, but the project has provided evidence that Gateway-C does change GP attitudes to preparing patients better for referral, and to mention cancer as a possibility to them. This in itself will change patients' experience of the referral process.

## **14. Recommendations**

Gateway-C is already accessible to GP practice staff in Greater Manchester and Eastern Cheshire, with over 62% of practices having at least 1 registered user.

By the end of the vanguard, Gateway-C will have developed early diagnosis modules in 6 cancer pathways, one late effects module covering 3 common late effects and one end of life modules covering lung symptoms. Planning is also underway to produce an acute oncology module. We will have conducted a focus group with community pharmacy in order to assess further content development opportunities. To meet all the needs of primary care further expansion is needed.

Based on the outputs and outcomes of both the pilot and early rollout in GM, there is a strong case for scaling-up the content in the learning zone for primary care and in the longer term for opening up the courses in the learning zone to other audiences identified in the GM Cancer Education Strategy; community services, secondary care, social care and patients.

Based on the outputs and outcomes of both the GM and London pilots, the project team is in discussion with national cancer vanguard partners, other Cancer Alliances and CCGs to consider providing wider access to the Gateway-C learning zone outside of the Greater Manchester CCGs.

It is therefore recommended that:

- 1. Gateway-C is continued across the GM System**
- 2. The expansion of Gateway-C for primary care is continued so that is can cover all cancer pathways living with late effects and other aspects of palliative care**
- 3. Gateway-C is expanded and made relevant to non-primary care audiences across GM**
- 4. Gateway-C is made available outside of GM, to provide a resource for the whole health care system**

## **15. Implications**

### **15.1 For GM Cancer System**

For the GM cancer system to deliver on the recommendations, GM needs to identify a way of continuing to support and expand Gateway-C, in order to realise its full potential. This will require a dedicated team of staff, and funding for module development.

Funding models are being explored by the team, as is a licencing system. However to realise the full potential and make gateway-C as successful as it has the potential to be, GM Cancer should consider underwriting Gateway-C over the three year period.

GM Cancer or individual CCGs could also consider incentivising GPs and other primary care staff to enrol and complete at least one course on Gateway-C, being paid a sessional rate to do so.

#### **15.2.1 GM Cancer Education Strategy**

The Cancer Education Strategic Plan for Greater Manchester and Eastern Cheshire already outlines how Gateway-C could be sustained beyond the GM Cancer Vanguard and scaled up to cover other audiences, content areas and cancer pathways.

This strategic plan has been consulted upon and was presented to and accepted by the GM Cancer Board in September 2017. A financial allocation for supporting the delivery of the plan is contained in the GM Cancer Plan Funding bid, but this does not include funding for Gateway-C. Discussions are ongoing in relation to this.

#### **15.2.2 Intellectual property**

Integral to sustaining Gateway-C beyond the life of the GM Cancer Vanguard programme is the transferral of rights of ownership of intellectual property to a single owner. As underwriter of the GM Cancer Vanguard and employer of the majority of staff involved in creating copywritable content of Gateway-C, this has been attributed to The Christie. This is based on advice received from TrustTEC.

Dr Sarah Taylor, the only other individual with reasonably claim rights of ownership has already assigned these rights to The Christie.

The developer, involved in the design of the website will need to assign their rights to any IP to The Christie School of Oncology if their agreement is renewed. Currently they have assigned rights over to the GM Cancer Vanguard.

Actors performing in films for Gateway-C courses will need to sign agreements to cover any rights they might have as performers. This agreement still needs finalising with TrustTEC. Costs to cover this have been built into the financial plan going forward.

### **15.3 For wider Cancer system**

The GM Cancer Vanguard expects to have spent around £350k developing and piloting Gateway-C over two years. Being NHS money, benefits should be realised across the whole NHS system.

The output of this project is a well-developed website and virtual learning environment, offering evidence based behaviour changing education and information. Being online, it can be accessed anywhere, irrespective of a persons' location. There is therefore a good case for ensuring that other areas of the NHS do not replicate this work. The team is therefore investigating systems to open-up access for GPs and others outside GM Cancer Vanguard through licencing Gateway-C. Funds can then be used to scale up the content of Gateway-C for the benefit of all.

At the time of writing discussions are progressing with the following organisations about purchasing a 3 year licence for practices in their area to access Gateway-C.

- UCLH Cancer Collaborative
- RM Partners
- Merseyside & Cheshire Cancer Network
- Southampton CCG

We continue to receive regular enquiries from GPs outside of the area looking to access Gateway-C courses, most recently at the RCGPs' annual conference. Our message currently is that we can offer access to a litebite pancreatic early diagnosis course to give them a flavour of the style of learning and that they should encourage their CCG or Cancer Alliance to discuss access opportunities further with us.

## **16. Conclusion**

Gateway-C has been a huge success. It sets out to tackle an issue of national importance. It has shown that it offers an innovative, relevant, realistic, evidence based high quality solution which is available to GPs when they need it. It has the potential to be scalable, assessable and affordable when considered across the whole NHS. The project has been shortlisted for a HSJ Award and awaits the outcome of the judging on 22 November 2017.

It is therefore recommended that the GM Cancer Vanguard continues to support and fund the project whilst discussions with The Christie, GM Cancer and other Vanguard partners continue, in order for the project team to best prepare for the longer term sustainability and rollout of Gateway-C.

This is a report of the Project Lead on behalf of the project team, however, it is noted that other individuals and organisations are conducting their own independent research and will report separately on this.

- National Cancer Vanguard Evaluation – Optimity Technopolis – Rapid Cycle 1
- GM Cancer Vanguard - Manchester University – Cheryl Jones - health economic research
- Manchester Metropolitan University – Kimberly Lazo, PHD student - Practice to policy: assessing evidence-based public health in Greater Manchester

## 17. References

All statistics referenced are taken from Cancer Research UK unless specified below from page 8.

1. Møller H, Gildea ., Meechan D., Rubin G., Round T., Vedsted P. (2015) Use of the English urgent referral pathway for suspected cancer and mortality in patients with cancer: cohort study (2015). *BMJ* 351 (13th October 2015). [BMJ 2015;351:h5102](https://doi.org/10.1136/bmj.h5102)
2. [Lyraatzopoulos G., Neal RD., Barbiere JM., Rubin GP., Abel GA](#) (2012) Variation in number of general practitioner consultations before hospital referral for cancer: findings from the 2010 National Cancer Patient Experience Survey in England. *Lancet Oncology* [Volume 13, Issue 4](#), April 2012, Pages 353-365
3. Quality Health on behalf of NHS England (2016) National Cancer Patient Experience Survey 2016 <http://www.ncpes.co.uk/index.php/reports/2016-reports>

## 18. Acknowledgements

The project team acknowledges the support of a huge number of other people without whom the success of Gateway-C could not have been possible.

**Technology Enhanced Learning Team** : Phil Danby, Technology Enhanced Learning Manager, The Christie School of Oncology; Thomas Addison, E-Learning and Audio Visual Technologist, The Christie School of Oncology; Nicola Fern, Senior E-Learning Technologist, The Christie School of Oncology; Jack Williams, Learning Technologist, The Christie School of Oncology

**GM Cancer Vanguard Programme Director and Staff**

**GM Cancer Vanguard Steering & Oversight Groups**

**Fanta Bojang, Senior Project Manager – Earlier Diagnosis, UCLH Cancer Collaborative**

**CRUK Health Professional Engagement Facilitators:** Steve Jones; Daniel Clark; Azra Zia

**GPs and other staff at the pilot practices:**

**South Manchester:** Al-Shifa Medical Centre, Withington; Bowland Medical Practice, Baguley; Brooklands Medical Practice, Brooklands; Ladybarn Medical Centre, Withington

**Wigan:** The Dicconson Group Practice, Wigan; Bradshaw Medical Centre, Orrell; Slag Lane Medical Centre, Lowton, Warrington; Dr Alistair Partnership, Ashton-in-Makerfield

**Camden** : Parliament Hill Medical Centre

**Islington** : St Peter’s Street Medical Practice; Clerkenwell Medical Practice; The Group Practice at River Place

**Specialists and service users who inputted their time freely in the creation of modules:**

**Lung cancer – early diagnosis**

Dr. Neil Bayman, Consultant Clinical Oncologist, The Christie NHS Foundation Trust  
Dr. Joanna Coote, Consultant Clinical Oncologist, The Christie NHS Foundation Trust  
Dr. Matthew Evison, Consultant in Respiratory Medicine, University Hospital of South Manchester NHS Foundation Trust  
Mr. Saeed Shakibai, Rider/Golfer/Person affected by cancer  
Dr. Ben Taylor, Consultant Radiologist, The Christie NHS Foundation Trust

**Colorectal cancer – early diagnosis**

Mr Sharma Abhram, Consultant General and Colorectal Surgeon, University Hospitals of South Manchester NHS Foundation Trust  
Mrs Sue Coggins, Person affected by cancer  
Mr Saeed Shakibai, Rider, golfer and person affected by cancer  
Mr Malcolm Wilson, Consultant Colorectal Surgeon, The Christie NHS Foundation Trust

**Pancreatic cancer – early diagnosis**

Mr Derek O'Reilly, Consultant Hepato-biliary and Pancreatic Surgeon, Central Manchester University Hospitals NHS Foundation Trust  
Ms Lynne McCallum, Clinical Nurse Specialist, The Christie NHS Foundation Trust  
Dr Ben Taylor, Consultant Radiologist, The Christie NHS Foundation Trust

**Lung cancer – end of life care**

Dr. David Waterman, Consultant in Palliative Medicine, Stockport NHS Foundation Trust  
Ms Carole Mula, Clinical Nurse Specialist, The Christie NHS Foundation Trust  
Reverend Andrew Bradley, Pastoral Care, The Christie NHS Foundation Trust  
Dr. Vivek Misra, Consultant Clinical Oncologist, The Christie NHS Foundation Trust  
Service users affected by lung cancer

**Colorectal cancer – long term complications**

Helen Ashby, Colorectal Clinical Nurse Specialist, University Hospital of South Manchester  
Dr Colsum Bashir, Psychologist, The Christie NHS Foundation Trust  
Stephen Booth, Urology Clinical Nurse Specialist, The Christie NHS Foundation Trust  
Anne Crook, Counsellor in Psycho-oncology, The Christie NHS Foundation Trust  
Mrs Sarah Duff, Consultant Colorectal Surgeon, University Hospital of South Manchester  
Dr. Vivek Misra, Consultant Clinical Oncologist, The Christie NHS Foundation Trust  
Steven Wallwork, The Shaw Trust  
Service users affected by colorectal cancer

**Specialists and service users currently involved in modules under development.**

