

# Lancashire and South Cumbria: Our Population Health Management Journey

## Progress and early lessons

September 2019

Case study prepared as part of the Population Health  
Management Development Programme

## The NHS England and Improvement (NHSE/I) Population Health Management (PHM) Development Programme

The PHM Development Programme is helping health and care systems to improve patient care and outcomes, informed by data and analysis. It helps clinicians target those groups of people and individual patients who can most benefit from more personalised or proactive care.

The programme is co-designed between local systems, NHSE/I and Optum. It runs intensively for 20 weeks and provides systems with analysis, support, coaching and workshops to build their PHM capability. Local clinicians are crucial to success, deciding which patients to focus on and how to care for them proactively and sustainably. Local areas are supported to develop plans to build PHM capability and infrastructure systemwide.

Key factors in choosing participating systems such as Lancashire and South Cumbria were the strength of clinical leadership and sufficient data infrastructure to support analysis and segmentation.

### Lancashire and South Cumbria

**Population:** 1,700,000

Lancashire and South Cumbria is an integrated care system (ICS) composed of five integrated care partnerships (ICP). The area has some of the poorest neighbourhoods in the country, including Blackpool, the second most deprived local authority nationally. For most of the area, the quality of life for people with long term health conditions is worse than the average across England.

Lancashire and South Cumbria identified one neighbourhood from each ICP to participate in the programme. Primary Care Networks (PCNs) were emerging at the time of the programme, but five emerging PCNs of approximately 30,000-50,000 population were identified: **Barrow, Blackpool, Burnley Chorley and Skelmersdale.**

## What Lancashire and South Cumbria gained through the development programme

### A culture change for the system and PCNs

The PCNs worked together to understand the health and care needs of their populations. They were supported by data analysts who brought insights from data on their populations to inform discussion. Lancashire and South Cumbria was able to start seeing how data could change what they do, and think differently about their population as a whole.

### Moving from improving health care to improving health

The expertise and understanding of PCNs' own populations led them beyond traditional health care. While the initial programme insights were focussed on health care, the iterative conversations with analysts led PCNs to look more broadly at the health of their population. They used their links with the community and borough councils to consider the wider determinants of people's health.

### Personalised care, informed by data

The programme helped PCNs to find, from the data, people with needs not met by existing models of care. These people received a tailored offer from their clinical teams, including support for their health, psychological and social needs. Jennifer, who is approaching 60, has multiple illnesses and is a full-time carer for her daughter (see page 10). Programme analysts found Jennifer in the data because she lives with moderate frailty and has had more than 10 GP appointments in the past year. A link worker visited Jennifer and helped her reschedule surgery that had been cancelled. The link worker then put her in touch with support in the community to help her care for her daughter and look after herself as well.

### A focus on measuring what matters to PCNs and patients

The programme encouraged Lancashire and South Cumbria PCNs to consider their desired outcomes while designing their interventions. Given the focus on personalised care in these interventions, this meant that PCNs asked themselves what improvements they wanted to see in their patients that goes beyond improved outcomes. PCNs designed data collection that reflected what they and their patients wanted to improve, including a focus on the patient's ability and confidence to manage their health.

## Summary: lessons learned in Lancashire and South Cumbria

### NHSE/I three core PHM capabilities



#### Infrastructure

What are the basic building blocks that must be in place?



#### Intelligence

Opportunities to improve care quality, efficiency and equity



#### Interventions

Care models focussing on proactive interventions to prevent illness, reduce the risk of hospitalisation and address inequalities



### PHM Infrastructure

#### Lesson 1 PHM is 90 per cent culture, 10 per cent data.

Progress has been made by recognising that each of the neighbourhoods were starting from different places and with a broad mix of maturity, they have all accelerated through the programme and developed their understanding of PHM. Key to this was recognising that effective PHM is built on positive relationships between analysts, system leaders and clinicians. Bringing people together to talk about their population is informed by data, but it only leads to change if the right culture is in place.

*When faced with the data there was more joined up decision making. As commissioners, we make them alone, incurring a sense of responsibility. They [the clinicians] got involved, dived in.”*  
(System leader)



### PHM Intelligence

#### Lesson 2 The data can help tell a story about real people

Teams can make progress without the data being perfect and they should start with what they have access to. In Lancashire and South Cumbria, programme analysts and clinicians worked to piece together what the data was telling them about their populations. Visualisations, like theographs, were able to tell a compelling story about where there were gaps in care for some patients. It was then up to the clinicians to decide what they were going to do about it.

*“The clinicians really engaged in the data sets... clinical engagement in data sets has been essential and fully embraced.”*  
(System leader)



### PHM Interventions

#### Lesson 3 Personalisation means seeing people as people

Each PCN took personalisation seriously and built this into their interventions – with several PCNs committing to measuring changes in patient activation (see page 9). This helped interventions to be designed around people as people with health, psychological and social needs. This was supported by data that gave a full picture of individuals - partnering across health and local authorities to do so. And where the data was not enough, PCNs supplemented it with patient and community voices.

*“We know this is a data driven process to find areas to improve individual and community health. We also have an underlying core vision to improve individual and community resilience.”*  
(GP)

## Summary: the Lancashire and South Cumbria PHM journey

### Why were Lancashire and South Cumbria successful (page 5)

Work had been done in Lancashire and South Cumbria to provide a good foundation for PHM to develop:



#### Infrastructure:

Collaborative system leadership in place taking a population health approach with PHM embedded in the overall Healthier Lancashire and South Cumbria ICS plans.

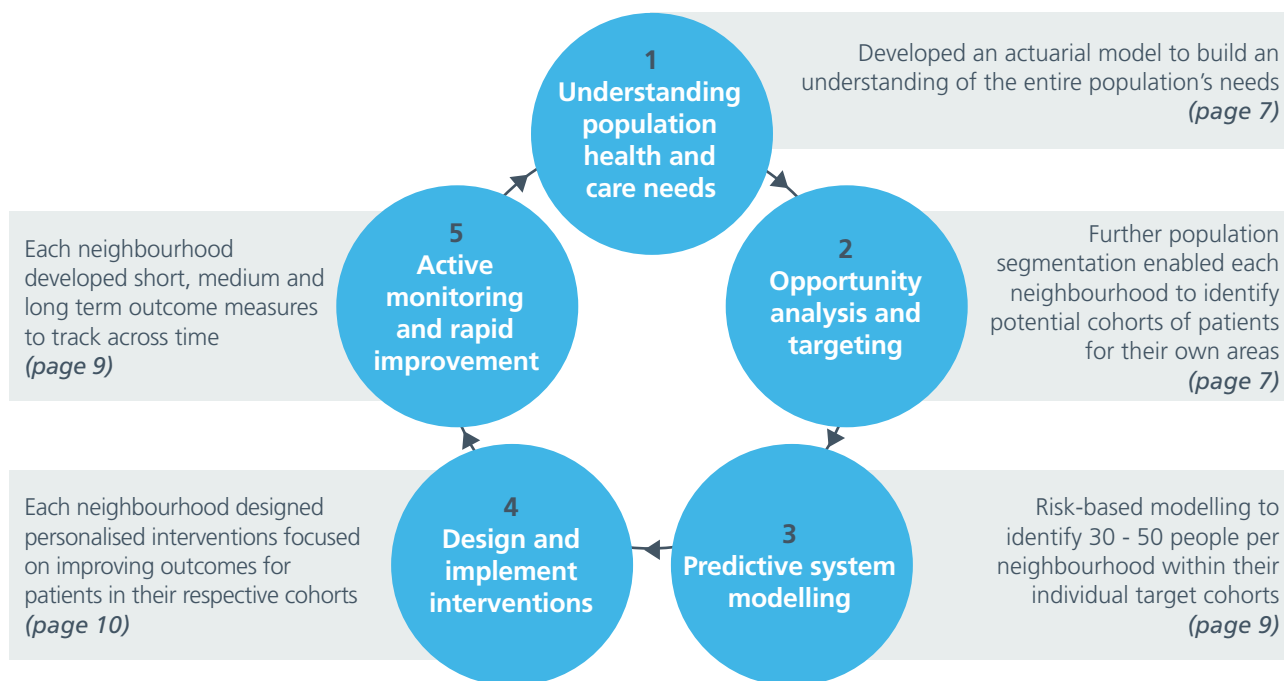


**Intelligence:** Mobilised and developed a culture of using data to inform resource prioritisation and system planning.



**Interventions:** Data was already being used to inform care model redesign. Meetings were already using PHM principles as a framework for focussing changes to how patients were being cared for.

### What did Lancashire and South Cumbria do during the programme? (pages 6-11)



### What is Lancashire and South Cumbria doing next? (page 12)

**Short Term:** Continue to develop and spread the learning from the programme. A new set of PCNs are to go through a locally-led 20-week PHM programme.

**Medium Term:** Build a cross-organisational approach to share analytics skills, expertise and training. Develop and align PHM strategies and priorities across places and the system, with senior buy-in and support.

**Longer Term:** Begin to develop aligned incentives that will support frontline behaviour change and a population health approach across all organisations.

The technical terms used in this case study are detailed in a Glossary (page 13)

## Why were Lancashire and South Cumbria successful?

### Population health was already bringing system leaders together

**System leaders were already collaborating in considering population health** – across their health and care organisations. This approach had strong support from the ICS board. PHM capabilities were already being strengthened in the ICPs across the system and having an impact. Significant progress had already been made in each ICP towards developing a systematic PHM approach.

**A culture of using data to drive planning and clinical improvements** – Lancashire and South Cumbria had an existing culture of using data and insights to inform decisions and planning. Work had already been done to identify information governance (IG) issues that might arise from linking data together and using it for PHM. This meant the programme was able to get started quickly on overcoming any issues.

**Improving Health and Care at Scale (iHACS) had been adopted as a framework for understanding and monitoring population health** – this framework was developed to give the ICS a way of understanding their collective population and coordinating action across Lancashire and South Cumbria. Taking this approach is encouraging a more holistic approach to looking after the population, including personalised care and digital health programmes as well as focussing on wider determinants of health. iHACS developed into a monthly meeting across the system, chaired by a senior public health representative. The regularity of this meeting and its senior buy-in meant that it was able to keep initiatives around prevention and PHM moving. Shortly after the programme began, this monthly meeting became a primary way of keeping a diverse range of stakeholders linked in to the PHM and development programme agenda.

Read more about population health in Lancashire and South Cumbria [here](#).





## Infrastructure: how was success enabled?

### Identifying the right stakeholders to build robust infrastructure

In Lancashire and South Cumbria it was important to undertake engagement with stakeholders to confirm what data is available and what IG arrangements exist.

Gaining support from the local Data Services for Commissioners Regional Offices (DSCRO) was also essential. These organisations release data on patients in line with data access requests that NHS Digital have approved. In Lancashire and South Cumbria, progress happened much more quickly when an IG lead was identified that had a good relationship with the DSCRO. The IG lead had a detailed knowledge of IG and credibility with the DSCRO and the system. This, together with focused support from the programme, helped Lancashire and South Cumbria to navigate IG concerns.

In the long term, these good relationships have provided the groundwork for more data linking to take place. Lancashire and South Cumbria are planning to extend use of the data beyond the programme. This will enable a sustainable data set to be available across the system for the purposes of PHM.

### Engaging PCNs, clinical leaders and analysts

Engagement with PCNs and public health teams began early in the process. System leaders had been working collaboratively already and knew that they wanted more than just clinical teams around the table. This was to be a wider conversation, including public health and other community groups. Initial workshops were an opportunity for a wide range of stakeholders to discover more about the programme and the PHM approach. They also began to raise with local teams how they might start to think about their population as a whole, outside of an organisational approach, and design interventions to target groups that need support.

Lancashire and South Cumbria also sought to build its analytics community. Business intelligence workshops brought together a wide range of analysts that could begin to share learning and network. Most importantly, these workshops also brought clinicians and analysts together in a way that had not happened before. This cemented links between these two communities and began to spark ideas for how analysts and clinicians could work together more consistently.

### The PHM journey as described by one of the PCNs – Skelmersdale



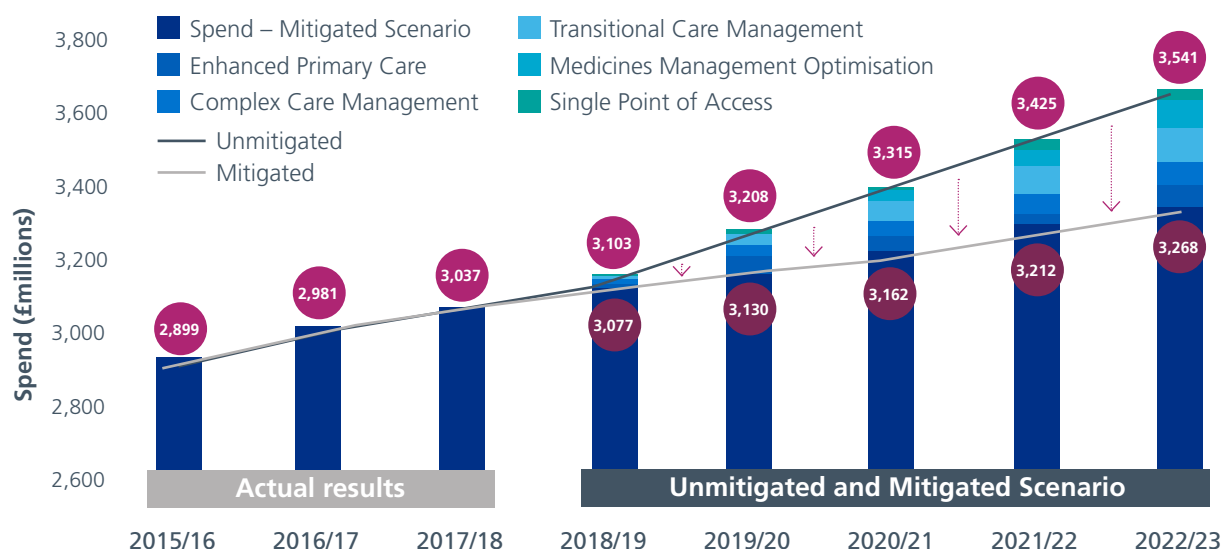


## Intelligence: using data to inform focus areas

**Actuarial modeling** is data analysis that calculates the probabilities of healthcare events happening in the future and the associated impact on system finances. These predictions are used to calculate the patterns of future care for all people in a system.

An actuarial model was developed for Lancashire and South Cumbria at the start of the programme. System leaders began to use this modelling to move away from an organisation-specific view of their patients. The actuarial model allowed system leaders to understand the future demand on the system based on a holistic view of the population. It is based off aggregate data from primary and secondary care. The programme also provided a mitigated future projection. This displayed how future use of resources could be different if they change their model of care.

### Savings per Intervention in the Mitigated Scenario



**Lancashire and South Cumbria's actuarial model** shows who the highest users of the health system will be over the next few years and which groups of patients are growing most quickly. The projection visualised here shows how growth could be mitigated. This was developed further after the programme ended.

Locally, the focus was on developing an accurate view on the projected growth rate if services remain the same - the unmitigated growth rate. To do this the team built from previous models that had been developed.

Support was then provided to show local leaders how to project what the mitigated future might be. This involved engaging with local clinical staff about which interventions they might meaningfully adopt, and then projecting how these might impact people's use of health care. This helped leaders to understand how much of their cost and activity growth might be reduced. Only local teams know how well current interventions are working, what interventions are already planned and their realistic impact. The team was also provided with the actuarial model so that they could input the resulting changes and refresh the model as often as required. Analytical teams were upskilled in use of the model so that in the future it can be a basis for more advanced workforce modelling and contracting changes. Further development of this model will include understanding more about how different possible scenarios could have an impact for different parts of the system.



## Intelligence: moving from data to action

The programme helped PCNs to think through the data on their populations, and ask analysts further questions to help narrow to a specific cohort of patients for initial action. Analytical teams and PCNs chose areas to focus on that were of particular relevance or concerns to their individual PCNs.

In Lancashire and South Cumbria, in particular, there was a real focus on how their population's health might be affected by wider issues in their life. Community approaches, social prescribing and patient activation were all focus areas that the PCNs adopted, encouraged by the system.

### Barrow



Barrow chose to focus on geography and access to services when considering their interventions. The data indicated that just 19 per cent of patients with severe mental illness were attending their physical health check – a finding that corroborated staff's understanding. They looked at how patients were contacted and redesigned the appointment letter and the information leaflet to encourage patients to attend. This was tested with a small group of patients. This involvement of patients in the PHM process allowed through investigation into a known issue. One patient commented that the only reason they had come was because the letter said they could bring someone – otherwise they would not have been comfortable leaving the house.

### Blackpool



Blackpool is the second most deprived borough in the country. Staff knew that patients living in houses of multiple occupancy - where multiple tenants live in a single residence - needed more support. However, this group is traditionally hard to find in NHS data as the information is not recorded in health care. The programme worked with council data to identify who these people were and whether their health was also at risk. Using this analysis, clinicians could identify people that would benefit from further support. Initiatives were designed and tested to support these individuals with health coaching and signposting into the community. A read code helped to find individuals in houses of multiple occupancy in the future.

### Burnley



Burnley already had an interest in connecting with communities and building community resilience. The programme worked closely with local data analysts to identify the patients with moderate frailty. This group was offered an holistic assessment and follow-up support to understand their health needs. At the same time, GP leads identified existing forums that were popular in the community, starting with local church lunch clubs, to build community awareness of frailty and the services on offer. Patients and communities now have a much better understanding of the services available to them and how they can be accessed through the use of local community connectors. The team has seen the benefit in taking an holistic approach, pairing data and analytics with community-asset based approaches. Improvements in patient activation scores are being tracked to measure impact.

### Chorley



Chorley had already begun working across practice boundaries and with other stakeholders, including Chorley Council. These prior interests encouraged Chorley to think wider than traditional healthcare data. A lightbulb moment came when realising that people who were receiving assistance with bin collections – data held by the council – could help clinicians find frail people who had fewer social links. Interventions reflected these links between health and social needs. They used a social prescriber to provide care coordination and outreach for patients identified from this data. Patient activation scores were collected from patients. Patients are starting to see improved activation levels and reduced use of their GP practices.

### Skelmersdale



Skelmersdale successfully used the programme to build a solid grounding in PHM. They used data insights from the programme to consider the complexity of their patients. A multi-disciplinary team was set up to focus on those with chronic pulmonary obstructive disorder (COPD) and additional complexity. This group was identified from the data as being particularly in need of additional support. Patients were found in the data and received interventions like being invited in to see a social prescriber and attend group consultations. A more comprehensive COPD template was also developed, helping with identifying complexity of COPD patients in the future.





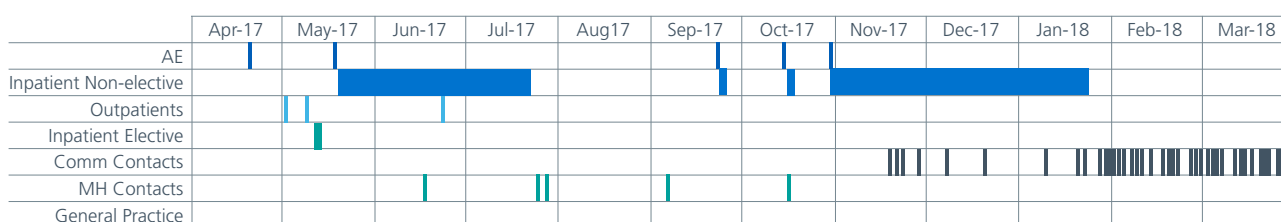
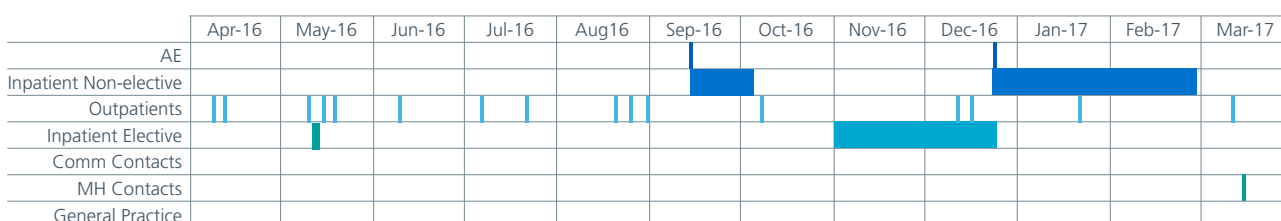
## Intelligence: identifying individuals to take action with

### Visualisations used to bring out the patient story in the data

Once the PCN had agreed on an initial cohort to target, programme analysts conducted further analysis on the PCN's request. The aim was to identify the first 35 to 50 patients to target and following interventions, identify ways to extend this approach. They could then target proactive and personalised care for this group.

To aid this, teams were given heatmaps that looked at the factors that drive complexity within their cohort. These showed system cost – a measure of how much people in different categories are using services. PCNs were able to use this information to identify which groups of patients might be receiving poor value care.

Teams also received **theographs**. These visualisations show how individuals have used care services and show where the system is not working for patients as it should. In Lancashire and South Cumbria theographs particularly resonated with staff who used them to understand the data in a way that also reminded them of the patients at the heart of that data. Clinicians used the theographs to have a discussion on how to better coordinate care for their patients and prevent unnecessary hospital visits. [Read more about theographs.](#)



#### Estimated system cost of care:

2016/17 – £14,000

2017/18 – £19,000

High quality, linked data is vital for PHM. However, PCNs in Lancashire and South Cumbria could start developing their approach to the PHM linked data that was available. The theograph is an example of how the programme helped PCNs see their own data local data and enrich their understanding of their patients. Locally sourced data, coupled with local knowledge, allowed teams to make progress in areas they would not have been able to if they had to wait for all data sources to be linked.

### Measuring the outcomes that matter

Measurement is a critical part of the PHM cycle. Each PCN developed specific outcome measures that they could track in the short, medium and longer-term. This was achieved by adding specific codes to the records of patients who had received the new models of care developed in the programme.

A specific focus in Lancashire and South Cumbria was on collecting patient activation measures (PAM) from patients. Patient activation describes the knowledge, skills and confidence a person has in managing their own health and care. The PAM is a validated way of capturing this and is administered as a survey with patients. People are then described as being anywhere from level 1 to level 4 – with level 1 individuals being passive and overwhelmed by managing their own health and level 4 individuals having adopted many of the behaviours needed to support their own health. [Read more about the Patient Activation Measure.](#)

In Lancashire and South Cumbria, the PCNs had a shared objective of improving patient activation. Some PCNs designed processes to capture patients' activation levels before and after interventions.



## Intervention: how did this make a difference to patients?

**While the PCNs all chose different cohorts of patients to target they all implemented interventions that impacted on patients in different ways.** Interventions in Lancashire and South Cumbria took an holistic view of the population and were developed with input from NHSE/I's personalised care team. This supported the development of interventions that were in line with NHSE/I's [Universal Personalised Care guidance](#).

### A patient story from Lancashire and South Cumbria: 'Jennifer from Chorley'

Chorley PCN identified a series of patients who were under 60, living with moderate frailty who also had a high number of primary care appointments in the last year. One of these people was Jennifer, who lived with hypertension, cataracts and had recently had a knee operation. A link worker (Irene) visited Jennifer and had a conversation to talk through her needs and complete the PAM (see slide 9) to determine her current level of activation. Jennifer was assessed as lacking some knowledge and confidence in managing her health (level 2). She was also a full-time carer for her disabled adult daughter. She was linked in with community services, but only had two appointments left. Irene worked with the GP surgery to reschedule vital cataract surgery and put Jennifer in touch with additional support services, particularly those who could help her as a carer. Irene visited again four weeks later: the patient had her cataract operation and a health care worker was helping arrange future care for her daughter. A Special Educational Needs and Disability worker had helped liaise with her daughter's school. Jennifer was also signposted to opportunities to volunteer for a parent and toddler course, and she enrolled in a cooking course to help with her goal of losing weight. Her patient activation rose to a level 4.

#### PCN cohort identified through the analytics:

- The Chorley team identified patients aged between 45-60 years, who were moderately frail (9 or more Electronic Frailty Index deficits) and had 10 or more primary care appointments in the previous year.

#### Locally-designed intervention:

- Face to face meetings with moderately frail patients aged 45-60 who have high utilisation of primary care. These patients are identified, and then representatives from the practice meet with them to help coordinate access to appropriate care options and provide additional support and education.
- Tracking patient engagement and monitoring the impact on patient outcomes.

### A patient story from Lancashire and South Cumbria: 'Barbara from Blackpool'

The Blackpool team used data on health and housing to find Barbara. She lived in a one bedroom flat, in a house of multiple-occupancy in Blackpool town centre. Barbara lived in poor quality housing, suffered from depression, was unemployed and recently experienced a bereavement. She was in rent arrears and turned to alcohol to help her relax. The PCN arranged for a health and wellbeing worker to visit Barbara. During their visit, the health and wellbeing worker identified severe risks in the quality of Barbara's building and was concerned for her welfare and safety. The worker supported Barbara to call her letting agent and strengthen the locks on the door to help her feel safer. The worker now visits Barbara regularly, building up a picture of her health and social needs. Barbara was referred to a local charity to support her with her bereavement. Other support around her housing was provided by organisations in the Blackpool area, and she found support for finding employment and building her skills and confidence. Barbara's patient activation rose from a level 2 to a level 4 during this time, demonstrating how confidence in managing her health changed with this social support. She is eating healthier and drinking more water and she looks to alternatives to alcohol for socialising.

#### PCN cohort identified through the analytics:

- Blackpool identified residents of houses of multiple occupancy, with depression and other health issues.

#### Locally-designed intervention:

- Holistic and proactive health assessments by health coaches in the PCN.
- Follow-up assessments of social situation by health and wellbeing workers in the council. This included assessment of particular risks to health.
- Signposting individuals to other psychosocial services – counselling, peer support and other social support.



## Intervention: how did the care model change in each PCN?

### Barrow



**Patient cohort:** Patients living with severe mental health issues and other physical health issues.

**Initial List Size:** 12 people

**Intervention:** Followed a quality improvement approach to improving uptake of health checks among patients living with severe mental health issues. An improved information leaflet for patients to outline why they are having a follow up post review.

**Impact:** Understanding what motivates people is key to delivering successful interventions. *"This project pulls together what have traditionally been segregated services."* (System Lead)

### Blackpool



**Patient cohort:** Residents of houses of multiple occupancy with depression and other health issues.

**Initial List Size:** 41 people

**Intervention:** Work jointly to develop health coaching focusing on holistic assessment, counselling, peer support and sign-posting to support groups.

**Impact:** Bringing together multiple stakeholders is important to make and sustain change. *"The programme brought together people who have the same purpose" building a sense of camaraderie."* (GP)

### Burnley



**Patient cohort:** Over 65s with a moderate frailty score.

**Initial List Size:** 48 people

**Intervention:** Created a dashboard as a baseline for face-to-face health coaching, holistic assessment and signposting to other services. Community engagement sessions aimed at bringing people together to discuss improvements to their health and wellbeing.

**Impact:** Utilising existing community assets builds resilience. *"I was very surprised that the clinicians really engaged in the data sets... clinical engagement in data sets has been essential and fully embraced."* (System Lead)

### Chorley



**Patient cohort:** Patients aged between 45-60 years identified as being moderately frail. Patients having 10 or more primary care appointments

**Initial List Size:** 144 people

**Intervention:** Providing care coordination along side social prescribing. A new data collection was designed for assessing patient activation before and after the intervention.

**Impact:** *"Our council leader has had a strong vision about collaborative working across health and social care. This executive interest and vision to drive towards breaking down barriers has been hugely important, and means we are way ahead of most other localities in our area."* (GP)

### Skelmersdale



**Patient cohort:** Respiratory (COPD) and additional complexity. **Initial List Size:** 40 people

**Intervention:** Individual COPD review and holistic assessment. Patients invited in to see a social prescriber and attend group consultation. A new COPD template was designed to record patient information.

**Impact:** *"The programme helped push clinician thinking from disease management to holistic patient and population management. This programme has been going on as PCNs and neighborhoods take more shape. The sense of team helped the PCN development get onto a good footing."* (System Lead)

## How is PHM being taken forward in Lancashire and South Cumbria?

At the end of the development programme, Lancashire and South Cumbria developed a **roadmap** (see below) to further develop and commit to a PHM approach.

**Significant up front effort is needed to ensure IG and linked data is in place.** The system is looking to implement a sustainable linked data set solution and potentially establishing an ICS analytics hub. The programme helped build a consensus that all parties should be working from one agreed data-source and that a wider range of stakeholders should have access to this. There are also plans to build on the actuarial modelling to understand more about how different scenarios can be modelled to understand the impact of different interventions.

**Lancashire and South Cumbria wants to understand the patient impact of PHM.** Each PCN has committed to collecting data on their agreed cohorts to measure the effectiveness of interventions, particularly around patient activation. They will be reviewing their outcome measures over the next 6 to 12 months to understand what has improved. There is also going to be another 20 week local PHM programme, with new PCNs.

### Lancashire and South Cumbria's roadmap for PHM

PHM capability	Next steps
<b>Infrastructure</b>	
<b>Leadership</b>	<ul style="list-style-type: none"> <li>• Develop consistent understanding and vision of PHM across ICP and ICS leadership.</li> <li>• Identify project management office resources to support PHM.</li> </ul>
<b>PCN development</b>	<ul style="list-style-type: none"> <li>• Develop ongoing support to embed approach to deliver targeted impact in five existing PCNs.</li> <li>• Next priority PCNs identified for new local wave of PHM programm.</li> <li>• Continue ALS format to develop clinical skill in applying PHM approach.</li> </ul>
<b>Analytics capacity and capability</b>	<ul style="list-style-type: none"> <li>• Work with partners to release resources to support analytics at all levels of the system, including supporting PCN MDTs in interpreting data.</li> </ul>
<b>Data infrastructure and maturity</b>	<ul style="list-style-type: none"> <li>• Continue to integrate wider data sources (social care, County Council, community mental health, fire service, assisted bin collection) and move to long term hosting arrangement.</li> <li>• Work with PCNs and partners to ensure data and analytics tools are actionable and meaningful to all levels of the system.</li> </ul>
<b>Intelligence</b>	
<b>Impact modelling and outcomes measurement</b>	<ul style="list-style-type: none"> <li>• Develop skills for long term actuarial modelling and planning purposes.</li> <li>• Implement structures to support impact measurement in line with the PHM cycle.</li> <li>• Ensure structures in place to support measurement at patient level.</li> </ul>
<b>Tools to target those in need</b>	<ul style="list-style-type: none"> <li>• Sophisticated predictive models, consistently applied, tailored to local needs.</li> <li>• Developing own predictive models and adopt a data driven approach to modelling.</li> </ul>
<b>Interventions</b>	
<b>Implementation of effective interventions</b>	<ul style="list-style-type: none"> <li>• Multi-professional teams resourced and skilled to apply the PHM approach.</li> <li>• Personalised care team engaged and measures being taken to ensure maximum patient activation.</li> <li>• Wider stakeholders being engaged to share data and support interventions.</li> </ul>
<b>Workforce</b>	<ul style="list-style-type: none"> <li>• Workforce assessed to ensure all staff are working to the "top of license" and in line with PHM methodology.</li> </ul>
<b>Transitions of care</b>	<ul style="list-style-type: none"> <li>• All parts of the system being engaged to support transitions of care.</li> </ul>

## Glossary

Term	Definition
<b>Actuarial modeling</b>	Actuarial modeling is data analysis that calculates the probabilities of healthcare events happening in the future and the associated impact on system finances. These predictions are used to calculate the patterns of future care for all people in a system.
<b>Neighbourhoods</b>	Lancashire and South Cumbria's precursor to primary care networks (PCNs) was neighbourhoods. These varied in size but were approximately 30-50,000 patient population. This case study refers mainly to PCNs for simplicity.
<b>Personalised care</b>	Personalised care means people have choice and control over the way their care is planned and delivered, based on 'what matters' to them and their individual strengths, needs and preferences. It is a new way of delivering NHS care in which people have options, better support and more joined-up care. <a href="#">Read more about the universal personalised care model</a>
<b>Population health management (PHM)</b>	PHM is a means of improving population health by using data driven planning and delivering of proactive and personalised care to achieve maximum impact.
<b>Segmentation</b>	Segmentation is grouping the local population by what kind of care they need as well as how often they might need it. This can be done at a population level, by identifying different segments in a population, or at an individual level, by identifying which segment an individual fits into. <a href="#">Read more about segmentation</a>
<b>Theograph</b>	'Theographs' are a way of visualising an individual patient's use of health and care services. It allows clinicians to see how individuals have used care services and any gaps or duplication. <a href="#">Read more about theographs</a>



## Introducing the Lancashire and South Cumbria PHM team

The following individuals have been instrumental to the success of PHM across Lancashire and South Cumbria.

For more information about Lancashire and South Cumbria PHM Journey, please contact Sakthi Karunanithi at [sakthi.karunanithi@lancashire.gov.uk](mailto:sakthi.karunanithi@lancashire.gov.uk)

For more information about the National PHM Programme, please contact [england.stgphm@nhs.net](mailto:england.stgphm@nhs.net)

PHM Role	Name	Title
Senior Responsible Officer	Andrew Bennett	ICS Executive Sponsor & Executive Director of Commissioning
Senior Responsible Officer	Dr Sakthi Karunanithi	Senior Responsible Officer (SRO) for Population Health and Development Programme Director
Consultant Public Health	Eleanor Garnett-Bentley	Consultant Public Health
Data and Analytics Lead	Declan Hadley	ICS Digital Lead
Programme Manager	Lindsey Roome	ICS Population Health Programme Manager
Communications and Engagement Lead	Louise Barker	Senior Communications & Engagement Manager, Lancashire and South Cumbria ICS
Integrated Care Partnership (ICP) Lead	Donna Roberts	Central Lancashire ICP Lead
ICP Lead	Jackie Moran	West Lancashire MCP Lead
ICP Lead	Collette Walsh	Pennine ICP lead
ICP Lead	Peter Tinson	Fylde Coast ICP Lead
ICP Lead	Helen McConville	Morecombe Bay ICP Lead