South West London

Population Health Management 2022

South West London Integrated Care System

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Introduction

There are five problems found in almost every health service in the world:

- Unwarranted variation in quality and outcome
- Harm to patients
- Waste, and failure to maximise value
- Health inequalities and inequities
- Failure to prevent disease.[1]

Many previous NHS re-organisations, plans and initiatives have sought to address these problems and (particularly in the context of population health management) to increase the focus on population health, the prevention of disease and early intervention but have failed to have the scale of impact required.

The COVID-19 pandemic has highlighted the impact of preventable diseases and health inequalities and has once again shown the importance of the social determinants of health. At the same time, it has brought to the fore the strength of our borough-based partnerships and system relationships and has driven innovative practice of population health management focused on some of our most vulnerable residents (perhaps best evidenced by the work on COVID vaccination).

The shift into new Integrated Care Systems (with the ICS Partnership Board a genuine joint endeavour between NHS and non-NHS system partners) presents an opportunity to create an aligned approach to improving population health across NHS providers, Local Authorities, the Voluntary Sector and our residents. It allows us to re-appraise our local and system priorities and encourages us to use the increasingly rich data available to target those in our communities with the greatest need, much of which is unmet. It also allows us to thoughtfully allocate resources to maximize value, in every sense.[2] This is what is meant by "Population Health Management" (PHM).

This "Roadmap" has been developed following a South West London (SWL) "PHM Stocktake" which involved multiple partners across the system and captured examples of excellent existing practice, valuable distributed assets, high levels of aspiration for a

[1] How to build healthcare systems, J. A. Muir Gray, Offox Press 2011
[2] See definition of "value" in Definitions section (p.9)

range of uses of PHM as well as a variety of development needs. The Roadmap sets out the current context in South West London and the next steps required to improve our capability and capacity to enhance Population Health across our geography.

There is action required to improve the tools and skills available to those already working in our system, to target resource to support PHM but most importantly to change the way we think and behave across our system to move away from a predominantly reactive approach to those presenting at the doors of our services to a more reflective, proactive way of working that actively seeks unmet need across our population, reduces unwarranted variation, maximizes value and plans for the future.

"It's not just what you have that is important. It's what you do with what you have" Prof Sir Michael Marmot

Executive Summary

Population Health Management (PHM) is not a new concept. Understanding the needs of our population and working with them to improve their health has been the core business of public health teams, NHS planners, local authorities and many other key partners in South West London for very many years. What has changed is the imperative (with stark inequities manifest clearly through the COVID pandemic), the political and policy support (with clear requirements set for the new Integrated Care Partnerships and Systems) and the tools available to understand both need and the impact of change (with better quality data and access to data than ever before). Now is the time to take decisive action.

> ***"Of all the forms of inequality, injustice in health care is the most shocking and inhumane."***
> ***Martin Luther King Jr***

We have already come a long way in SWL since engaging with the National PHM Development Programme and creating the right leadership and support to launch and develop PHM. This roadmap sets out that context (captured in our "Stocktake") and the steps we now need to take together, from individuals in communities to SWL system leaders, to create the capability and capacity to use our collective resources more effectively to add most value to our residents and tackle inequity.

These steps include:

1. **Learning by doing** – continuing to roll out PHM pilot projects at each level of the SWL system as well as agreeing one major system-wide programme through the ICS Partnership Board
2. **Culture, behaviour and skills** – training, support and development across SWL to adopt a new paradigm in how we use our system resources and to develop the skills required to drive improvement
3. **Sharing and supporting best practice** – from within and without the SWL system
4. **Developing our intelligence function** – creating the right infrastructure to support PHM and meet wider system requirements by developing our management of data, our PHM "platform" (the analytics tool) and our analytical capability and workforce (including the development of appropriate impact measures).

Why does Population Health Management Matter and What is it?

ICS (Integrated Care System) Aims and Context

Triple aim

The Health and Care Bill includes a legal duty for decision-makers across NHS bodies (Foundation Trusts, NHS Trusts, Integrated Care Boards and NHS England) to collectively consider the impact of their decisions on:

- increasing the health and wellbeing of everyone in the population they serve
- the quality of healthcare services for all the population they serve and
- efficient and sustainable use of NHS resources

Four purposes

In addition, in November 2020 NHS England and NHS Improvement (NHSE/I) published "Integrating care: Next steps to building strong and effective Integrated Care Systems (ICSs) across England."[3]

It described the core purposes of an ICS being to:

- improve outcomes in population health and healthcare
- tackle inequalities in outcomes, experience and access
- enhance productivity and value for money
- help the NHS support broader social and economic development.

In South West London, in common with every other ICS, we have variation in the quality of services and significant inequalities in health status, health care and opportunities to live healthy lives. As a system we have struggled to shift resource to support interventions that genuinely impact health inequalities, prevent and manage illness early and that are ultimately more cost-effective.

When practised correctly and implemented fully, PHM should support all four ICS aims, is a fundamental building block for a successful ICS and can help us deliver value-based healthcare.

In addition, the 2022/23 NHS Priorities and Operational Planning Guidance[4] specifically requires that "by April 2023, every system should have in place the technical capability required for PHM, with longitudinal linked data available to enable population segmentation and risk stratification, using data and analytics to redesign care pathways and measure outcomes with a focus on improving access and health equity for underserved communities."

Finally, and most importantly, PHM matters to patients and residents of SWL. It should be used to focus on population segments and residents based on need and to ensure:

- an increased use of interventions that add value, including non-medical interventions
- a reduction in interventions that do not add personal value and may cause harm
- increased equity, particularly in access to healthcare
- systematic processes to continually identify cohorts of people that are underserved by our current care pathways

and can be combined with personalisation measures to ensure a focus on what really concerns those we aim to serve.[5]

Definitions

There is recurrent confusion about population health, public health, data and health inequalities, so it is helpful to set out some standard definitions for the SWL system.

Population Health (an ICS responsibility)
A focus on improving physical and mental health outcomes, promoting wellbeing and reducing health inequalities across an entire population, including a specific focus on the wider determinants of health (such as housing, employment, education).

Population Health Management (a methodology)
A way of working to help frontline teams and system planners understand current health and care needs and predict what residents will need in the future.

[3] https://www.england.nhs.uk/wp-content/uploads/2021/01/integrating-care-next-steps-to-building-strong-and-effective-integrated-care-systems.pdf
[4] https://www.england.nhs.uk/wp-content/uploads/2022/02/20211223-B1160-2022-23-priorities-and-operational-planning-guidance-v3.2.pdf
[5] See Appendix Section 2 Further Definitions for definition of "personalisation" (p54)

In terms of interventions: it involves analysing data (information) to identify population cohorts (or segments) where interventions will add value, intervening, measuring the impact of interventions and incentivising those interventions that add value.

In terms of planning: it involves using the data (information) to allocate resources optimally to population cohorts with the greatest need and to interventions that add most value.

Population Health Management Platform (a tool)

The data-driven infrastructure that provides a window into all the data needed to help understand and manage the health status and needs of a population.

Public Health

"The art and science of preventing disease, prolonging life and promoting health through the organized efforts of society"[6]. Local authorities have, since 1 April 2013, been responsible for improving the health of their residents and for public health services including most sexual health services and services aimed at reducing drug and alcohol misuse. Each local authority in SWL has a Director of Public Health and a Public Health team.

Health Inequalities

The full definition of health inequalities and inequity is found in the appendix.[7] In brief, it is important to state that population health management deals with all members of a population, some of whom will be suffering from health inequalities. Population health management can be one of many valuable methods for addressing health inequalities, which are multi-factorial.

Data and Information

There are two possible definitions of data

1. Data (Computer)

"Information that is produced or stored by a computer." This is what is often meant by "data" in the context of PHM and certainly is what has been presented thus far

[6] Acheson, 1988; WHO

[7] See Appendix Section 2 Further Definitions (p53)

through Population Health Management Platforms. This has historically often been quantitative.

2. Data (Information)
"Facts or information used to calculate, analyse, or plan something." This includes computer data but this broader "information," which should include rich insights from engagement with communities and much qualitative data, is what is required for effective population health management.

We will be continuing to use "data" to refer to computer data and "information" to refer to the broader concept.

Value[8]
"Value-based healthcare (VBHC)" is a comprehensive concept built on four value-pillars: appropriate care to achieve patients' personal goals (*personal value*), achievement of best possible outcomes with available resources (*technical value*), equitable resource distribution across all patient groups (*allocative value*) and contribution of healthcare to social participation and connectedness (*societal value*)

It is important to emphasise that *technical value* means using the resources for all the residents in need in the population not just those who reach services and become patients, for example focusing on all people with hip pain, not just those people who have had a hip replacement. This means that technical value also includes measurement and minimisation of inequity.

See Appendix Section 2 for further definitions (p53 – 55)

Impact (including exemplars)

Collaborating as ICSs and adopting a PHM approach should support systems to take action to reduce health inequalities, to improve quality of care and patient experience and specifically to "tackle complex challenges, including:

- improving the health of children and young people
- supporting people to stay well and independent
- acting sooner to help those with preventable conditions

[8] Defining value in 'Value-based healthcare' (europa.eu) – EU Expert Panel on effective ways of investing in health

• supporting those with long-term conditions or mental health issues
• caring for those with multiple needs as populations age
• getting the best from collective resources so people get care as quickly as possible."[9]

There are some good examples from the Wave 3 NHSE/I PHM Development Programme in SWL (some of which are now national exemplars), from elsewhere in the UK and internationally of how this can happen through a PHM approach including:

- **East Merton PCN pilot**: focused on severe mental illness and a dual diagnosis of drug and alcohol dependence

- **Sutton Place pilot**: focused on those with musculoskeletal problems and comorbidities

- **Surrey Heartlands ICS**: developed an effective system-wide intelligence function and analytical community of practice

- **Montefiore health system, USA**: developed system-level intelligence-led integrated health and care with improved managements of those attending emergency departments.[10]

[9] https://www.england.nhs.uk/wp-content/uploads/2021/06/B0886_Interim-guidance-on-the-functions-and-governance-of-the-integrated-care-board-August-2021.pdf
[10] See Appendix Section 3 for full examples (p63-67)

SWL Context – PHM

Baseline

It is important to acknowledge that Public Health teams within Local Authorities have been looking at population segments and using a PHM approach for many years. This is show-cased in the regular Joint Strategic Needs Assessments (JSNAs) that have led to excellent and sometimes highly innovative interventions across many different local authority, health and voluntary sector partners. This continues to be a fundamental pillar of the work required to improve population health.

A key step for the SWL Health and Care system was the enrollment in July 2021 onto the Wave 3 of the NHS England/Improvement (NHSE/I) PHM Development Programme to advance leadership, knowledge and skills in using data and analysis for decision making.

In addition, in October 2021, with new dedicated leadership for PHM, various strands of existing work were pulled together under one umbrella. This included:

- work underway in individual boroughs and PCNs (especially the Croydon place PHM programme and including the Wave 3 pilots)
- the development and use of a new PHM "platform" by the SWL Clinical Networks, transformation programmes and the COVID vaccination team (the "Health Insights" tool, developed by our SWL analysts during COVID)[11]
- an emerging business case for a new PHM platform

Progress to date

- "Health Insights" increasingly made available to SWL Clinical Networks and Transformation Programmes (incl. diagnostics, outpatients and long term conditions) and the product is continuing to be developed and further rolled out
- SWL PHM Steering Group and subsequent Programme Board have been established for strategic oversight of the PHM Programme

[11] See next section for more information

- PHM Stocktake undertaken (including an analytics skills mapping exercise supported by Office for Health Improvement and Disparities (OHID)[12])
- NHSE approved all case studies of the pilots from the Wave 3 PHM Development Programme and published them on the FuturesNHS[13] website
- Sutton Place lessons learnt presented at the PHM Development Programme Place Learning Event National Webinars
- NHS ConfedExpo 2022 presentation on clinical and system leadership of PHM in SWL at the Pop Up University under Collaboration and Partnerships with Optum[14] plus Panel member at the Feature Zone sessions Sustainable Healthcare Zone

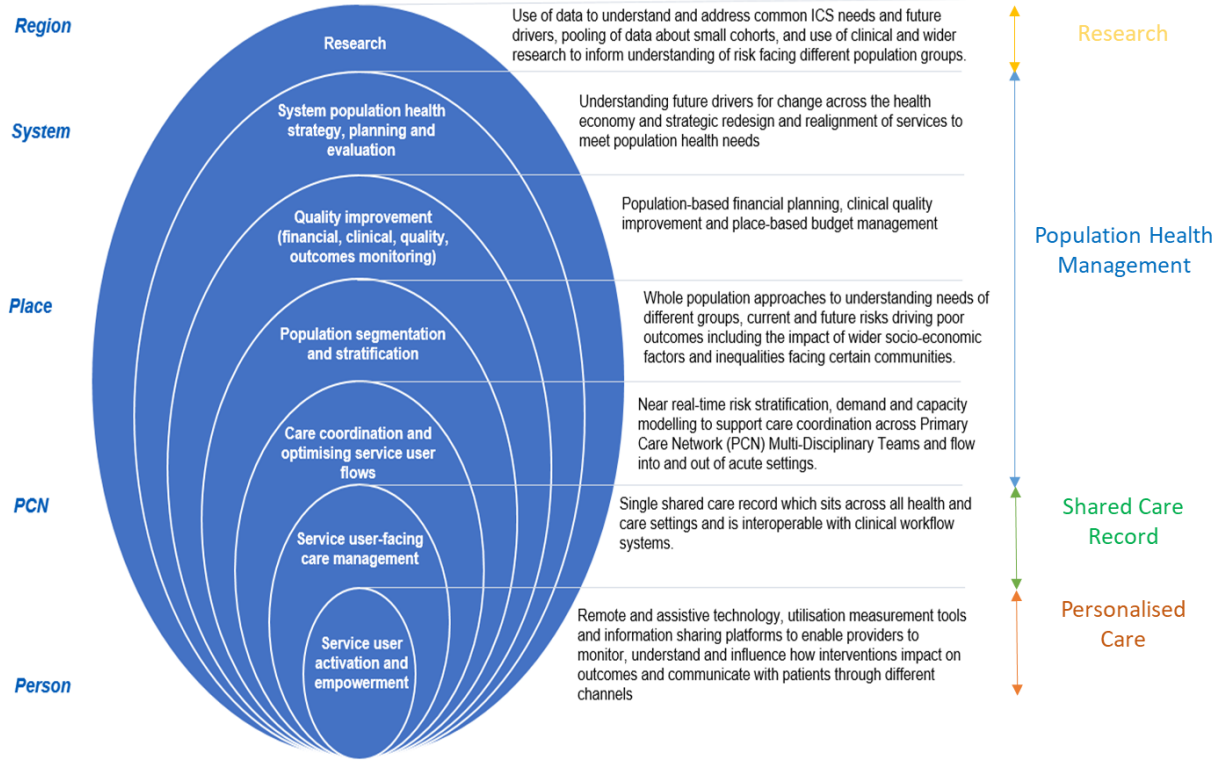
[12] See Appendix Section 5 for more detail on OHID analytics review (p70-71)
[13] FutureNHS Collaboration Platform - FutureNHS Collaboration Platform – self-registration needed
[14] NHS England and NHS Improvement's National Development Delivery Partner for PHM

SWL Context - Interdependencies

Intelligence Function

New national guidance on developing intelligence functions for ICSs[15] sets out the need for improved data; analytics; and the tools used to access and use both the data and analytic insights (e.g. the PHM platform). It sets out the fundamental importance of this function for PHM, as well as for other system responsibilities and activities.[16]

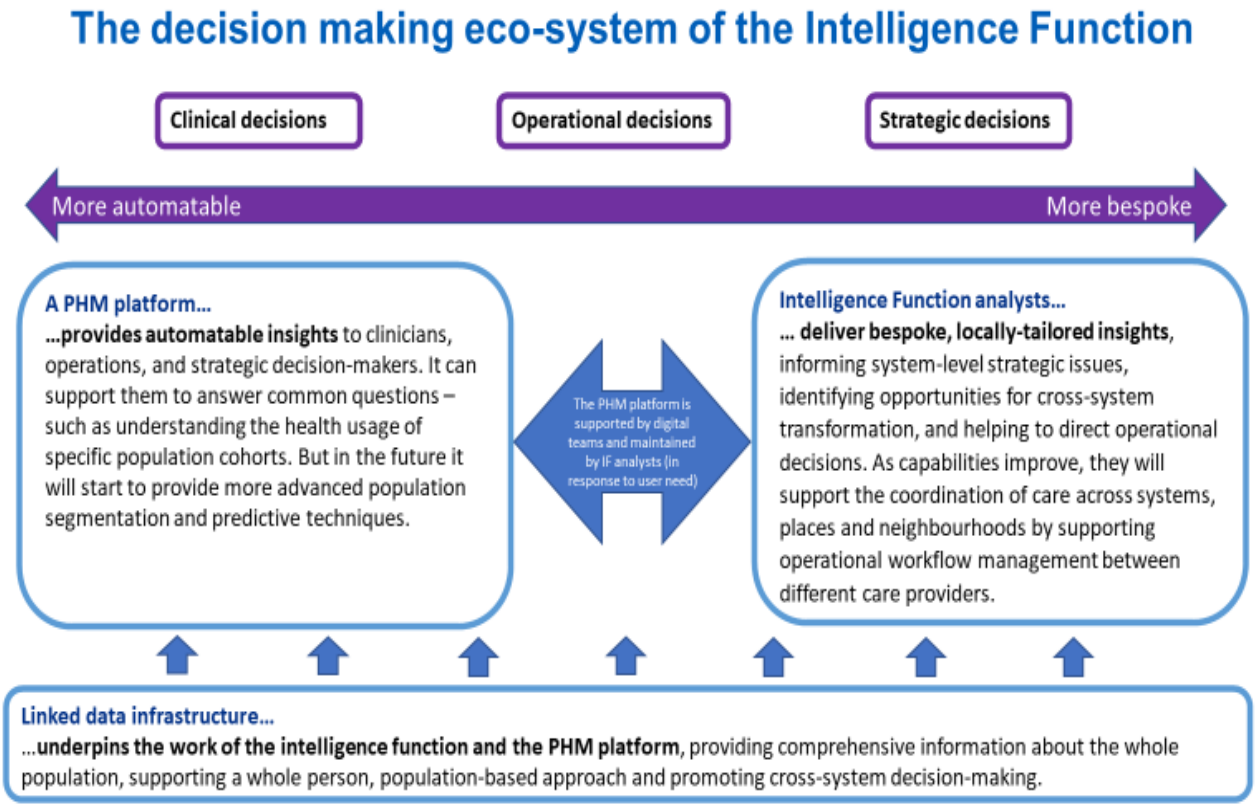
Use of data, analytics and intelligence at different tiers of the system



[15] "Building an ICS Intelligence Function" – draft national guidance for ICSs

[16] "An Intelligence Function is a system-wide, multi-disciplinary collaboration of intelligence professionals, with representation from analytical leaders and key teams across the whole ICS. At its core, it is a way of coordinating a diverse range of analytical skills to support the needs of the system. The purpose of the Intelligence Function is to ensure that ICS decisions are routinely informed by evidence that is tailored to the local context, including a detailed understanding of health inequalities between population groups, and that the system is supported to take a population-based approach to care planning and delivery, including the use of data to shape the personalisation of care.
One key purpose of the Intelligence Function will be to support a PHM approach to care, including by developing a detailed understanding of the local population's health and care needs, such as granular intelligence on inequalities

Key components of a system intelligence function include data, the PHM platform and analysts and it supports a range of decisions, including clinical, operational and strategic decisions:



The recent Goldacre review also references the interdependency of data, analytics and insights leading to action and it is clear that these functions need to be considered as critical components for PHM.[17]

We need to ensure a coordinated approach to managing these elements along with the creation of a Development Plan, and this will be aided by a named executive lead once ICS appointments and portfolio allocations are concluded. According to the guidance, we have an "emerging" intelligence function. Clearly this is a critical function that needs to be operating at a high level for PHM to be effective in SWL.

across different population groups. This will be powered by a person-level, linked data set, which should grow to include information about the wider determinants of health. The Intelligence Function will support place-level leaders to tackle health inequalities in their area by operationally targeting areas where there is greatest need of support, or where there is unwarranted variation in care quality, and by planning new service models in response to unmet need."

[17] See Appendix Section 6 for relevant text from the Goldacre Review: Better, Broader, Safer: Using Health Data for Research and Analysis (p72)

It is worth noting that each Local Authority and many of our NHS providers have been continuing to develop their own intelligence functions and any SWL strategy would need to take this into account and be clear what is being done at place, in providers and at SWL level to ensure synergy and avoid duplication.[18]

1. Data (including Information Governance)[19]

"Raw data does not do great work on its own. This data must be curated, managed, cleaned, reshaped and prepared by people. Then it must be made available in well-designed platforms, which earn public trust through security and transparency, and which facilitate sharing and re-use of prior work."[20]

It would be a timely moment for the SWL ICS to develop a *data strategy* since the London Health Data Strategy is currently being developed. Ensuring good alignment with London and effective support for PHM within our strategy will be key. The first step of a data strategy would be to capture the existing data architecture in SWL and the next step would be to define what is needed for the future. Data will need to be available to serve all the functions set out in the intelligence function diagrams above (e.g. to support a shared care record and research, as well as PHM). It is referenced multiple times in the Fuller primary care stocktake which states very clearly that "integrated neighbourhood teams can only flourish if they have access to good data."[21]

The 2022/23 Planning Guidance sets out the requirement for ICSs to develop plans for system intelligence by June 2022, and specifically plans to put in place the *systems, skills and data safeguards* that will act as the foundation for PHM. It highlights that the safe and effective use of *patient data* is key to this.[22]

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[18] See Appendix Section 9 for a summary of each borough's position (p82-86).
[19] See Appendix Section 2 Further Definitions & London Data Glossary for data definitions (p56-62)
[20] Summary: better, broader, safer - using health data for research and analysis (publishing.service.gov.uk) – the Goldacre Review
[21] See "Data, data, Data" section of Next steps for integrating primary care: Fuller stocktake report.
[22] "Working alongside local authorities and other partners, we will continue to develop our approach to PHM and prevention so that people can play a more proactive role in promoting good health. ICSs will drive the shift to population health, targeting interventions at those groups most at risk, supporting health prevention as well as treatment. ICSs will take a lead role in tackling health inequalities by building on the Core20PLUS5 approach introduced in 2021/22. The safe and effective use of *patient data* is key to this. Systems are asked to develop plans by June 2022 to put in place the *systems, skills and data safeguards* that will act as the foundation for this."

The data *systems* in use in SWL have been provided by North East London Commissioning Support Unit (NEL CSU), some of which has been in-housed, some moved to NEL ICS and some moved to North East England. There are both risks and opportunities in this transition. The in-housed CSU team responsible for business intelligence and analytics have many useful *skills* and have provided the SWL system and the PHM function effectively during COVID. They are currently carrying vacancies and, in common with all other London ICSs, risk exists with this function (see analytics section p.17).

SWL has had a high level of support from the CSU on information governance[23] and *data safeguards*. The environment has been more permissive under the Control of Patient Information[24] (COPI) notice, introduced to allow easier data-sharing in response to the pandemic. Work will be needed to continue to develop this function and ensure it is fit for the future.

2. PHM Platform

The PHM "platform" can best be described as a tool that presents data and insights gleaned by analysts to those who need to understand better the health status and needs of their population. It is clearly highly dependent on the quality, breadth and depth of data that is available as well as the skill of analysts in making sense of the data and presenting it in a meaningful way.

HealtheIntent Pilot

SWL had previously elected to pilot the roll out of a Cerner product, HealtheIntent, with St George's University Hospital. This is a tool which ingests and standardises data, especially from hospital Cerner electronic patient records, stores the data and allows the creation of condition registries and dashboards. It is still a product in development and the roll-out proved much slower than anticipated. It had not been used for PHM within SWL, since this would be dependent on funding to "on-board"

[23] From the Goldacre review: "Information Governance (IG) is often unfairly regarded as an obstructive or bland discipline, but in reality it is a complex multidisciplinary project requiring skills in analytics, IT, ethics and IG. At its best there is a clarity of purpose and an energetic embrace of role and accountability, with IG professionals working with others to leverage maximum benefit from information, enhance patient care and improve services while protecting patients and remaining compliant with the law."

[24] Notice under Regulation 3(4) of the Health Service (Control of Patient Information) Regulations 2002 (COPI).

the data from all other providers in SWL and to develop registries and dashboards with associated human resource, capital and licensing costs.

A business case was being developed by the SWL digital team for this further roll out but was paused to allow a SWL PHM stocktake to take place to establish the priority uses and requirements for a PHM platform, to ensure the platform pilot was properly assessed, and to evaluate the home-grown PHM platform ("Heath Insights") that had been developed in parallel during COVID.

Health Insights

During the COVID pandemic, the need to access holistic data (derived from a Longitudinal Record[25]) about residents was urgent. Working with NEL CSU, the in-housed SWL analytics and business intelligence (BI) team responded to this need by arranging for primary care data to be linked to other health and demographic data and presenting this to clinicians and planners through a dashboard, developed using Microsoft PowerBI. This approach, interface and subsequent series of dashboards became known as "Health Insights". This is the current Platform used for PHM and planning in SWL. It uses de-identified patient data which can be re-identified for appropriate clinicians seeking to make direct interventions with individual patients.

3. Analytics

We have a team of SWL ICS analysts who have been "in-housed" from NEL CSU. In addition, many other system partners in the ICS have their own analysts. Through the National PHM Development Programme and work with OHID[26], we have undertaken a review of analytics capability, capacity and gaps across the SWL system and this has been fed into our SWL PHM stocktake (see subsequent section).

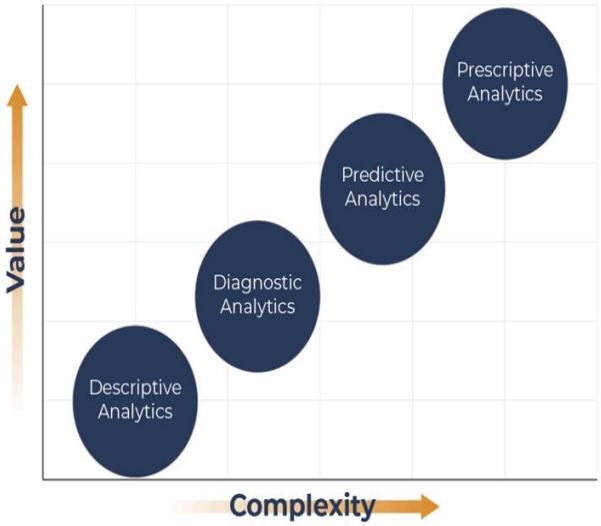
Historically the CSU team has provided predominantly "descriptive analytics," helping the system to track what has happened and use that to assess performance, quality and to guide payments. The ICS will need to expand analytical capability to include explicative, predictive, prescriptive and evaluative analytics. [27]

[25] LHCR – Local Health and Care Record - A shared, normalised, and persisted longitudinal record across primary, acute, mental health, community, and social care, supporting PHM and planning

[26] See Stocktake section (p19-23) and Appendix Section 5 (p70-71) for more detail on OHID analytics review

[27] Building an ICS Intelligence Function – draft national guidance for ICSs

Analytical Capability[28]



- **Descriptive Analytics** tells you what happened in the past
- **Diagnostic Analytics** helps you understand why something happened in the past
- **Predictive Analytics** predicts what is most likely to happen in the future.
- **Prescriptive Analytics** recommends actions you can take to affect those outcomes.

See Appendix Section 6 for further interdependencies, including Core20PLUS5 (p72-79)

[28] Source: Surrey Heartlands Health and Care Partnership

PHM Stocktake

Process and Inputs

In February 2022 we commenced a PHM Stocktake, supported by Optum, across all the sectors of our ICS – Primary Care Networks (PCNs), Local Authority and Borough Partnerships, NHS providers and provider collaboratives, SWL Clinical Commissioning Group (CCG) and ICS functions, St George's University of London and NEL CSU. This aimed to understand existing PHM practice, analytics/change management resource and data/digital infrastructure to form the basis for this SWL PHM Roadmap to advance and further develop our PHM capability. As part of the process, learning from the PHM pilots, the advanced work on PHM in Croydon and the SWL Quality Improvement audits (commissioned by the SWL ICS quality directorate) was considered[29].

The stocktake consisted of

Online survey – wide views on PHM from across the ICS – over 50% response rate

- 170 emails with link to online survey sent
- Current involvement in PHM
- Skills available and skills needed
- Priority use cases
- Ease of use of a PHM Platform

Group interviews – Place based and specialist groups

- 40 people interviewed in 12 one-hour interviews
- Open questions
- Key themes around PHM
- Tease out themes and priorities
- Capture thing that might not get raised in workshops
- Add colour to online responses

System workshops – acknowledge the baseline and plan next steps

- Two Workshops with 25 people at each
- Review of baseline data from survey and interviews
- Add to and contextualise the baseline key themes
- Make the links between baseline, agree priorities, actions and next steps

- Consolidate information into the Roadmap

Final Action Learning Set

- Bringing together all the learning from the Sutton Place and five PCN Pilots as case studies

At the same time SWL ICS analytics teams were invited to participate in the OHID Analytics Skills Mapping Exercise and we supported this work to develop a good understanding of the ICS's current strengths, weaknesses, capacity and capability in analytical skills and what might be needed to enhance our System Intelligence Functions, in order to build on, share and strengthen these together. We are currently waiting for the full analysis to be completed by OHID.[30]

Outputs

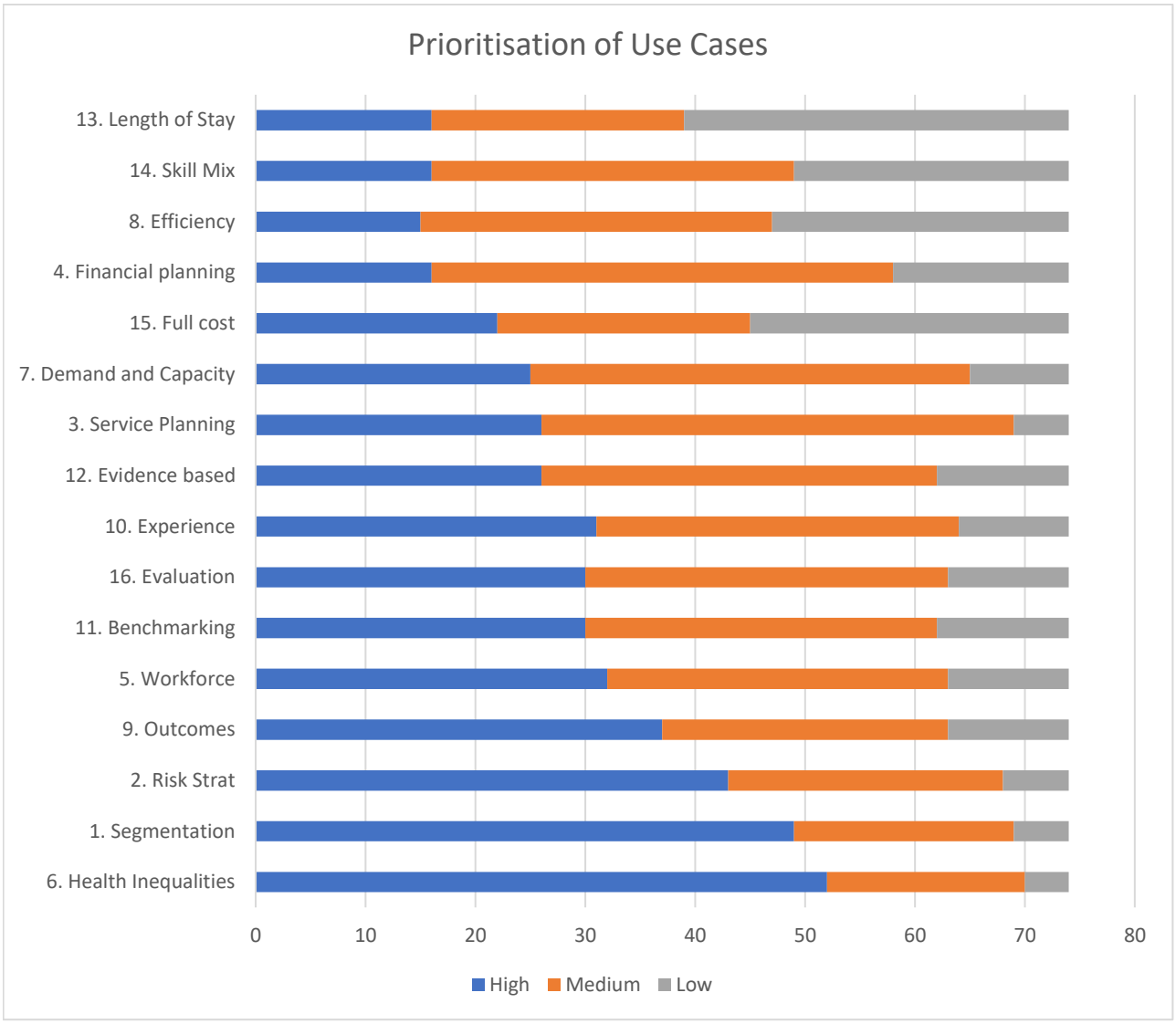
The key themes from the analysis of responses to the online survey identified that the top three uses for PHM in our system were to

1. Plan services and redesign pathways
2. Decide which patients to prioritise
3. Carry out research into local health and care inequalities.

When prioritising/ranking top uses for PHM ("use cases") from a prescribed list, responses indicated

- Health inequalities, population segmentation, risk stratification and outcome-linkage as high priorities
- Service planning, financial planning and demand & capacity as medium priorities
- Length of stay in hospital, full cost determination and efficiency as low priorities.

[29] See Appendix Section 6 for more information on this work from the Quality team (p73-78)
[30] See Appendix Section 5 for more details on the OHID analytics review (p70-71)



In terms of the Platform and the data to support PHM, responses indicated the importance of access to a good range of linked data sets and data sources as well as the data being clear and easily adapted or configured, without support. The types of data to allow as complete a picture as possible of the population cohorts being considered, were ranked and prioritised[31] as part of the Analytics Action Learning Sets.

In discussions it was clear that the purpose of population segmentation was often to deliver anticipatory or more holistic care to individuals so the ability to risk stratify and re-identify individual patients is key.

Exploring these priorities further using the logic model[32] approach helped create a better understanding of the outputs and short, medium and long term outcomes that could be achieved and would demonstrate that we are making a difference across our system.

This showed that

- data, training on the data and how to use that data in different ways, plus
- co-production in order to reflect patients' real experiences, were important to help better inform decision making, cohort identification and service/pathway changes.

It was felt that short and medium term outcomes should involve

- improved patient experience and supporting the cultural change needed
- helping to build relationships across and between all stakeholders - health, social care, community, voluntary sector and our local communities.

Longer term outcomes should illustrate

- service change and
- a shift from clinical disease-specific care to a focus on prevention being the norm
- measurable objective and subjective outcomes and improvements, focused on health and wellbeing measures including the wider determinants of health, across all age groups in our communities.

The foundation stones for SWL can be summarised as follows:

Data and Analytics Platform

Patient, Public, Team Engagement and Co-Creation

System Relationships and Leadership

Outcomes and value based transformation

Resource mapping of local PHM Skills

The online survey responses enabled some PHM Skills Mapping to take place across our system to help us understand where skills are currently available, any gaps and where training may need to be focused, however the full picture cannot be seen as some responses to the survey were anonymous.

[31] Please see Appendix Section 7 for Data Prioritisation Matrix (p81)

[32] Link to logic model - https://easyretro.io/publicboard/UFNeUShm0PbQkuTLf8XlgYlJId53/b0de2b2a-6164-4dc7-a52d-2c598746e88c

- PCNs and Place
  While clinical leadership and project/programme management skills are indicated as being available when looking across SWL as a whole, when looking solely at individual Places it can be seen that neither skill set is fully available.

- Mental Health Trusts, Acute Trusts and Community Trusts
  While clinical leadership, administration, finance, project/programme management, operational/managerial/service co-ordination and quality improvement skills are indicated as being in existence, the picture is inconsistent across providers. Although the majority of this workforce currently focused on non-PHM work, there may be great potential to incorporate this resource if priorities are aligned between organisations.

PHM Programme Development Plan

These are those elements which fall within the scope of the SWL PHM Programme team.

1. Building a SWL PHM Team

The central PHM team currently comprises three individuals:

- Dr Andrew Murray, the clinical lead and SRO for the PHM development programme (2 days per week until end of June 2022)
- Sam Green, seconded from Sutton Place to be Head of the PHM Programme (full time)
- Mary Coakley, seconded from Merton and Wandsworth to be Project Support Officer (full time).

The principle that the team have adopted is to focus on providing direction and momentum for PHM development, supporting work already underway in boroughs and PCNs and encouraging the adoption of a PHM approach in SWL programmes and Clinical Networks. Key roles have been co-ordination, sharing best practice, developing critical enablers and making connections. This has been augmented by consultancy support from Optum (mainly funded through the National Development Programme but with a small additional investment from the SWL ICS to support the stocktake).

It is proposed that the future PHM team continues to take a devolved approach, ensuring that the system maximizes existing resource rather than seeking significant new resource. This means a lean central team with a focus on supporting work undertaken by system partners. A key principle is that delivering PHM involves a new way of working for existing people, not necessarily new people.

The initial proposal for the make-up of the SWL PHM team for the next 12 months is:

- SWL ICS Clinical Leadership - potentially Senior Clinical Advisor plus Clinical Champion (a developmental role) – 2 days/week in total
- SWL ICS Head of PHM Programme – Full time
- SWL ICS Project Support Officer – Full time

This would generate a small saving on the current resource allocated to the SWL ICS PHM team, as the clinical champion cost would be lower than that for the current clinical SRO.[33]

It would be sensible to demonstrate the ongoing commitment of the ICS to PHM by considering making the non-clinical roles permanent.

In subsequent sections the PHM team resource has been allocated to support different elements of the Development Plan and expressed as number of days/week (5 days per week representing the total capacity of the full team[34])

2. Learning by Doing (including Pilots)

A critical part of the successful development of PHM in SWL so far has been creating the six Pilots across five PCN's and one Place (Sutton) as part of the PHM National Development Programme. They have targeted resource and development at teams who have the enthusiasm and desire to deliver PHM effectively. They have helped us learn as a system what works and what doesn't and what support is required to make PHM successful. In addition with very limited resource (minimal PHM workforce, constrained analytics workforce, limited infrastructure and small OD resource) to support PHM they have allowed that resource to be used effectively and with impact. These Pilots have also raised awareness of PHM in the system and shown what is possible, helping us develop the right cultures, behaviours and appetite for PHM.

In addition, the COVID vaccination programme used PHM methodology and analytics in the work they did and PHM methodology has been adopted by the SWL Outpatients Transformation Programme.

We propose continuing to support all these programmes of work.

The Development Plan proposal is that we continue to incrementally build PHM functionality through further pilots, working where there is energy, enthusiasm and need. SWL has already committed to further Place and PCN pilot work as part of Modules C & D of the ICS Population Health Place Development Programme, funded

[33] See Appendix Section 11 for SWL PHM budget (p89-90)

[34] i.e. 1 day/week of the PHM team would be 1 day from the Head of PHM plus 1 day from the Support Officer plus a few hours of senior clinical input

by NHS England and Improvement and NHSX, being delivered in Croydon, Merton, Kingston and Richmond during 2022. This will be supported by the SWL PHM team.

We would like to ask for expressions of interest and select two SWL Elective Clinical Networks and one SWL Transformation Programme to act as PHM "Pilots" (i.e. they would receive intensive support from the SWL PHM and analytics teams, to test what is possible and establish a model for other Programmes to follow). We would also like to discuss with the two large provider collaboratives and identify one further SWL-scale pilot programme (such as work with patients attending ED).

Finally, it will be the role of the new ICS Partnership Board to agree one at scale programme for the whole system and the SWL PHM team can support that process.

Resource requirements

Dedicated central SWL ICS analytics time is required to support these programmes. This is currently being delivered by the existing SWL ICS analytics team. PHM may require a greater share of the analytics team capacity (see recommendations on analytics team in interdependencies section).

The SWL PHM team will devote 1½ days/week to this element of the plan.

3. Culture, Behaviour and Skills

Changing the paradigm to value-based healthcare and stewardship

Perhaps the biggest challenge is not to get more or better data but rather to make use of the data that we have effectively. This will not only involve giving better access to data but also a change in the way all partners in our ICS think and behave from front-line clinicians to the ICS Board. This is the cultural and behavioural challenge and will involve investment in training and development across the system with all partners.

We will need to move to a way of thinking and behaving where each system partner considers value-based healthcare and has a focus on

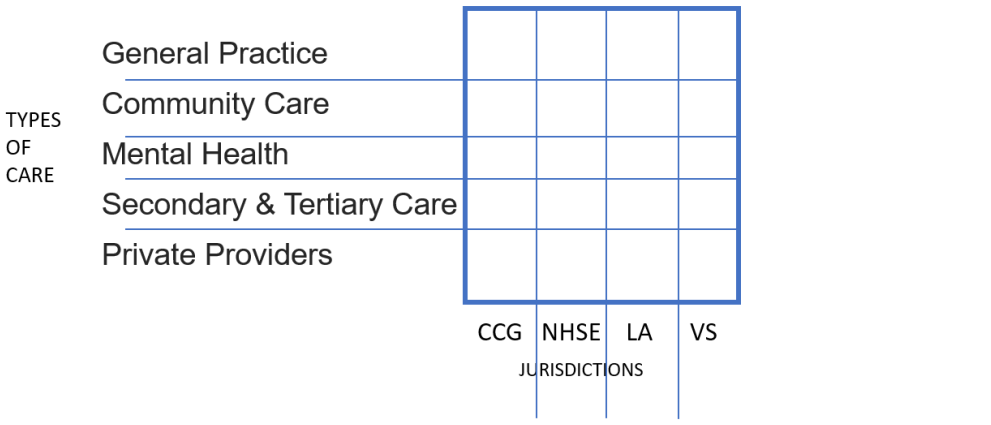
- defining population sub-groups with a common need and allocating resources optimally
- designing the system for each population sub-group

- ensuring each individual makes decisions to optimise personal value[35]
- delivering value for the population and all the individuals in need equitably through networks
- creating the culture of stewardship, with a governance process that promotes collective responsibility
- collective accountability for the outcomes and experience of care for individual residents rather than the delivery of individual care activities or episodes of care

So for example the SWL gynaecology clinical network would need to increase its scope from oversight of the system gynaecology elective waiting list backlog and standardising end-to-end gynaecology pathways, to taking responsibility for the entire population cohort with gynaecological problems (including those who do not present to health services), evaluating the value that procedures add, ensuring that personalisation is built in to support decision-making and taking responsibility for the total system gynaecology budget.

Focussing on people not conditions

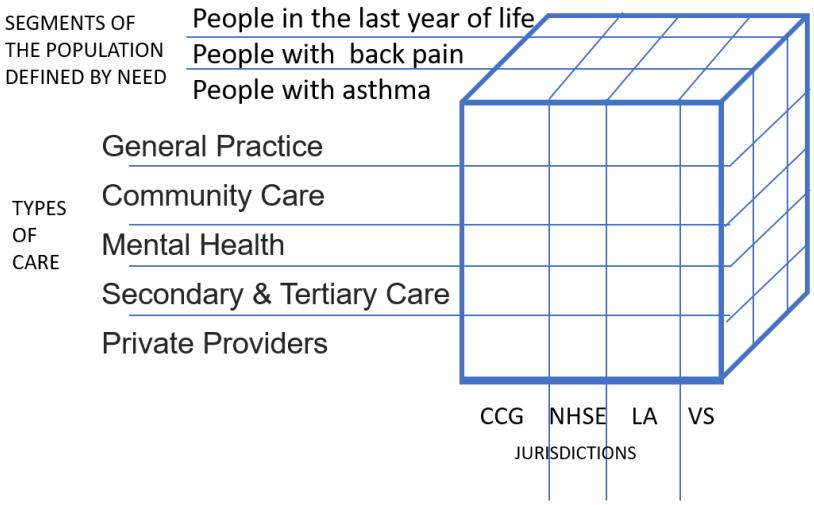
This would allow us to change the system paradigm from "2D" to "3D" healthcare.[36]



[35] See value definition (p9)

[36] Prof Sir J.A. Muir Gray

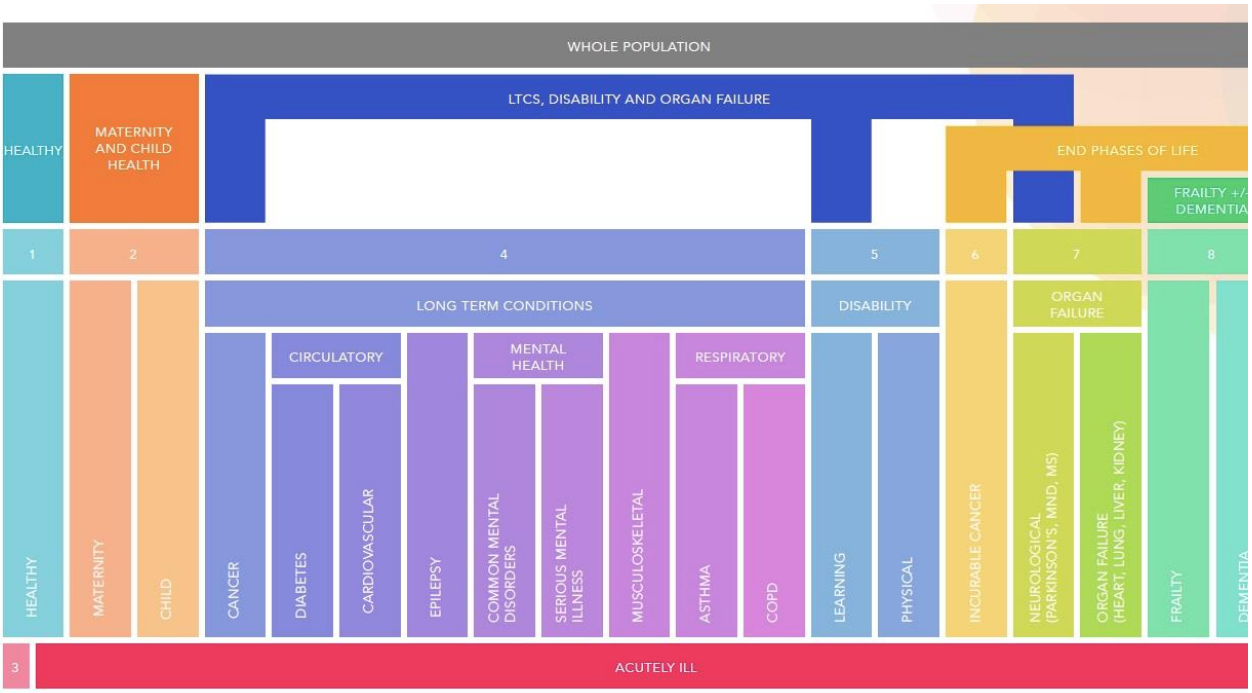
TO 3D HEALTHCARE



Dealing with the whole population segment, not just those presenting to services, and the value added to individuals

The focus on populations provides a third dimension to the way we see, lead and deliver healthcare, moving from the traditional two dimensional model (looking at levels of care and bureaucracies) to a three dimensional model; focusing on segments of the population, allocating resources optimally between them and maximising value within each sub-segment. This is sometimes referred to as Population Healthcare (a slightly higher level description than PHM, since it refers to how the whole health system acts).

In addition, moving to Population Healthcare requires a novel way of describing population segments (a new "taxonomy") beyond using individual conditions and NHSE/I has now adopted the Bridges to Health taxonomy, which (unlike the ICD) includes multi-morbidity:



Focusing on inequity

Population healthcare, should "deliver value…for all individuals in need equitably." This requires that attention is paid specifically to health inequity. All those involved in PHM will need some training and support with identifying health inequity in the population with whom they are intervening. In addition it is proposed that all PHM programmes and projects will need to complete an Inequality Impact Assessment and therefore training and support will be required specifically for this.[37]

Working in partnership with residents

Furthermore, the way we involve and engage with residents and patients' needs to shift gear. If PHM is about creating interventions to meet the needs of our population, then we need to fully understand their personal goals to ensure that those interventions add value. We will need to normalise the "co-creation" (or "co-production") of solutions with those whom they are meant to help. In order to involve those with greatest need, this may require novel approaches.

Extensive engagement and co-creation has already been adopted by many of the SWL PHM pilots and has delivered excellent results. In the national Fuller review of

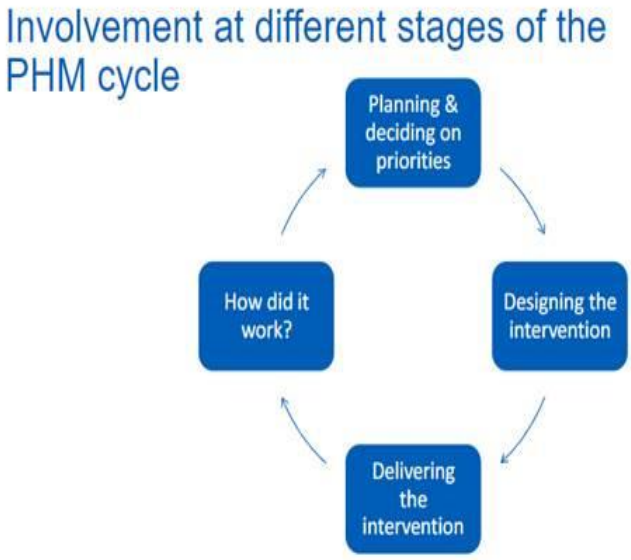
[37] Will be supported by the SWL ICS Quality team

Primary Care[38] it is noted "that the PCNs that were most effective in improving population health and tackling health inequalities, were those that worked in partnership with their people and communities and local authority colleagues. This partnership focuses on genuine co-production and personalisation of care, bringing local people into the workforce so that it reflects the diversity of local communities, and proactively reaching out to marginalised groups breaking down barriers to accessing healthcare."

In addition, it explicitly states that our primary care workforce "needs to be given the time and resources to meaningfully undertake this work. Outreach should not be considered a bolt-on to the day job – it's central to people's roles and should be reflected in protected time and job plans, for both current and upcoming roles."

The highly-regarded SWL communication and engagement team (with leads for each borough) continue to act as a resource for advice on developing engagement approaches in partnership with the community and voluntary sector and are creating an engagement toolkit which we will ensure is available to all those undertaking PHM. We will work with the team to feedback learning from PHM pilots and to adapt and develop the toolkit further.

How we can involve people and communities in PHM:



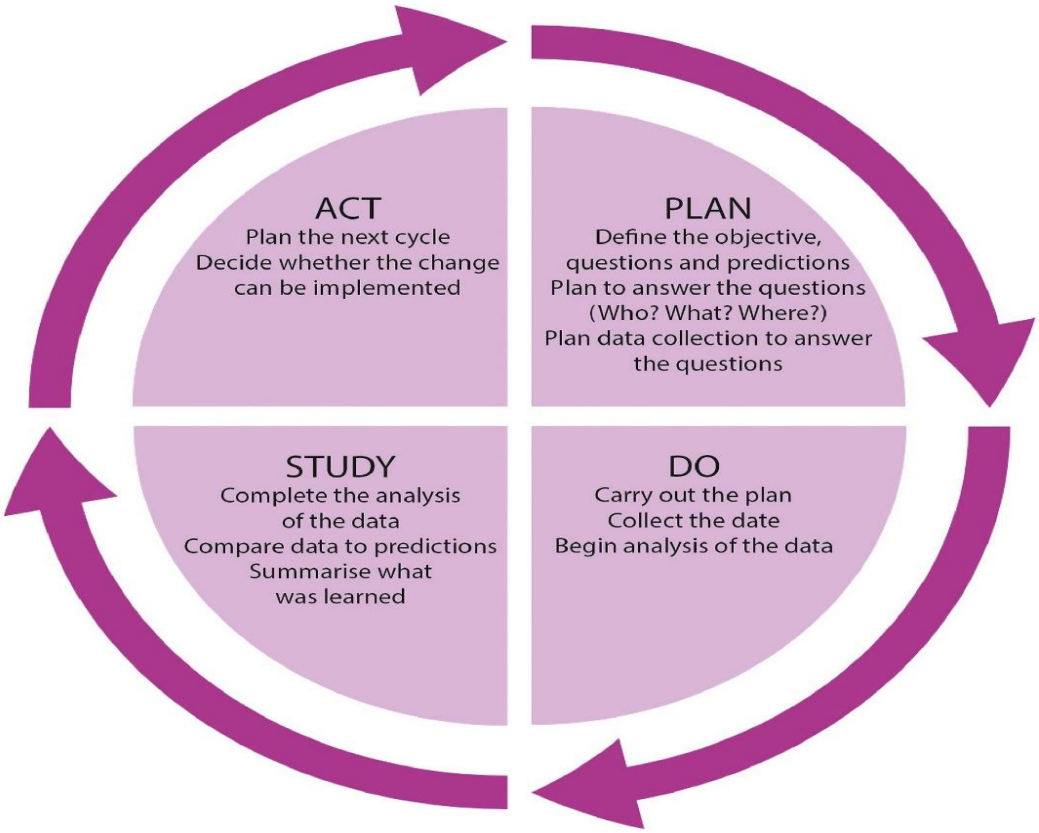
[38] Next steps for integrating primary care: Fuller stocktake report. https://www.england.nhs.uk/wp-content/uploads/2022/05/next-steps-for-integrating-primary-care-fuller-stocktake-report.pdf

Using data intelligently

We also need to change the way that all system partners use Analysts (or as has been suggested, “Intelligence Officers”). Increasingly analysts and analytical thinking need to be embedded into non-clinical and clinical teams and Networks, to encourage the effective use of information and to ensure the right questions are asked. This will allow us to better understand the needs of population segments, to ensure that actions are appropriately targeted and that solutions are evidence-based and credible.

Making change happen

The data-driven quality improvement cycles of PHM do not only rely on analytical and engagement skills but also need expertise in all the elements of programme and change management that allow continuous improvement. Teams engaged in PHM may need training and support to develop key skills to support the plan, do , study, act (PDSA) approach:



Training and system development will need to address all these elements of culture, behaviour and skills to ensure success.

Resource requirements[39]

It is critical to note that all our teams need to be given the time to engage with training and development and then to reflect and work very differently. Without this level of commitment and planning as a system, any offers of support and training will be of limited value.

Resource will be needed to support development and training in value-based healthcare, PHM, quality improvement and programme skills. The SWL PHM Programme could source the training material and support the delivery of training but each local system partner will need to be resourced and enabled to participate in training.

Training should be targeted at system and organisational leaders initially (including PCN clinical directors) but ultimately this will need to be directed more broadly at relevant health and care providers. The development programme will need to as a minimum cover:

- Place (including Place Committee, Local Authorities, community providers and PCNs)
- SWL Clinical Networks and Transformation Programmes and Clinical Senate
- SWL ICS Board and Partnership Board.

Once agreed conceptually by the ICS Partnership Board, this element of the Development Plan can be costed by seeking expressions of interest from organisational development partners.

The work could potentially involve three components:

1. Large group conferences/ workshops
2. Training sessions delivered within existing fora/meetings
3. Online resources, including webinars.

An indicative budget of £100k has been allocated to this for 2022/23 in the PHM budget and this could include the development of webinars and other online tools to support self-access to training.

The SWL PHM team will devote 1 day/week to this element of the plan.

[39] See Appendix 11 for PHM budget (p89-90)

4. Sharing and Supporting Best Practice

- Creating a SWL Community of Practice for PHM

We have already brought together a diverse range of PHM experts in the SWL PHM Programme Board[40]. Work is in progress to identify the right resident/ community/voluntary sector voices and they will be included in the Board in future as well as in other groups. We will proceed to set up a formal SWL PHM Network, with webinars, fora and focus groups to allow the regular meeting of PHM practitioners to develop relationships, provide mutual support and sharing of ideas.

- PHM leaders, champions and experts

Each borough now has a named clinical PHM lead. They will be supported by the SWL PHM team and a SWL PHM Clinical Leads forum will be established and each borough should also consider identifying PHM "champions". Moving forward every PCN should have a named PHM lead or champion, but we will start with encouraging those PCNs involved in the new pilots (as part of the Place Development Programme) to identify a lead and will use the pilots as an opportunity to determine appropriate resourcing for this role. We will also have further conversations with the five original PCN pilots to review ongoing resource requirements. The SWL PHM team should also identify and list all PHM "experts" both clinical and non-clinical as a resource that can be called on as needed. The SWL PHM team should ensure that all PHM leads, champions and experts are provided with the right ongoing training and support.

- Creating a PHM library

This will involve creating a virtual place where PHM practitioners can access examples of international, national and regional best practice; share local examples of good practice; access support from other PHM practitioners in SWL.

Resource requirements[41]

The borough clinical leads are already budgeted for in the SWL clinical leadership budget. We have already secured one PHM clinical fellow to support Sutton place with PHM clinical leadership in addition to the ICS-funded clinical lead. This is not shown in the PHM budget as it sits within the SWL clinical leadership budget.

We will apply for more fellowships as they become available.

PCN pilots need to be used to establish how much resource/backfill is required to support PCNs to develop a comprehensive approach to PHM. This will depend on

what is specified in the national PCN Direct Enhance Service (DES) on a year-by-year basis, at present the specification is limited and would not cover all that we expect PCN PHM pilots to deliver.[42]

There will be an initial cost to support training and development for PHM leads and champions.

The PHM library could be hosted on the SWL ICS website or intranet so should not require significant extra cost beyond set-up and maintenance costs. This can be covered by the SWL PHM team.

The SWL PHM team will devote 1 day/week to supporting this element of the plan

5. PHM Platform

- Developing Health Insights

A Health Insights Project Group has been established to ensure continued development of this analytics portal: to improve the quality and quantity of information available; to tailor it to PHM and other needs (the "use cases"); to improve access for relevant system partners; to monitor and resolve information governance (IG) issues; and to ensure training and support for those accessing the portal in order to support self-service functionality. The Development Plan for this has been informed by the SWL PHM Stocktake and is now being supported by the Head of the PHM programme (since it is such a critical enabler for PHM). The Group involves digital, analytics/BI and IG team leaders.

- Obtaining a Platform fit for the future

SWL will need to agree an approach to acquiring an analytics "tool" (or "Platform") fit for the future. We recommend co-ordination on this with other London ICSs aiming to agree a preferred tool to make it easier to share dashboards and prevent duplication of effort (this is unlikely for now to include North Central London, who are focused on developing HealtheIntent). In order to push this forward, it is proposed that SWL start the process now of agreeing the timing and sequencing for

[40] See Appendix Section 1 for Programme Board Members (p51-52)
[41] See Appendix Section 11 for PHM budget (p89-90)

[42] See Appendix Section 10 for PCN DES specification (p87-88)

an options appraisal for the future PHM Platform (which would include continuing with Health Insights as an option).

The output from the stocktake would be used to establish the PHM priority criteria for the appraisal. However, it is important to note that the Health Insights platform is currently being used to support system Quality and Planning functions and so any future solution would need to take into account system uses that are not explicitly PHM priorities. It is perhaps better to consider that the future Platform to support PHM would likely continue to be a broader System Intelligence Platform so it would be wise to

1. Establish ICS data requirements as part of the development of a SWL data strategy (involving a) establishing the current data landscape and then b) defining what is needed for the future) and
2. Establish system uses for the Intelligence Function, prior to undertaking the Platform options appraisal.

This suggested approach can be shared with other ICSs and if they choose to combine to do this jointly then that would be welcome.

Resource requirements

Funding for roll out and maintenance of a new PHM platform (assumed at that stage to be HealtheIntent) is included in the SWL Digital 2022/23 budget submission.[43] It is not proposed to spend this money in 2022/23. There will potentially be some ongoing development and support cost for the existing Health Insights platform but this is already included in the workplan for the SWL ICS analytics team. Recurrent funding has been allocated to this in the PHM budget.

If a full options appraisal is needed, then this will require funding and will depend on whether this is done as an ICS or jointly with other ICSs. There are a number of unknown variables at present, including the possibility that a national product may be made available. This work will largely be undertaken by the SWL digital team but provision is made for consultancy support in the PHM budget.

The SWL PHM team will devote ½ day/week to supporting this element of the plan

[43] See Appendix Section 11 for PHM budget (p89-90)

6. PHM-focussed Analytics

"The NHS analyst workforce is a crucial part of the health service, with vast potential waiting to be tapped in numerous energetic pockets of excellence across the country."[44]

Making better use of the data available has already been noted as a crucial need for both clinical and non-clinical teams. This can be provided by both dedicated analyst support but also by upskilling and training PHM practitioners. The PHM stocktake demonstrated that PHM analytics skills are not evenly matched across our system and this needs to change to match the future ambition for PHM. Analysts from across the ICS have been supported as part of the National PHM Development Programme with Action Learning Sets on linked data models, evaluation techniques and tools.

A recommendation from the Action Learning Sets and Stocktake was that an Analytical Skills (Workforce) Development Plan and linked Training Plan should be developed. This would ensure that capacity and capability in analytics is increased and aligned with need. We are waiting for the outputs from the OHID work on analytics[45] before this can be taken forward and it is a broader piece of work than for the analytics relating to PHM. We therefore have listed this recommendation in the interdependencies section on ICS analytics.

Most national exemplars have embedded analysts in places and in PCNs and we propose adopting this approach in SWL (numbers below are in keeping with these exemplars).[46] Learning from our pilots shows the benefit of embedded analysts being fully connected into the central SWL analytics team and we believe there should continue to be a significant central team with analysts working as part of that team whether they are located in place or provider organisations (similar to the matrix approach taken by the SWL ICS Communication and Engagement Team).

All PHM programmes will need to work with the analysts supporting them to:

- understand the problems affecting their populations
- determine which interventions are likely to be effective
- develop appropriate measures to determine the impact of those interventions.

The learning from this will help inform and broaden the range of measures that we use across the SWL system to understand the impacts of all service changes and improvements and more broadly of service performance and quality.

Resource requirements

It is recommended that each Place is allocated a PHM-focussed analyst (who would be part of the SWL ICS analytics team but located in place) to support them in understanding their data and helping drive cycles of PHM. This would total 6 analysts. In addition, in keeping with other national PHM exemplars, it is recommended that an analyst is allocated across every 3 PCNs that embrace PHM (again part of a SWL team). This would total approximately 13 analysts if fully recruited.

For this year, resource has already been allocated from the central SWL analytics team to support the existing PCN pilots and Sutton place and to support the PCNs and Places involved in the Place Development Programme.

The recurrent funding requirement for future years should reflect the aspiration to have dedicated place and PCN analytical resource but the analytical support for PCNs would likely be phased and rolled out according to which PCNs embrace PHM and would also to some extent depend on what is specified in future iterations of the PCN DES. In addition, the availability of analysts may be the key limitation and (as referenced in the interdependencies section) further work on developing the analytics workforce and a pipeline for analysts is recommended both for SWL and London as a whole.

Resourcing for training and support of non-analysts in analytical techniques is recommended and is included in the PHM budget[47].

The SWL PHM team will devote ½ day/week to supporting this element of the plan

[44] Goldacre review: Better, Broader, Safer: Using Health Data for Research and Analysis
[45] See Appendix Section 5 (p70-71) for more detail
[46] This is in keeping with the Fuller stocktake recommendation of "making available 'back-office' and transformation functions for PCNs, including HR, quality improvement, organisational development, data and analytics and finance."
[47] See Appendix Section 11 (p89-90)

7. Finance

There has been support for the PHM development work from SWL finance experts all along, with some dedicated work on financial incentives as part of the PHM Development Programme.

Further work will be required involving finance experts in developing budgets for any PHM pilots or programmes. A part of this is to ensure all elements of programme delivery are budgeted but more significant is the work that will be required to:

- develop population budgeting, namely budgets for each relevant segment of the population, such as people with respiratory disease or people with musculoskeletal problems
- creation of financial incentives for all system partners to ensure that effective interventions are sustainable

8. SWL PHM Goals

A key area of development for SWL will be to establish clear goals for the development of PHM capability and capacity and for improving health outcomes for each sector of our system. This will be the responsibility of those working in those places and roles.

This should include:

- PCNs
- Places
- SWL system (system functions, networks and transformation programmes, provider collaboratives) – overall system goals to be set by the SWL ICS Partnership Board

SWL Linked Development Needs

These are those elements which have a critical interdependency with the PHM Programme but fall outside the scope of the PHM team. They can be critical enablers and present exciting opportunities but also constitute some of the biggest risks for the successful delivery of PHM in SWL. We recommend that, as the ICS portfolios are developed, greater clarity is needed on the senior executive responsibility for each of these areas of development.

1. Setting SWL system PHM priorities

Each Place already has its own priorities as set out in Local Health and Care Plans. The PHM Programme is designed to support delivery of existing plans and to support each Place to increase their ambition by providing the tools to better understand unmet need and target interventions effectively. The SWL ICS also needs to establish its own shared priorities across the system, where greater scale adds value. This will be done through the Integrated Care Partnership Board.

2. System Intelligence Function

SWL ICS needs to "develop shared cross-system intelligence and analytical functions that use information to improve decision-making at every level, including:

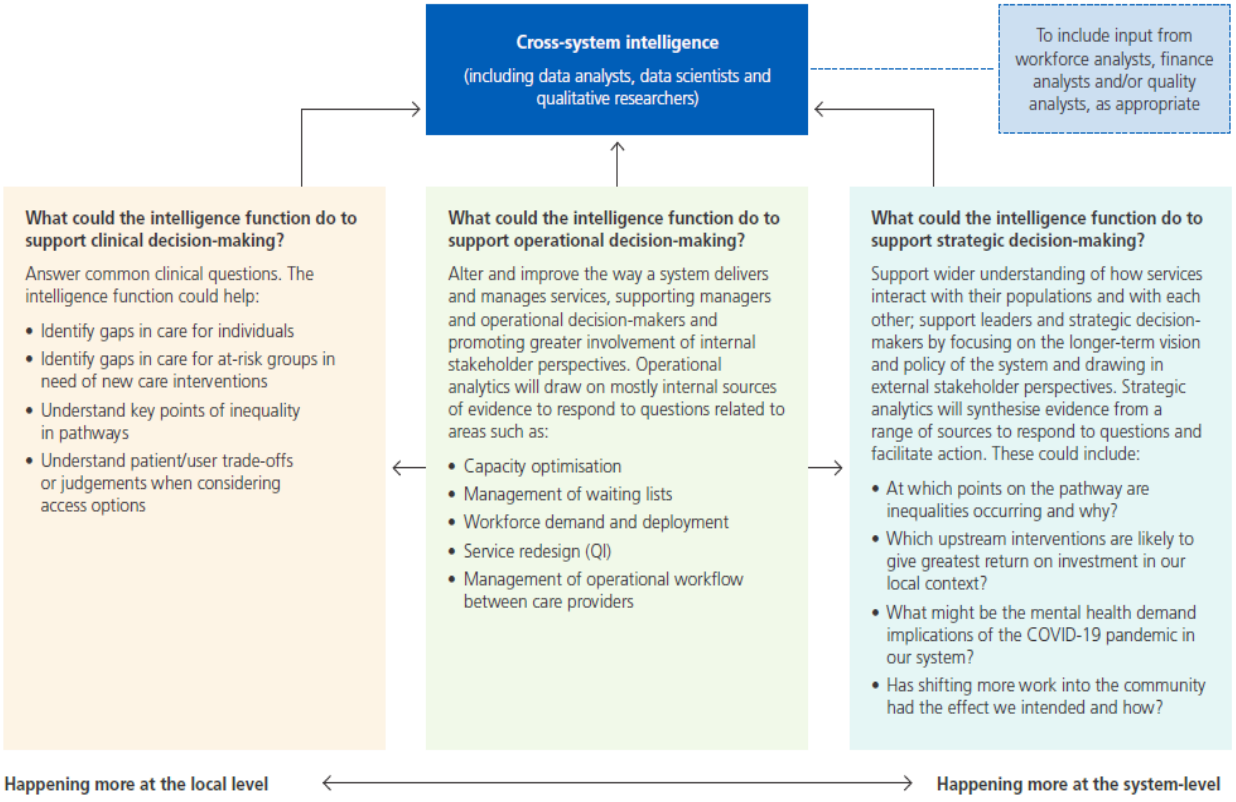
- actionable insight for frontline teams
- near-real time actionable intelligence and robust data (financial, performance, quality, outcomes)
- system-wide workforce, finance, quality and performance planning; and
- the capacity and skills needed for PHM."[48]

As set out in the national draft intelligence function guidance, the aim is that the "Intelligence Function" will draw on analysts and other specialists from all constituent parts of the ICS, including provider organisations and local authorities.[49]

[48] Integrating care: Next steps to building strong and effective integrated care systems across England, first published in November 2020

[49] "While it may have its initial basis within core teams in the Integrated Care Board (ICB), the Intelligence Function will be collaborative and multi-organisational, comprising analysts and other insight specialists from all constituent parts of

It would need to support clinical, operational and strategic decision-making:



In the previous section of the document we have described the capacity and skills required for PHM. The following sections set out some of the actions needed to develop the cross-system intelligence and analytical functions to serve the other purposes listed above.

Data (including Information Governance (IG))

The current data landscape suffers from having developed to serve payment regimes (payment by results) and waiting times tracking – rather than being focused on understanding the needs of the population and the impact of care interventions on

the ICS, including NHS provider organisations, Local Authority care services, public health teams and voluntary sector partners, and serving the strategic goals of the Integrated Care Partnership (ICP). By benefiting from this diverse expertise and by building on existing resources, its work will be founded on a detailed and comprehensive understanding of the local population, enabling the system to hone its allocation of resources, including through an emphasis on preventative care for groups who are most at risk of ill-health. These shared assets of data and insight mean that the Intelligence Function can act as a trusted integrator of the different partners of the ICS."

outcomes and equity. This means that clinicians and planners are presently limited in their ability to plan and deliver the level of consistent, equitable, pro-active integrated care required.

Proactive, integrated and equitable care requires a rounded picture of the current health and wellbeing of the population, and the ability to explore disparities in care for different groups. At present, these views are difficult to achieve because, while there has been good progress in standardising and accessing General Practice (GP) records at scale, progress has been slow in integrating these with secondary care, community, and social care information. The SWL Health and Care record has focused on "the data we have" and has integrated already-structured payment databases with GP records – but this limits the functionality required by clinicians and researchers to improve journeys of care.

We have yet to reach maximum utilisation of our data assets in SWL– many use cases are deliverable based on the existing assets in Primary Care coupled with Secondary Use Services (SUS) data. This is the approach taken by the CSU team supporting SWL and it provides a starting point to build on. For this reason, the SWL Data Strategy would need to start from the data we have and build towards the full future ecosystem in steps. This process can be summarised as:

- Better use of existing and accessible data
- Better access to data
- Better data

Much of the work of the PHM team on data has focused on ensuring data is accessible and encouraging better use of existing data. To meet future requirements, SWL ICS will need to support further work to improve access to data and to ensure data of sufficient quality, breadth and depth (including data curation, management, cleaning, reshaping and preparation). Likewise the IG capability will need developing further and the issue of multiple data controllers should be addressed. In conversation with Local Authority Public Health and analytics leads it is clear that there may be benefit in undertaking some joined up work once across SWL to create clear and streamlined IG processes that would support boroughs in accessing the data that they need. There are IG risks in expanding access to data and this will need

to be carefully overseen by the IG team and consideration given to setting up an Independent Information Access Group.[50]

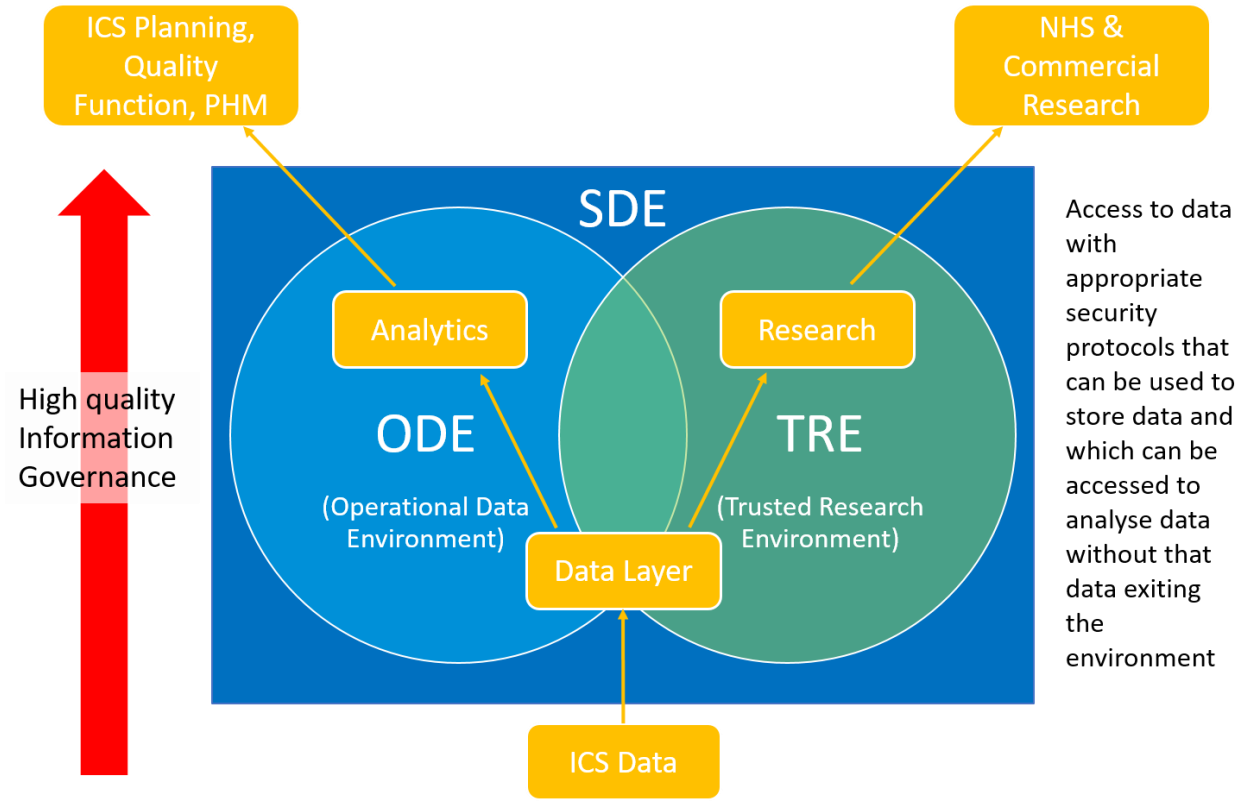
Attention will need to be paid to when patient-identifiable data is needed and for which purposes de-identified data is appropriate. Sometimes data will need to be analysed in a de-identified form to identify patient cohorts and patterns in the data but then to be re-identifiable when passed back to clinicians for interventions involving individual patients.

The OneLondon work and London Health Data Strategy contain many useful recommendations and there may be great benefit in working together on data (and potentially on analytics) across London. It is recommended that SWL support pan-London data workstreams, aiming to benefit from the best practice of NEL CSU experts now hosted by North East London ICS, combined with that of the team based in NEL ICS who have been developing Discovery Data Services.

Ultimately the goal would be to ensure a Secure Data Environment that serves the needs of analysts, system planners and PHM as well as researchers (see following sections on analytics, research and a trusted research environment).

[50] An Independent Information Access Group would provide governance and oversight of requests to access de-personalised SWL ICS health and care data. It would need to ensure that access to data is legal, safe, time-limited, well-monitored, with a clear purpose for public good and that the group providing this oversight is diverse and equal with transparent and well-informed decision-making (in line with the principles that were agreed through London public deliberations on use of data).

A simplistic representation of a Secure Data Environment (SDE):[51]



It is worth noting that the London Borough of Sutton have received £400k as part of the London Data Accelerator Programme, which aims to bring together Children's Services Data across the 33 London Boroughs into a single shared Platform, with sponsorship from the 33 Directors of Children's Care. This work will explore what currently exists in data sharing arrangements, tools and expertise with a view to building a strategy for scaling the linkage of Children's Services and NHS data across London. It will identify the 'use cases', tools and governance required to share and link the data, to streamline access across sectors and enable new preventative interventions. This work is being supported by the SWL ICS analytics team, amongst others, and it will be important to feed the learning from this into any future Data Strategy.

[51] See Appendix Section 6 for detailed explanation of a SDE (p79)

SWL Analytics and BI (Business Intelligence)

The current analytics workforce is stretched thin and is serving many different aims, including:

- Planning
- Performance and Activity Tracking, including elective recovery and diagnostics
- Quality Oversight
- COVID-specific work, such as vaccination data
- Focussed work on Health Inequalities
- PHM
- Support for various Transformation Programmes and Pilots

There are significant vacancies in the SWL ICS analytics/BI team and there are multiple current priorities. There are a large number of requests coming into the team, many of them badged as "PHM" but very few actually originating from PHM programmes. The ask for PHM would be to have a dedicated amount of SWL analytics capacity devoted to PHM to enable the SWL PHM team to manage that ring-fenced resource and ensure effective prioritisation. Analysts are essential for PHM as they help make sense of the data, interrogate the data and build dashboards to allow better access. In the future, analysts should also be used to support the whole quality improvement (QI) cycle that forms a core part of PHM.

A cross-directorate analytics/BI prioritisation group meets regularly to review the requests and demands on the central ICS team and to help manage their workflow. It is recommended that greater structure is provided to this group with work done to determine strategically what percentage of the team's time should be spend on which system activities and priorities (obviously including the above request for PHM). This could be profiled through the year so that, for example, at key stages of the planning cycle more resource is diverted to support this function and that this is then reduced and allocated elsewhere at other times in the year.

To support this approach it is also suggested that all SWL ICS system partners who are developing pilots, projects and programmes need to scope upfront the analytics support required and to log this with the ICS analytics team.

This describes what can be done now. For the future, work is required to determine the key functions of the ICS, including current functions that need to continue but

also introducing functions to support new ICS requirements, such as the clinical, operational and strategic decision-making referenced in the intelligence function diagram on p.39 e.g. workforce demand and deployment. Once we are clear on the future ICS requirements for an intelligence function, work can be done to plan how the analytics workforce needs to develop to support this.

We are not starting from scratch. Cross-system work has been done in the PHM analytics Action Learning Sets and the analytics/intelligence review undertaken by OHID for the ICS[52]. It is suggested that SWL ICS builds on this to create an Analytical Skills (Workforce) Development Plan and a linked Training Plan. Additionally there may be great benefit in work being undertaken pan-London to develop the analytical workforce (in line with the recommendations contained in the Goldacre review).

3. Research

Population Health Research Institute (PHRI) St George's University of London

A significant ambition of the PHM programme is to carry out high quality research on important population health themes to inform disease prevention locally, and also to contribute to disease prevention both nationally and globally. Research links forged with academics at St George's, University of London will help facilitate this by providing exemplars in specific areas, identified through the PHM programme as being of public health importance to the local population. In particular, we have partnered with researchers within the PHRI at St George's, in order to build links with a focus on research with an increasing societal impact (relevant to the local population), which responds to new and emerging challenges, on which we can work together effectively to address and evidence by demonstrating change using on-going surveillance of the local population, working closely with analysts within the PHM programme. It is envisaged that involvement of St George's will provide the opportunity to share ideas and work alongside academics to stimulate synergies and collaboration.

[52] See Appendix Section 5 for more detail of OHID analytics review (p70-71)

Academic and research staff within PHRI bring both quantitative and qualitative research skills, with special expertise in epidemiology, medical statistics, public health, primary care, health service improvement research and evaluation, behavioural medicine, medical sociology, and anthropology, with experience of using large-scale national data resources in research.[53]

Trusted Research Environment (TRE)

This is a safe way of pulling resident's health and care data into a safe place and ensuring only trusted people can access it in a safe way that is carefully monitored. They cannot remove residents' data from this place.[54]

To support both academic and potentially commercial research, SWL will need to develop a TRE. This forms part of the London Health Data Strategy and it is proposed that SWL does not progress work on its own but rather learns from other London ICSs, such as North West London, who have created Discover-NOW[55], and supports the pan-London work on this.

[53] See Appendix Section 7 for further detail on areas of interest for work with PHRI (Further Interdependencies) (p80)

[54] In technical terms: A technical/digital environment or platform that allows for the safe use of data for research purposes, preventing misuse and leaks through its core design. It follows the principle that the researcher comes to the data rather than the data being released to the researcher.

[55] https://discover-now.co.uk/the-data/ Discover-NOW gives system partners direct access to de-identified data for research, planning and PHM (with the ability to re-identify for direct care) and allows third parties restricted use of the data for research and development. It has developed what Goldacre calls a "service wrapper", which is the set of rules, regulations, governance and customer service that surrounds a TRE.

4. Summary of Combined Data, Analytics and Research Position and Recommendations

Current Position:

Data Layer – North East London Commissioning Support Unit (NEL CSU) have been providing the "**data layer"** for SWL (data curation, management, linking and storage). With the changes and ending of NEL CSU this function will now be hosted on behalf of all London ICSs by North East London ICS.

Analytics - Our analytics is a combination of the **people** (NEL CSU have had an analytics team focused on SWL who are now being in-housed to the SWL ICS) and the **analytical tool** (Health Insights = dashboards created in Microsoft PowerBI).

These **three** components make up our ICS Intelligence Function.

Our recommendation is that a sensible future solution for the next year or so could be:

Data Layer – provided by the former NEL CSU team who have moved to NEL ICS working together with the Discovery team who are also based in NEL ICS

Analytics – continuing to be provided by our in-housed CSU **team** in SWL (which needs development and support) and there is potential to work together with teams in South East London and the Health Innovation Network (the South London Allied Health Sciences Network) and possibly other ICSs to reduce duplication and share resources. Continuing for now to use **Health Insights** as our PHM platform. Support any wider work on creating an Analytical Skills (Workforce) Development Plan and a linked Training Plan.

In addition, regarding Research – continuing to work with St George's University and the SWL Research leads on developing our research capability and exploring the Discover-NOW product from North West London as a potential TRE as part of the pan-London work.

List of PHM Recommendations

1. Building a SWL PHM Team

a. Clarify clinical leadership for PHM beyond June 2022

2. Learning by Doing

a. Continue to support existing PHM pilots/programmes (Sutton, 5 PCNs, OP)
b. Support new PHM pilots in Croydon, Merton, Kingston & Richmond
c. Select and support two SWL Elective Clinical Networks and one SWL Transformation Programme to act as PHM Pilots
d. Identify and support one further SWL-scale provider PHM pilot programme
e. Support the ICS Partnership Board to agree one SWL-wide whole system PHM programme

3. Culture, behaviour and skills

a. Agree an approach to delivering appropriate system-wide development and training with the ICS Partnership Board (to cover PHM, value-based healthcare, QI, programme skills)

4. Sharing and Supporting Best Practice

a. Create a SWL Community of Practice for PHM
b. Identify and support PHM leaders, champions and experts
c. Create a PHM library

5. PHM Platform

a. Continue to manage the ongoing development of Health Insights
b. Undertake an options appraisal to obtain a PHM Platform fit for the future in co-ordination with other London ICSs

6. PHM-related Analytics

a. Over time, support each Place to obtain a SWL ICS PHM-focussed analyst
b. Over time, ensure that each PCN has access to a SWL ICS PHM-focussed analyst
c. Support further work on developing the analytics workforce and a pipeline for analysts both for SWL and London as a whole (supporting creation of an Analytical Skills (Workforce) Development Plan and a linked Training Plan)
d. Ensure training and support of non-analysts in analytical techniques.

7. Finance

a) Further work will be required involving finance experts in developing budgets for any PHM pilots or programmes, to ensure all elements of programme delivery are budgeted and to:

- Develop population budgeting
- Create financial incentives for all system partners to ensure that effective interventions are sustainable

8. SWL PHM Goals

a) To establish clear goals for the development of PHM capability and capacity and for improving health outcomes for each sector of our system and include:

- PCNs
- Places
- SWL system (system functions, networks and transformation programmes, provider collaboratives) overall system goals to be set by the SWL ICS Partnership Board

Conclusion

South West London has come a long way in the last nine months; from pockets of good practice and a poor external perception of our progress to being recognised as a national exemplar. This has come through an approach that has built on the assets and enthusiasm that already existed, catalysed by the PHM Development Programme and led with energy, purpose and clarity focussed on encouragement, co-ordination, reduced duplication and sharing best practice.

This Development Plan proposes continuing in that vein without a request for significant new financial investment or whole new teams but rather using what we have more effectively and ensuring that all in the system adopt a PHM approach in the work that they do.

The primary goal is that together as a new Integrated Care System we recognise this as a top priority and devote the time to making this successful so that we can

- Reduce unwarranted variation in quality and outcome
- Avoid harm to patients
- Prevent waste, and failure to maximise value
- Effectively tackle health inequalities and inequities
- Prevent disease

These are the challenges facing all health systems but we have the relationships, people and resources in South West London to meet them head on and together to become the best integrated health and care system in the country.

"Change will not come if we wait for some other person or some other time. We are the ones we've been waiting for. We are the change that we seek." - Barack Obama

APPENDIX

1. Contributors

SWL PHM Team:
Dr Andrew Murray, *SRO for PHM, SWL ICS & Chair of PHM Programme Board*
Samantha Green, *Head of PHM Programme, SWL ICS*
Mary Coakley, *PHM Project Support Officer, SWL ICS*

Public Health:
Dr Dagmar Zeuner, *Director of Public Health, London Borough of Merton & PHM Programme Board Member*

Quality & Health Inequalities:
Gloria Rowland, *Chief Nurse and Executive Director or Quality, SWL CCG/ICS & PHM Programme Board Member*

Research:
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Contextual information from:
Professor Sir Muir Gray, *Professor of Knowledge Management, University of Oxford, Director of Optimal Ageing Programme Ltd and Chief Knowledge Officer of EXi*

PHM Programme Board Members:
Samantha Boyd, *Associate Director, System Strategy, SWL ICS (Croydon Place)*
Dr Imran Choudhury, *Director of Public Health, London Borough of Sutton*
Claire Clements, *Strategic IG Lead, Data Protection Officer for South West London CCG, NHS London Shared Service*
Jummy Dawodu, *Director of Operations (South West), Central London Community Healthcare NHS Trust*
Kevin Fitzgerald, Director *of IM&T, Kingston Hospital NHS Foundation Trust, CIO*
Charlotte Gawne, *Executive Director of Communications and Engagement, SWL ICS*
James Hebblethwaite, *Population Health Lead Analyst, Central London Community Healthcare NHS Trust*

Dr Richard Jennings, *St George's and Epsom St Helier Group Chief Medical Officer, lead for PHM*
Jamie Jong, *Deputy Director of Business Intelligence SWL, NHS London Shared Services*
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Sam Mason, *Health and Care Programme Manager, South London Partnership*
Dr Annie Murphy, *East Merton PCN Digital Lead, SWL Clinical Lead for Digital Services*
Anita Parkin, *Director of Population Health, Central London Community Healthcare NHS Trust*
Prof Andy Rhodes, *Acute Provider Collaborative, Medical Director (until March 2022)*
Simon Robson, *Deputy Director of Adult Social Services and Director of Adult Social Care, London Borough of Croydon*
Dr Laura Rodriquez-Benito, *Clinical Director for Wallington PCN, PHM & Lifestyle Lead for Sutton PCNs*
Dane Satterthwaite, *London Region Head of PHM (Acting) and COVID-19 Vaccine Programme - Inequalities Analytics, NHS England and NHS Improvement*
Amy Scammel, *Director of Strategy, Transformation and Commercial Development South West London and St George's Mental Health NHS Trust*
Susan Sinclair, *Managing Director, Royal Marsden Partners*
Joanna Watson, *Director of Finance, Financial Systems Management, SWL ICS*
Amelia Whittaker, *Director of Contracting, SWL ICS*
Miss Jane Wilson, *Chief Clinical Information Officer (until March 2022)*

2. Further Definitions

Health Inequalities[56]

The avoidable, unfair and systematic

- Differences in the status of people's health (e.g. higher rates of diabetes)
- Differences in the care that people receive (e.g. access to care)
- Differences in the opportunities to lead healthy lives (e.g. wider determinants of health such as housing)

Core actions required are to

- Give every child the best start in life.
- Enable all children, young people and adults to maximise their capabilities and have control over their lives.
- Create fair employment and good work for all.
- Ensure healthy standards of living for all.
- Create and develop healthy and sustainable places and communities.
- Strengthen the role and impact of ill health prevention.

Inequity vs Inequality

The term *health inequality* generically refers to differences in the health of individuals or groups. Any measurable aspect of health that varies across individuals or according to socially relevant groupings can be called a health inequality. Absent from the definition of health inequality is any moral judgment on whether observed differences are fair or just.

In contrast, a *health inequity*, or health disparity, is a specific type of health inequality that denotes an unjust difference in health. By one common definition, when health differences are preventable and unnecessary, allowing them to persist is unjust. In this sense, health inequities are systematic differences in health that could be avoided by reasonable means. In general, social group differences in health, such as those based on race or religion, are considered health inequities because they reflect an unfair distribution of health risks and resources.

The key distinction between the terms *inequality* and *inequity* is that the former is simply a dimensional description employed whenever quantities are unequal, while the latter requires passing a moral judgment that the inequality is wrong.

Personalisation and Personalised Care

Personalised care means people have choice and control over the way their care is planned and delivered. It is based on 'what matters' to them and their individual strengths and needs. This happens within a system that makes the most of the expertise, capacity and potential of people, families and communities in delivering better outcomes and experiences. Personalised care represents a new relationship between people, professionals and the health and care system. It provides a positive shift in power and decision making that enables people to have a voice, to be heard and be connected to each other and their communities.

This approach learns from the experience of social care in embedding personalised care in everyday practice, which has enabled people to take control over the funding for their care. It also builds on pockets of progress made in health.

Critically, personalised care takes a *whole-system* approach, integrating services around the person including health, social care, public health and wider services. It provides an all-age approach from maternity and childhood right through to end of life, encompassing both mental and physical health and recognises the role and voice of carers. It recognises the contribution of communities and the voluntary and community sector to support people and build resilience.

There are six standard components of personalisation:

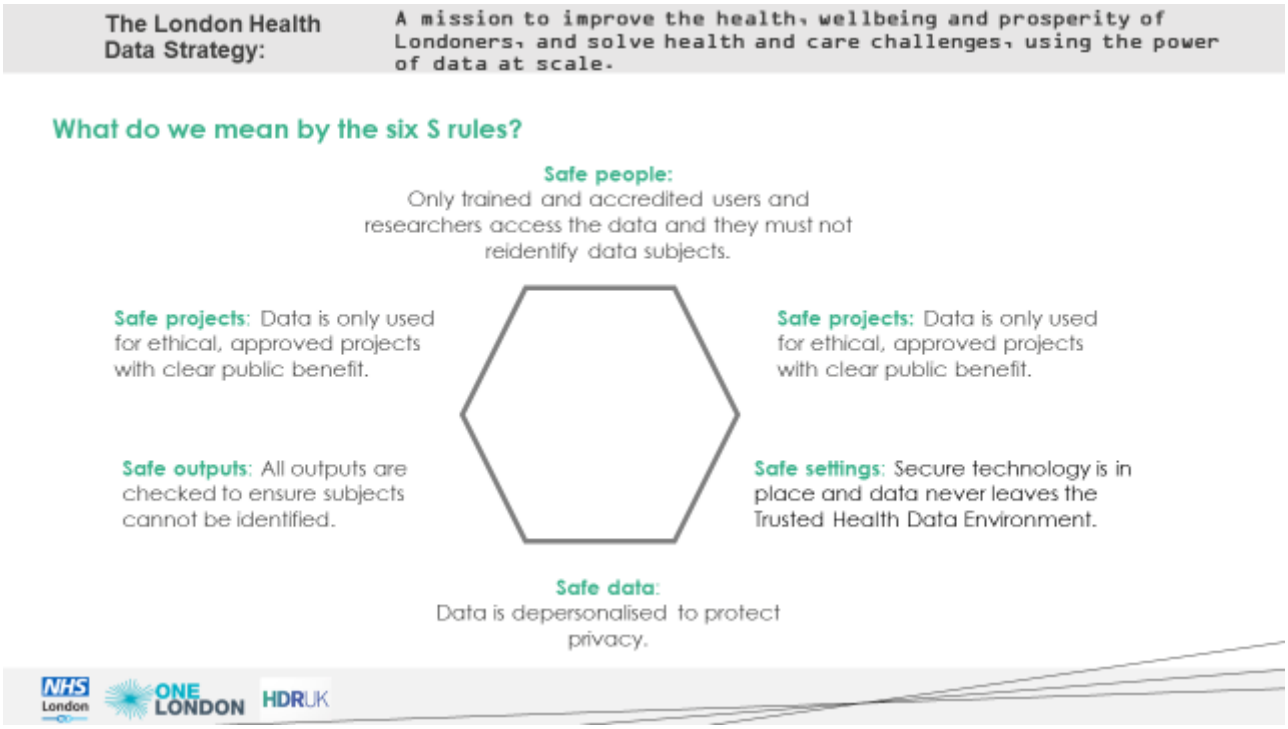
- shared decision making
- personalised care and support planning
- enabling choice
- social prescribing and community-based support
- supported self-management
- personal health budgets and integrated personal budgets

[56] See the 2010 Marmot Review: https://www.parliament.uk/globalassets/documents/fair-society-healthy-lives-full-report.pdf

Data definition

6 safes

6 safes as defined by NHS London/OneLondon team:



London Data Glossary – selected entries

Domain	Term	Simple Description	Technical Description proposed in latest pack	Goldacre Review	Intelligence Function Guidance
Shared Care Record	**LHCRE Level 1: London Care Record**	Every health and care professional can see information from other organisations about the patient in front of them			
Getting Data	**LHCRE Level 2: London Data Services**	A way of getting standardised, good data about residents and putting it in one safe place	The common data layer across London – this is still in development, with different data types from different ICSs still being incorporated. At present, the data type with greatest coverage is primary care.		
	Data Services Layer or Shared Data Layer or Common Data Layer	Same as LHCRE Level 2	The technical environment in which data is collected and stored, for a variety of uses in other applications – modern technical design recommends separating this ingestion and storage function from the applications where data will be used		
	Application Layer	All the possible digital applications and tools that make use of the data layer	The technical environment that accesses data from the data layer for the full range of uses – this separation of application and data layers provides increased security and robustness for the system in operations		
	Analytical Layer	A way of safely looking at data in the data layer and analysing it			

	Reproducible Analytical Pipelines (RAP)	Standardising the way data is recorded, shared and analysed to allow researchers and analysts to compare their findings		A set of best practices and training as the minimum standard for academic and NHS data analysis: this will produce high quality, shared, reviewable, re-usable, well-documented code for data curation and analysis; minimise inefficient duplication; avoid unverifiable "black box" analyses; and make each new analysis faster.	
	Data curation	Recording data well and consistently		"Data management" or "data preparation" is the crucial first step of any meaningful data analysis. Data curation is a data management task. Data management is done in code: where there is a desire to share access to curated data, this means sharing access to re-usable data management code with adequate technical documentation, in a library where it is discoverable and managed.	
	Libraries	Agreeing standard ways of recording data		Creating standard catalogues of "approved" variables and datasets, such as a single canonical variable for "patients with diabetes". Create and maintain an NHS Data Curation Library where all data users can	

				assert variables and data management code alongside technical documentation; this must be inclusive, and separate from work around assurance of variables	
Information Governance	**Role-Based Access Control (RBAC)**	A way of ensuring health and care workers only see information relevant to the job they do			
	Shared Care Record Access Control Model (National)	Same as RBAC with 6 possible roles for health and care workers			
Accessing & Using Data	**Secure Data Environment (SDE)**	Describes the combination of a TRE and ODE			
	Trusted Research Environment (TRE)	A safe process to pull resident's health and care data into a safe place and ensuring only trusted people can access it in a safe way that is carefully monitored, for the purposes of research. They cannot remove residents' data from this place	A technical/digital environment or platform that allows for the safe use of data for research purposes, preventing misuse and leaks through its core design. It follows the principle that the researcher comes to the data rather than the data being released to the researcher.	A secure environment that researchers enter in order to work on the data remotely, rather than downloading it onto their own local machine. Users can extract and download the answers from their analyses - such as results tables, or graphs - but individual patients' data always stays within the secure environment. TRE should be conceived of as having three components: a service wrapper; the underlying generic computational and database services; and the bespoke software needed for work with NHS data	

	Operational Data Environment	A safe process to pull resident's health and care data into a safe place and ensuring only trusted people can access it in a safe way that is carefully monitored, for the purposes of planning, monitoring and improving health and care services. They cannot remove residents' data from this place			
	Trusted Health Data Ecosystem	An agreement between health and care organisations to work together in way that safely makes the most of residents' data to improve their health	The Programme has defined this term as the Health Data Environment's technical capabilities and services, plus the broader system in which it sits including all the potential users and providers of data – this is the widest term used		
	Trusted Health Data Environment	The rules and technology that allow health and care organisations to work together in way that safely makes the most of residents' data to improve their health	The Programme has defined this term (abbreviated THDE) as the full 'stack' of the technical environment, including the various data and application layers that exist in the system, plus the services associated with operating the THDE – management, information governance, public engagement, and so on		
	Service Wrapper	The rules and processes to ensure that the TRE (safe-space for data) is definitely safe and used appropriately		The set of rules, regulations, governance and customer service that surrounds a TRE. There will be a range of rules around who can access the data, the skills or certificates they may need; rules around permissioning for projects; processes to evaluate compliance with these rules; forms	

				to collect the data, and administrative processes to manage them; etc. There will be governance for the TRE as a project in itself, and a range of permissions, contracts, relationships and governance arrangements around the patient data that is being ingested. There will be public-facing material to be managed, describing activity in the TRE to a greater or lesser extent. There will also usually be an "output checking service".	
	Data Access Environment	How data is managed, stored and accessed within an organisation		An internal service where staff at an organisation can have some shared resources for secure storage and analysis of data, such as shared databases, or shared provision of computer power	
	Population Health Management platform	A digital portal that allows health care professionals and planners to view data about a population and better understand the needs of segments of that population			A digital tool/platform that performs standard analyses, such as population segmentation and risk stratification, so that care can be targeted and personalised to the greatest effect. As population health analytics develop in power, the focus will grow from condition management to the use of predictive risk factors to aid early detection and the prevention of ill health.

	Intelligence Function	This describes how a health system would get analysts and other teams to work together to use data to improve population health and to monitor and improve health and care services			An Intelligence Function is a system-wide, multi-disciplinary collaboration of intelligence professionals, with representation from analytical leaders and key teams across the whole ICS. At its core, it is a way of coordinating a diverse range of analytical skills to support the needs of the system. The purpose of the Intelligence Function is to ensure that ICS decisions are routinely informed by evidence that is tailored to the local context, including a detailed understanding of health inequalities between population groups, and that the system is supported to take a population-based and approach to care planning and delivery, including the use of data to shape the personalisation of care.
Personal Health Record	**LHCRE Level 3: Personal Health Records**	Every resident can access their own health information through an app			

Documents/Sources	**Purpose**
One London Stocktake	In late 2021, the OneLondon Board requested a 'stock-take' of the programme across London. The rationale for the stocktake was to provide a shared, common understanding of the status of delivery across London.
Towards systems of integrated care and innovation in London: creating trusted health data ecosystems and environments as a basis for health and wealth (London THDE/E - Data Strategy)	How we make the most intelligent and trustworthy use of the data created within the hundreds of thousands of clinical and operation interactions that happen each day. A. Where are we heading to, where have we come from, and where are we now? B. What are our strategic challenges, requirements, and choices? C. Where can we learn from: international comparisons? D. What are our conclusions and next steps?

London Health Data Strategy: Outline Business Case	The vision for the London Health Data Strategy is to materially improve the health and wellbeing of Londoners through better use of data. This is a proposition as to how to deliver the London Health Data Strategy
Goldacre Review: Better, Broader, Safer: Using Health Data for Research and Analysis	This review was tasked with finding ways to deliver better, broader, safer use of NHS data for analysis and research: more specifically, it was asked to identify the strategic or technical blockers to such work, and how they can be practically overcome
NHS Secure Data Environments Capability Specification	Sets out the core required and preferred architectural capabilities for the use of Secure Data Environments (SDEs) by the NHS, or for the use of NHS data, in England
ICS Intelligence Function Guidance: Building an ICS Intelligence Function	This guidance builds on and clarifies the expectations of ICS Intelligence Functions, which have been previewed in other guidance published over the past year, including Integrated Care Systems: Design Framework and most recently in the 2022/23 priorities and operational planning guidance

3. Wave 3 SWL PHM Pilots and Examples from Elsewhere

For 22 weeks as part of the Wave 3 NHSE/I PHM Development Programme multi-disciplinary teams in one Place (Sutton) and five PCNs (Battersea PCN, East Merton PCN, Kingston PCN, North Croydon PCN and Wallington PCN) were supported by the NHSE/I delivery partner, Optum, to focus on a specific selected cohort of their local population through the real time application of advanced analytics and intelligence-led care design. Tailoring health interventions together, aiming to ensure they had better access to health, better engagement, a better experience and better outcomes. In addition, ICS analytics teams were supported by a series of Analytics Action Learning Sets (ALSs) focusing on Insight Tools, creating linked data models and evaluation techniques. The SWL case studies are below and have been approved by NHSE/I and are published on the FuturesNHS website.

Sutton Place

Place population size: 207,075
Cohort size: 2,170
Cohort description: Over 20 years of age, with Osteoarthritis, diagnosis of Hypertension, obesity or depression living in areas of high deprivation in Sutton
Description of intervention/service: To support the individual via a community hub to eat more healthily, be more active, reduce stress and feel more confident in leading a healthy lifestyle and increase their confidence to manage their conditions

Battersea PCN

PCN population size: 55,000
Cohort size:
Cohort description: Patients with evidence-based adverse health indicators, who didn't consult more than twice within the defined year of interest
Description of intervention/service: To gather information from representative individuals, to find out more about their life circumstances, health beliefs, experiences of GP and community services and ideas for improvement

East Merton PCN

PCN population size: 48,000

Cohort size: 557

Cohort description: Over 18 years of age, with Severe Mental Illness (Psychosis, Schizophrenia or Bipolar Affective Disorder) and a Dual Diagnosis of Drug and Alcohol dependence.

Description of intervention/service: health and wellbeing hub in community setting

Kingston PCN

PCN population size: 46,000

Cohort size: 97

Cohort description: The factors that were used to select the cohort were - Prediabetic +/- deprivation +/- depression/anxiety +/- previous declined health promotion interventions.

Description of intervention/service: Social Prescribing team to introduce project and discuss what barriers the patient may have to improving their health (social determinants), followed up by a one to one meeting with a Health and Wellbeing Coach to discuss pre-diabetes, provide initial education and motivation. Personalized pathway then created.

North Croydon PCN

PCN population size: 50,034

Cohort size: 69

Cohort description: People of working age, BAME with a history of Serious Mental Illness and who are obese, in low-middle complexity and non-diabetic were chosen.

Short Term

- Patients understanding the role that they can play in their own health outcomes
- Understanding of what a healthier lifestyle looks like
- Patients motivated to engage with positive lifestyle behaviours, diet/exercise.

Medium Term

- Increased personal responsibility
- Engagement with positive lifestyle behaviours
- People accessing services more appropriately
- Improved well being

Long Term

- Reduced BMI, reduced prevalence of long-term conditions

- Reduction in GP/A&E and acute admissions
- Patients able to care for themselves better by feeling informed, confident and able to achieve their health goals
- Patients feel more connected to their community, involvement with tertiary organisations – improved mental health, improved social situation.

Wallington PCN

PCN population size: 52,140

Cohort size: 338

Cohort description: People with obesity AND depression, chosen because they were identified as the least likely to access and engage with healthcare services

Description of intervention/service: Health coaching intervention to help to change health behaviours (taking up heathy eating and regular physical activity)

Rationale for intervention: To promote population health by proactively identifying patients at increased risk of poor health outcomes. This coaching intervention was chosen because it strives to improve health and wellbeing by increasing patient activation/facilitating positive behaviour change.

Further Exemplars

Dorset

Cohort - frailty population data using segmentation based on long term conditions, hospital admissions, polypharmacy and cost to the system, small group of patients identified.

Intervention - proactive personalized case management.

Outcome - reduced patient frailty score and improved independence, reversing segmental drift.

Surrey Heartlands ICS

Developing a system-wide intelligence function and an analytical community of practice enabling predictive analysis at secondary and primary prevention levels, Artificial Intelligence (AI) and machine learning with impactability and actuarial modelling.

Analytics to support data driven-decision making to guide strategic business decisions that align with identified goals, objectives and initiatives. Enabling outcomes-focused services to be developed aiming to achieve the priorities that people have themselves identified as important, which include wider determinants of health. Developing an ICS wide business intelligence operating model, with data/digital as the enabler and PHM as the lens.

Montefiore, New York, USA[57]

System-level intelligence led integrated health and care, highly centralised case management infrastructure for patient identification, workflow management and monitoring for seamless patient experience.

Cohort – at risk patient criteria agreed = previously identified by housing or social service provider as at risk, home address is a Hospital, Clinic or Shelter, homeless and previously seen by a GP who specialises in homeless care.

Intervention – if presents to ED (Emergency Department), relevant providers notified, Social Worker-facilitated discharge plan, patient discharged to respite housing.

[57] https://www.kingsfund.org.uk/publications/montefiore-health-system-summary

Nuka, Alaska, USA – transformation of primary care delivery model

The NUKA system of care provides health and social services for over 65,000 Native individuals in Alaska, US. Ineffectively utilised and poor quality care was shifted from hospital to patient through primary care partnership and transformation by using their advanced Primary Care Delivery Model, providing same day access either in person or virtually with group visits also available.

Reduced Utilisation

36%

Reduction in ED visits

28%

Reduction in GP visits

Decreased Cost

36%

Improved Quality

Across performance outcome measures

Advanced Primary Care Delivery Model - Integrated Care Teams Staff to GP Ratio

Core GP Team (1 per GP)

- **Registered Nurse Case Manager**
- **Case Manager Administrative Staff**
- **Certified Medical Assistant**

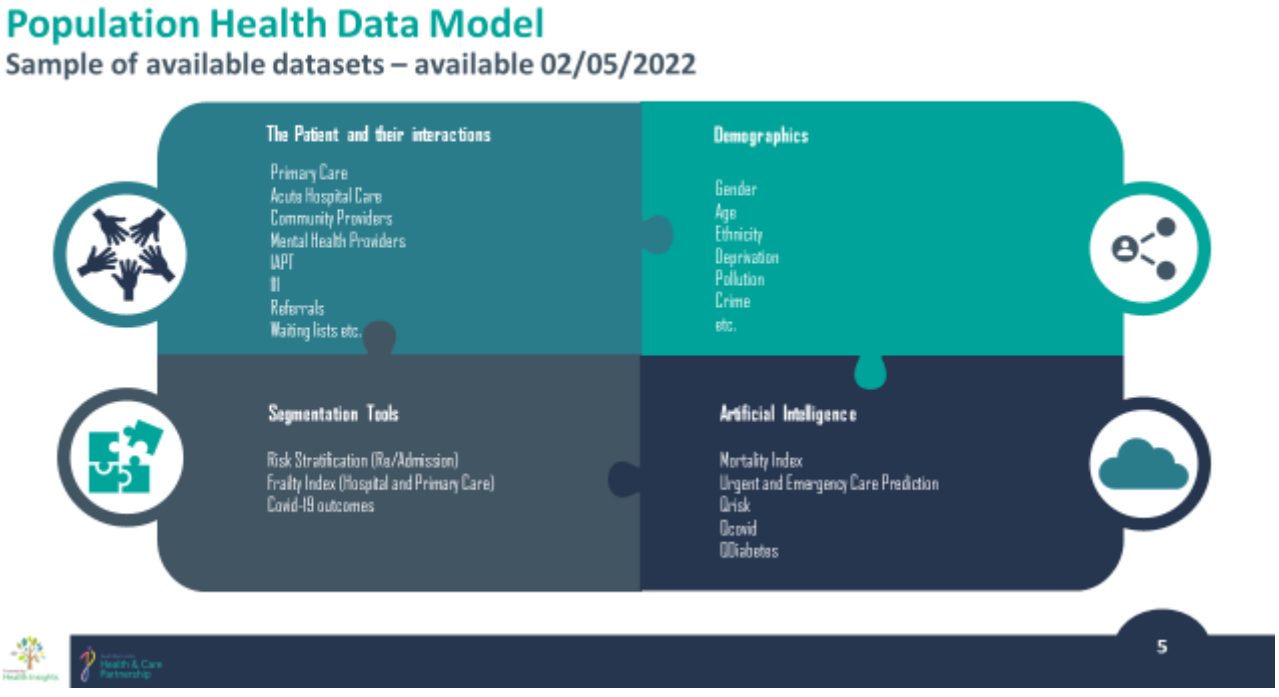
Extended ICT Team (1 per 6 GPs)

- **Behavioural Health Consultant**
- **Registered Dietician**
- **PharmD**
- **Nurse Midwife**
- **Non-Clinical Clinic Manager**

4. Health Insights

Health Insights is the interface built by the NEL CSU analytics/BI team who have been "in-housed" in the SWL ICS. It is built using Microsoft PowerBI and presents a view of data from various sources using interactive dashboards built by the team.

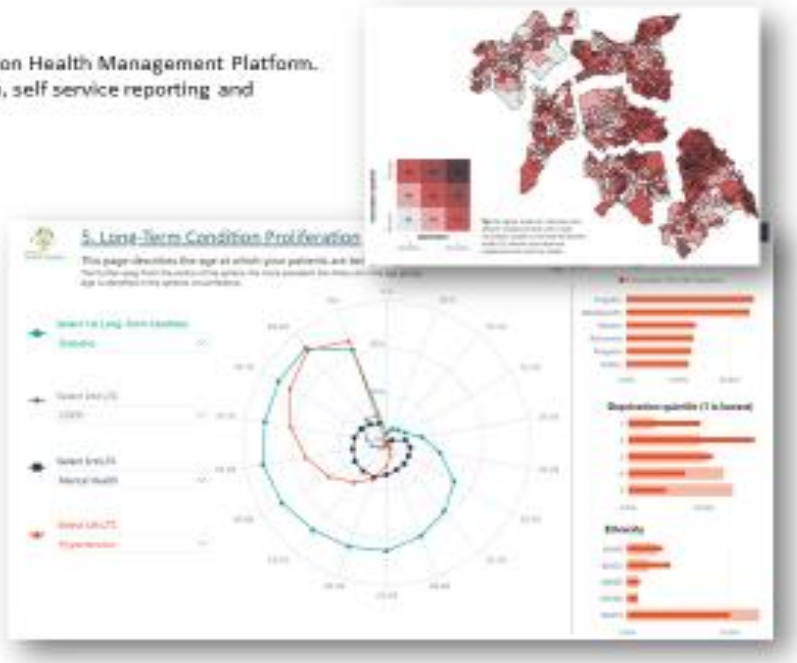
The following slides, give a further overview:



SWL ICS Health Insights Platform

Interactive Population Health Management

Health Insights is South West London's Population Health Management Platform. Acting as a knowledgebase, it hosts all research, self service reporting and documentation.



Health Knowledgebase

A site that contains the wealth of knowledge we have developed under Population Health Management.

Single sign-on, Role based access

Ease of use, web based, scalable, role and level of detail governed by user credentials

Interactive, visually appealing, self service

Simplicity of design, storytelling, intuitive narration

Insightful

Technology and analysts provide the structure, the user decides how deep they want to dive into the story

Depth of analysis

Infrastructure narrates risk algorithms and machine learning outputs, without needing to be an expert

5. Office for Health Improvement and Disparities (OHID) Analytics Skills Mapping Exercise

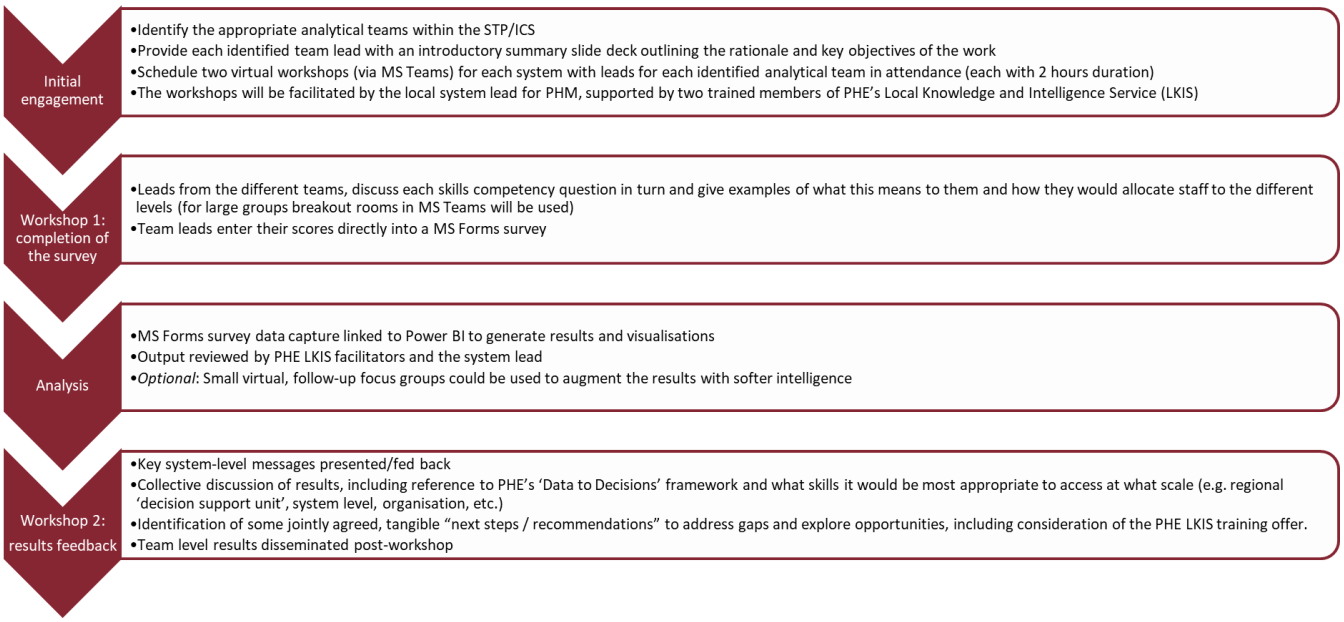
SWL ICS partners (including Directors of Public Health/Local Authorities, SWL Providers, SWL ICS analytics/BI team) were approached by Public Health England (which has now become the Office for Health Improvement and Disparities) since they were undertaking an exercise in each ICS entitled "Team Level Population Health Intelligence Skills Mapping (From data to decisions: *Building blocks for place-based population intelligence systems)*."

The idea was that the skills mapping process would form an important initial step in helping local systems to undertake PHM, by establishing where there are gaps in intelligence skills (both in terms of capability and capacity) and where there might be opportunities for collaboration on analytical work. Once we heard of this exercise, the PHM team helped with the coordination to ensure it complemented the analytics workshops run as part of the National PHM Development Programme and the Stocktake.

The aims of the skills mapping process were stated as:

- to map, at a high level, existing skills and capacity in population health intelligence across local partners in an ICS or STP footprint
- to identify particular strengths of teams across the patch
- to begin to set out potential opportunities available through collaboration
- to start to understand current gaps in the system which can inform:
  - Training needs
  - Arm's length body (e.g. PHE/NHSE) support offers
  - Priorities for other external support

The process is:



Those involved in the process include SWL CCG/ICS/CSU analytics/BI team, SWL NHS Acute and community providers, Primary Care, Local Authority analysts and Public Health teams and PHRI (St Georges, University of London).

We are still waiting for the feedback of results and a report.

6. SWL Context – Further Interdependencies

Intelligence Function

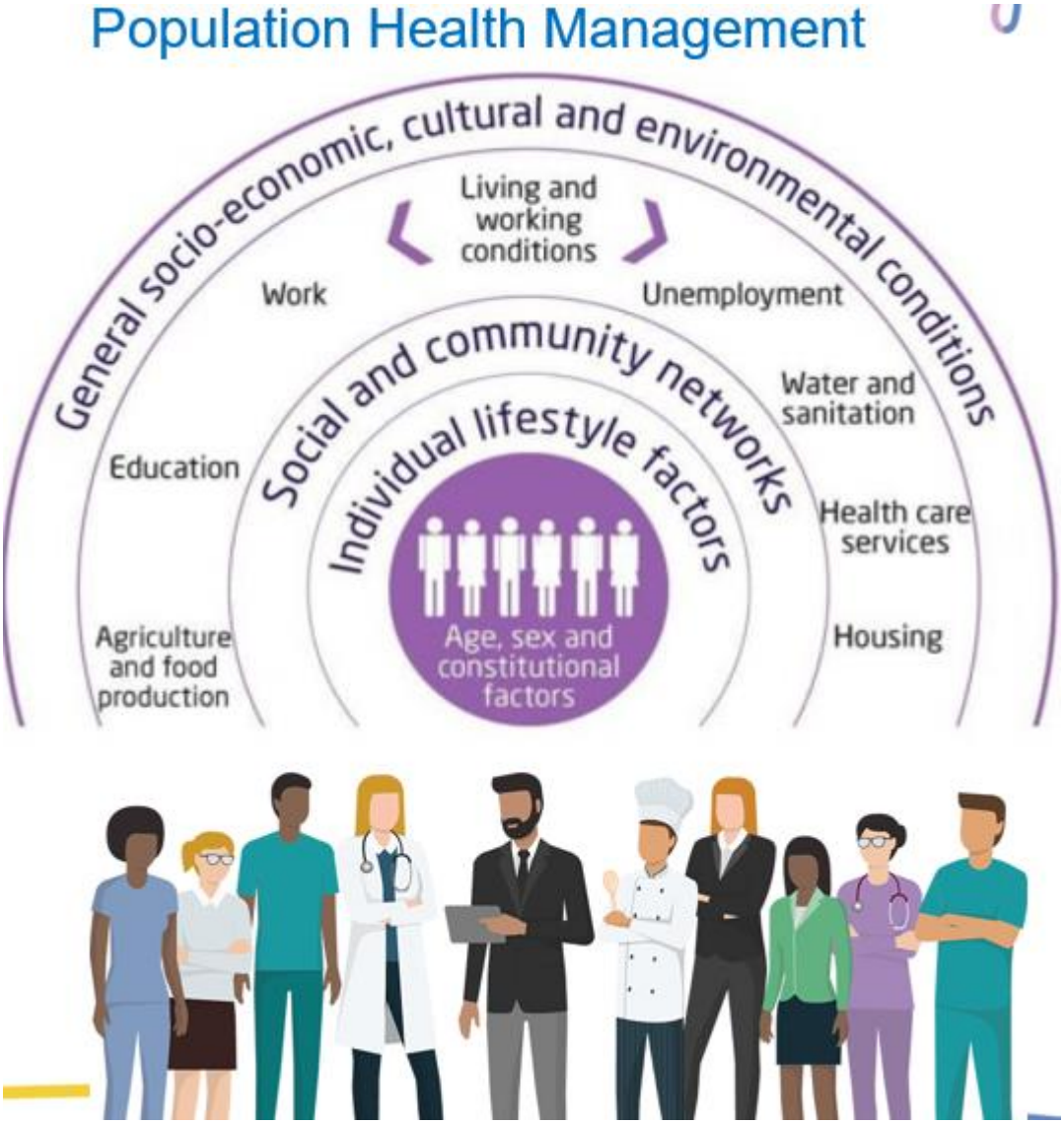
Goldacre Review: Better, Broader, Safer: Using Health Data for Research and Analysis – selected quotes

"Data can be used to compare service activity and clinical outcomes between organisations; to identify opportunities for improving the quality, safety, and cost effectiveness of services; to locate excellence, and share best practice; to model and forecast waiting lists; to predict the best locations and sizes for new services; to evaluate service recovery after the COVID-19 pandemic; to measure the impact of new interventions or new service delivery models; and to ensure value from clinical contracts. These kinds of analyses deliver direct improvements in patient care by identifying problems early and improving services for all.

As is clear throughout this review, data alone does not produce these insights on its own. Raw data must be managed, curated, processed, analysed, presented, and interpreted before it can generate action. This requires a wide range of features to be in place across the system: individuals with strong analytic skills; good training and oversight; data that is accessible; modern data analysis tools; and data that is high quality wherever possible, with any shortcomings documented informatively and accessibly. It also requires senior managers with the skills to recognise good analytics, understand the reports they receive, and pose informed answerable questions to their analytic staff."

Quality Improvement[58]

Population Health Management as enabler to improve quality



Planning and delivering quality at Place and system level will have a greater focus on PHM. Traditionally, we use service level data and intelligence to improve outcomes, services and experiences of care. As we develop the system's capability, we plan to use PHM insights which include data on the wider social-economic determinants of health (*i.e. education, housing, employment)* which will provide the system leaders with richer information about the health and wellbeing of individuals, families, and communities to define quality improvement programmes and pathways and support inequity of care.

[58] This section provided by SWL ICS Quality Directorate

This will also support us in delivering areas of mutual interest across health and social care (e.g., safeguarding and safety) and to improving quality through a system approach remaining focused on patient outcomes, developing a Quality Management Systems (QMS) framework as a learning system, as well as a culture of continuous learning system and SWL Peer Support and Assurance.

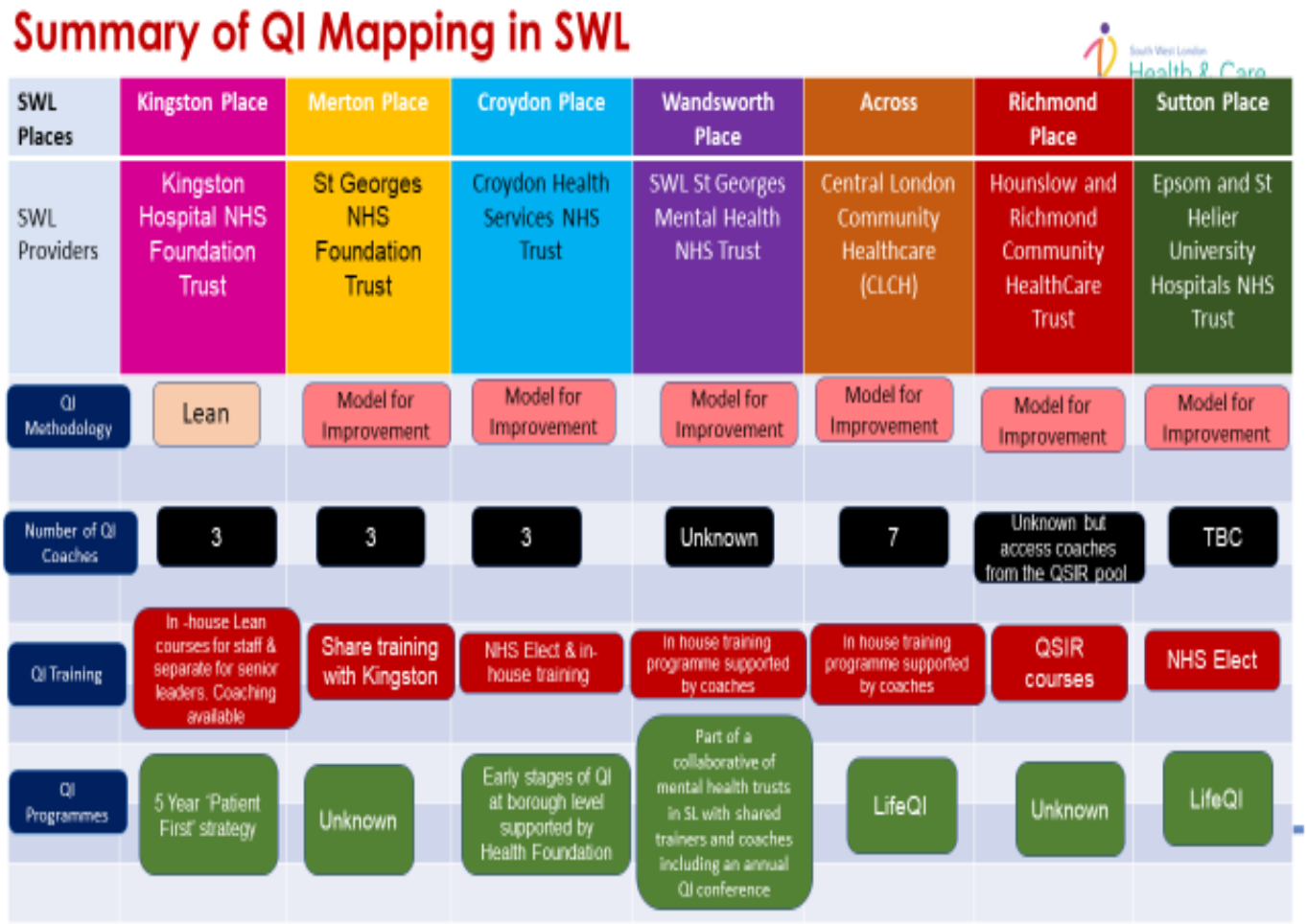
Quality Improvement Audits

The SWL ICS Quality directorate commissioned two audits on Quality Improvement at system level. One was undertaken by the NHSE/I QI team and the other by PPL consultants in March 2021.

- Methodologies across all Trusts and providers were mapped
- Themes and recommendations similar on both audits

Findings and recommendations:

- **As is-** QMS is primarily **focused on clinical quality**
- **Proposed:** There is appetite from system stakeholders to ***'go big'*** with QI
- SWL ICS to draft roadmap for development and delivery of QI at system level



Next steps that were suggested:

- NHSE/I QI team to lead and facilitate a 90 min ***'making data count'*** workshop to the SWL ICS Senior Management Team
- Repeat for Provider CEOs / CNOs, Quality Execs
- Map QI capability in Primary Care (General Practice to be specific)
- Complete market research and develop options appraisals

Health Inequalities

ICSs are taking a lead role in tackling health inequalities and building on the Core20PLUS5 approach introduced in 2021/22 to support the reduction of health inequalities experienced by adults, children and young people, at both the national and system level.

Consultation on this with our ICS partners has enabled agreement on the health inequalities work to progress across four tracks:

1. The five urgent (must-dos) actions for systems through the 2022/23 operating guidance
2. Core20PLUS5 Improvement Programme
3. Local medium to long term priorities (linked to Place Health and Care Plans) to be implemented in 2022/23
4. Resourcing and funding to deliver and tackle inequalities

The five urgent actions

Maintain focus on preventing ill-health and tackling health inequalities by redoubling efforts on the five priority areas for tackling health inequalities set out in guidance in March 2021.

Restore NHS services inclusively - focusing on decline in access amongst some groups during the COVID 1st wave which highlighted pre-existing disparities in access.
Mitigate against digital exclusion - be inclusive of those who are unable to access remote services and make adaptations for access.

Ensure datasets are complete and timely - continue to improve the collection and recording of ethnicity data across primary care, Outpatients, A&E, Mental Health, Community and Specialist Services.

Accelerate Prevention - ongoing management of long term conditions, annual checks for people with Learning Disabilities and Serious Mental Illness, implement CoC for at least 35% of BAME women.

Strengthen leadership & accountability - systems and providers should have a named Executive Board level lead for tackling Health Inequalities and should access training from Region.

Core20PLUS5 Improvement Programme

The Core20PLUS5 approach is designed to support Integrated Care Systems to drive targeted action in health inequalities improvement. The target population is the most deprived 20% of the population as identified by the index of Multiple Deprivation PLUS our local ICS chosen population groups experiencing poorer than average health access, experience and/or outcomes, who may not be captured within the Core20 alone and would benefit from a tailored health care approach. The National 5 Clinical Priorities are early cancer diagnosis, Serious Mental Health Illness, Maternity, Chronic Respiratory Disease, Hypertension case finding.

In SWL the Core20 population has been identified using PHM as a tool as a population of 340,000, further detailed analysis has taken place to understand their specific health care needs, barriers, locations, ethnicities and other wider demographics. The SWL PLUS population group is focused on improving outcomes for Black and ethnic minority populations specifically in Croydon. The National 5 Clinical Priorities has been expanded to also include diabetes and work has taken place to implement and achieve outcomes thorough the development of plans and targets.

The Core20PLUS Connectors Programme is a funded initiative to support focused action across Integrated Care Systems to impact on the goals of Core20PLUS5 by developing and supporting community-based roles, acting as a voice to focus on barriers and enablers to reduce health inequalities and connect people with decision makers, SWL has recently secured funding as part Wave 1 of this Programme.

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Targeting our Population to improve health outcomes

In SWL, we want far reaching benefits for our local communities, specifically those with poorer outcomes *(i.e. those who may not feature in our Core20 as they may not be known to health or care services)* whether it's better access, experience, and outcomes for health, or creating employment opportunities, to raising aspirations and local skills. As part of our medium to long term priorities aligned to Health and Care Place plans, our focus areas include:

- **Race and health**: Implementing recommendations from the NHS Observatory Report for ethnic minority communities, homeless and rough sleeping communities, gypsies and traveller communities, asylum seekers, refugees, and other protected characterized communities
- **Equality, Diversity and Inclusion for our Staff**: We will develop our quality, diversity, and inclusion strategy for our staff
- **Anchor Institutions & Strengthening Communities Programme**: Economic development and environmental sustainability at the core of tacking socio-economic health inequalities
- **Develop and build capacity and capability in our VSCE organisations** to enable proactive co-production with our communities and people with lived experiences

Priorities for Children and Young People (CYP) and how we are linking to the Strengthening Communities Programme and Local Authorities

A core commitment and priority for the SWL CYP Board is to tackle inequalities of access, experience and outcomes for our local children and young people. Some key priorities we are looking to deliver in 2022/23 include:

- Undertake a mapping analysis for our neurodevelopment/ASD CYP population, with an aim to implement innovative pilots to support better and timelier diagnostics and support for service user and their families.
- Aligning to the Anchor Institution programme, our plan is working with LA partners to establish opportunities for our care leavers to have employment opportunities in the NHS. Kingston and STG Hospital are supporting these initiatives.
- Tackling inequity in Special Educational Needs and Disability (SEND), Complex Care and Transitions is a priority across SWL - each borough is working on their written statement of action.

Secure Data Environments

A Secure Data Environment is the term for a platform that provides users access to data with appropriate security protocols that
1) can be used to store data (the 'data layer') or
2) which can be accessed to analyse data without that data exiting the environment (the 'analytical layer').

This includes Trusted Research Environments (TREs) which are utilised for research activities, and Operational Data Environments (ODEs) which are utilised by NHS analysts, and at times broader government analysts, for operational insights and planning purposes. Regardless of function, SDEs are usually not singular units, and will be made up of components including:

- Infrastructure & hosting: the computing power, network usage, and storage that is leveraged.
- Platforms & applications: analytical and data management tools; utilisation of/ communication with external platforms e.g. GitHub.
- Data & data exchange: data storage in lakes and warehouses, as well as data streams from EHRs and person generated sources (e.g. wearables).

These components may be delivered by multiple providers, some of whom might supply more than one aspect of the SDE e.g. a vendor may provide both cloud hosting and an analytical platform.

SDEs should utilise common software (particularly at a system level) and platforms/tools (with understanding that specialist capability may at times be required), with no 'workarounds' leveraged or deployment of inappropriate software patterns. They should be built upon open principles and standards, for software interoperability, data and document formats.

There should also be transparency of SDEs security and design approach, with this information included in the data controller/ deploying organisation's Data Protection Impact Assessment and made publicly available for data subjects, without posing a risk to their integrity.

7. Research

See SWL Linked Development Needs section of the plan which describes both the context and the recommended approach.

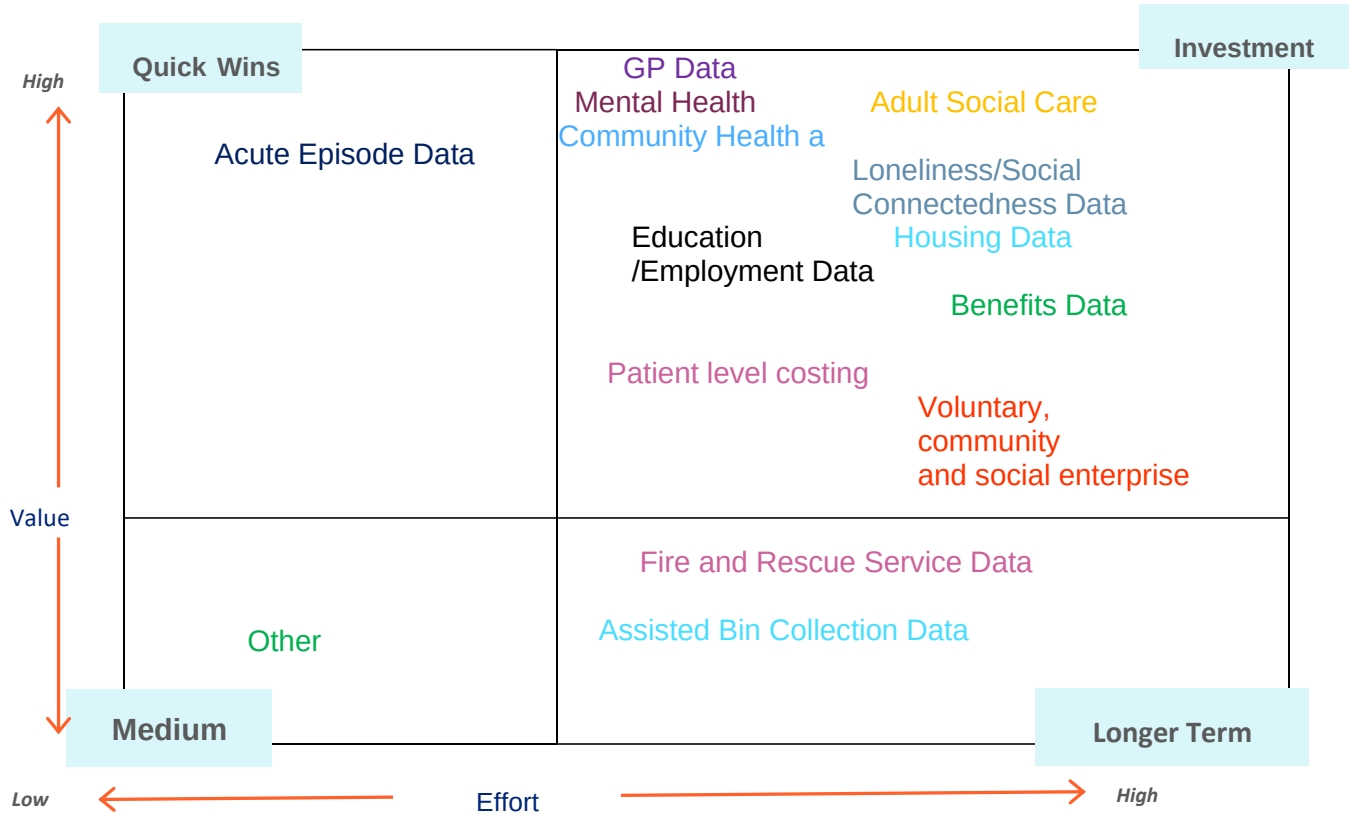
Population Health Research Institute (PHRI) St George's University of London

Following on from this section, a particular area of interest for St George's University PHRI is the prevention of cardiovascular disease and type 2 diabetes, which is closely linked with NIHR Applied Research Collaboration South London, a collaboration between NHS Foundation Trusts, Academic networks, and Universities in South London (including both St George's University Hospitals NHS Foundation Trust and St George's, University of London), which has the strongly aligned vision of improving lives and the quality of health and social care in South London through applied research.

Other specialist areas include the epidemiology and prevention of asthma and food allergies, chronic conditions over the life course (including child health and ageing; the latter is particularly relevant with increased life expectancy and associated co-morbidities), as well as health and health care research (including primary care and mental health), and examining key determinants of disease, including physical activity, diet and nutrition, smoking, environment, inequalities in health, especially social and ethnic inequalities (which is particularly relevant given the ethnic diversity of the South West London population). A further understanding of the role of these determinants within the local population, will provide opportunities and inform strategies for upstream prevention.

8. PHM Stocktake Outputs

Data Prioritisation Matrix – output from Analytics Action Learning Set exercise ranking and prioritising types of data currently available helping to identify the types of data to focus on in the medium/long term and identification of quick wins.

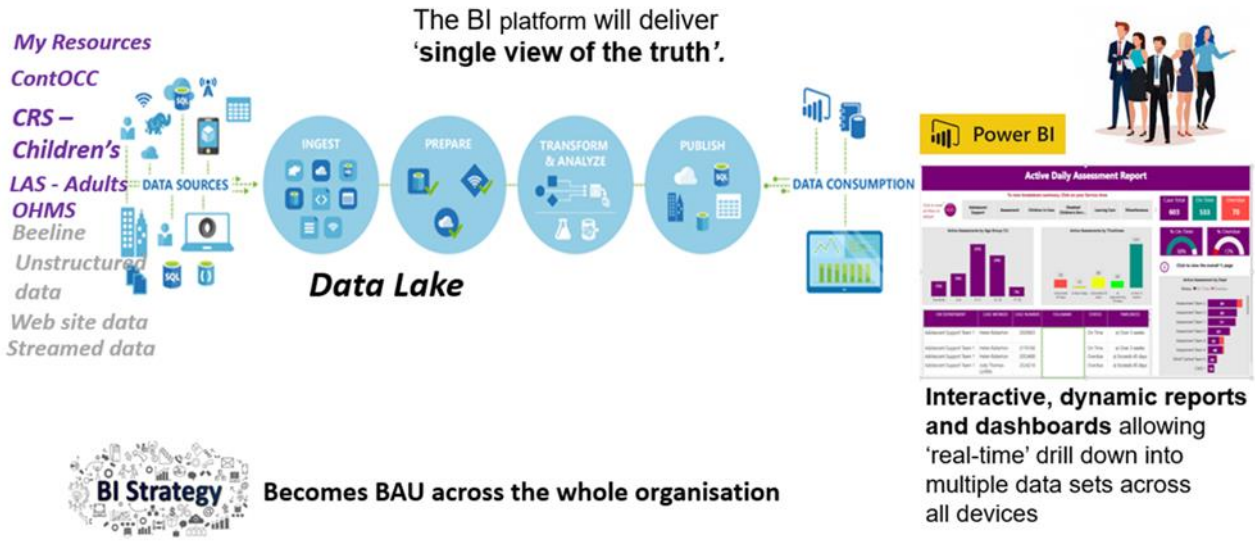


9. Place

Each of our boroughs is different and has developed their own approach to building their analytical capability, which has largely relied on non-health data. All our Local Authorities either use Microsoft PowerBI or a Google platform. The following information is from an initial workshop and identifies SWL Boroughs' priorities and potential uses for PHM and data, and how they say they need to develop including what they might need from the SWL ICS.

Croydon

Business Intelligence Platform



Kingston

Public Health Insight and Data

- Ensuring that data is used to identify our priorities and underpin provision of services
- Needs Assessments (including the 'Joint Strategic Needs Assessment', 'Pharmaceutical Needs Assessment', data for strategic plans including Kingston Health & Care Plan and others)
- Currently creating a dashboard of core metrics for regular review which will help identify areas where deeper dives are required
- Kingston Data Site, signposting to key data releases (with a particular emphasis on utilising upcoming Census data) and supporting staff to use available tools e.g. Fingertips, SWL SharePoint

- Building on the use of data and relationships built with key services and partners during the pandemic
- PHM: Roadmap to integrating health and social care data, seeing the route of a 'resident' (vs a council or NHS service user), use to refine and enhance local service design and communications.

Merton

- Small Public Health Intelligence Team (two permanent full time, two COVID interims), other teams dealing with relevant data e.g. adult social care, children's social care data
- SWL past work to explore integrated health and social care record – needs to be revisited for Merton and consider linkages with PHM
- Use of PowerBI now developing including for service and population data
- Analyst Network, Merton data hub and use of GIS across the council
- Insights to intervention project developing internal data linkage and eventually plans to develop external linkage
- Currently benchmarking our data maturity across the council – learning from internal and external interviews
- Wide range of data assets – examples include housing (e.g. stock condition) and benefits
- Links to other stakeholders who hold additional datasets (e.g. housing providers)
- Priorities – improving JSNA process, increasing data automation and linkage including PowerBI, embedding PHM skills, cross council data for strategy delivery and monitoring

Sutton

Public Health has a priority to collaborate with Sutton Place and Primary Care on small but scalable projects that can support them to see the potential of using their data more strategically to prioritise resources at those most at risk.

As part of this work we have:

- Worked with the CSU to look at health data for the PCN and explored the possibility of access to this data for our Public Health Analyst
- Currently work is focused exclusively around EMIS so that clinicians have actionable insights
- Other work involving linked data is more difficult as held by other teams
- The next phase will follow a similar approach but with more sophisticated data searches
- Using data to make links to social prescribing, National Diabetes Prevention Programme, Weight management referrals
- Linked in with Wave 3 PHM Development programme in Sutton Place.

In house:
- Public Health has made the case for LIFT software bringing together a range of welfare and housing datasets to identify a number of poverty indicators - including people at risk of homelessness or eligible for benefits including free school meals.
- Our Health Visiting and School Nursing teams are moving to EMIS to come in line with primary care and community services, which will help with PHM approaches
- A programme of work led by Hitachi.

Substantial work and investment in summary care records in Sutton Place would provide lots of learning that could be applied to PHM approaches. Some of the further support for Sutton include the following

- Helping to provide better/wider access to Health Insights, including access to the backend data for at least one of our Public Health Analysts.
- Helping to unblock barriers we come across from parts of the system not working together enough to deliver for our residents.
- Helping to create/maintain a forum for sharing best practices, innovative ideas and impactful projects.

Richmond and Wandsworth

(Insight and Analytics Team Richmond and Wandsworth Councils)

Journey to the Data & Analytics Strategy

Moving away from data as an afterthought to support decisions, and towards using data from the outset to:

- inform service planning and delivery
- base decisions on the strongest analysis
- use data-driven technology to transform the way we work

Consequences of not using our data well: inefficiencies, not reaching the right people with the right services, decision based on incomplete information.

Colleagues telling us their issues – data quality, inconsistent data collection and storage, more skills needed.

Impact of Covid and lessons learnt.

Key features

- Focus on deliverable actions
- 2 years of work to build momentum for change to ensure Strategy and Action Plan stick
- Building strong foundations
- Consistent growth across the organisation
- Not written by analysts
- Owned by all – data is everyone's business

Strong support from political leaders and senior managers

Comprehensive consultation process to ensure the views of staff across the organisation were reflected in the strategy

Richmond

Fix the plumbing

Easier access to high quality data to enable linkages and development of digital solutions
Software and cloud infrastructure needed to support analytics and data science

Security and Privacy

Robust data management and governance to keep residents data secure and ensure it's use is legal and ethical

Training

Equip the staff with skills needed for advance analysis using schemes such as data science apprenticeship

Wandsworth

Wandsworth Council Data & Analytics Strategy

We will be a **local government leader in data and analytics**, who by making **data integral to all we do**, delivers **excellent customer experience** and **innovative, value-for-money services**.

WORKSTREAMS

- Strong data foundations
- Use advance analytics
- Data availability and accessibility
- Technology and infrastructure
- Collaborative analyses and skilled workforce
- Robust data management and governance

www.wandsworth.gov.uk

Wandsworth

- Similar action plan to be delivered across both boroughs

10. PCN Directed Enhanced Service Specification for PHM

5.4. Data, analytics and monitoring

5.4.1. A PCN must share non-clinical data between its members in certain circumstances. The data to be shared is the data required to: a. support understanding and analysis of the population's needs; b. support service delivery in line with local commissioner objectives; and c. support compliance with the requirements of this Network Contract DES specification.

5.4.2. A PCN must determine appropriate timeframes for sharing of this data.

5.4.3. Where the functionality is available, a PCN should ensure that clinical data sharing for service delivery uses read/write access, so that relevant workforce from any practice can refer, order tests and prescribe electronically, and maintain a contemporaneous record for every patient.

5.4.4. A PCN must:

a. benchmark and identify opportunities for improvement;

b. identify variation in access, service delivery or gaps in population groups with highest needs; and

c. review capacity and demand management across the PCN, including sharing appointment data for the PCN to action (this could be achieved through using the GP workload tool or other similar tools), and the PCN must monitor, share and aggregate relevant data across the Core Network Practices to enable it to carry out these requirements.

5.4.5. A commissioner and the wider system may support PCNs in the analysis of data.

8.7. Tackling Neighbourhood Health Inequalities

8.7.1. From 1 October 2021, a PCN must:

a. identify and include all patients with a learning disability on the learning disability register, and make all reasonable efforts to deliver an annual learning disability health check and health action plan for at least 75% of these patients who are aged over 14;

b. identify and include all patients with a severe mental illness on the severe mental illness register, and make all reasonable efforts to deliver comprehensive physical health checks for at least 60% of these patients;

c. record the ethnicity of all patients registered with the PCN (or record that the patient has chosen not to provide their ethnicity); and

d. appoint a lead for tackling health inequalities within the PCN.

8.7.2. By 31 December 2021, a PCN and commissioner must jointly:
a. utilise available data on health inequalities to identify a population within the PCN experiencing inequality in health provision and/or outcomes, working in partnership with their ICS, including local medical or pharmaceutical committees, and local authority commissioners.
b. hold discussions with local system partner organisations who have existing relationships with the selected population to agree an approach to engagement.
c. begin engagement with the selected population to understand the gaps in, and barriers to their care; and
d. define an approach for identifying and addressing the unmet needs of this population.
8.7.3. By 28 February 2022, a PCN must finalise its plan to tackle the unmet needs of the selected population, which should include:
a. locally defined measures agreed with local commissioners in line with, and co-ordinated between, wider system strategies to tackle drivers of inequalities;
b. delivery of relevant interventions or referrals to services that provide these interventions for the selected population; and
c. ongoing engagement with the selected population.
8.7.4. By 1 March 2022, the PCN must proceed to deliver the plan referred to in section 8.7.3

11. SWL PHM Budget

The budget proposal below is an indicative 2022/23 budget. The second table is the indicative budget for future years. The budgets will need to be properly scrutinised and approved through the ICS system governance before they can be confirmed.

DRAFT SWL ICS Population Health Management Budget 2022/23							
		Initial Proposal From Digital Investment Plan				Updated Proposal May 2023	Difference
Recommendation	Description	Agreed funding	Digital budget submission capital 22/23	Digital budget submission revenue 22/23	Digital budget submission recurrent revenue (incl 22/23)	Development plan proposed spend 22/23	Cost/saving for 22/23
		£000's	£000's	£000's	£000's	**£000's**	£000's
PHM Team	Clinical leads	18				**79**	61
	Head of PHM (Band 8c)	102				**102**	0
	PHM Support (Band 6)	55				**55**	0
Culture & Behaviour	PHM system development & training					**100**	100
Sharing & Supporting Best Practice	Training for PCNs, leads & champions					**25**	25
Set up	Set-up & maintenance of PHM library and website					**10**	10
PHM Platform	Supplier costs (8 data connections, Cerner licenses)		543		842	**0**	-1,386
	Implementation & transformation			252		**0**	-252
	Resource to maintain				142	**0**	-142
	Options appraisal consultancy support					**50**	50
PHM Analytics	19 Analysts (band 8a)				1,246	**146**	-1,100
	Analytics training and development of tool					**50**	50
TOTAL		**175**	**543**	**252**	**2,230**	**617**	**-2,583**

DRAFT SWL ICS Population Health Management Budget Future Years				
Recommendation	**Description**	**Digital budget submission recurrent revenue (incl 22/23)**	**Development plan proposed recurrent spend**	**Comment**
		£000's	**£000's**	
PHM Team	**Clinical leads**		**79**	This would need to be included in future years' budgets
	Head of PHM		**102**	Currently secondment so would need to be included in future years' budgets
	PHM Support		**55**	Currently secondment so would need to be included in future years' budgets
Culture & Behaviour	**PHM system development & training**		**25**	
Sharing & Supporting Best Practice	**Training for PCNs, leads & champions**		**25**	
Set up	**Set-up & maintenance of PHM library and website**		**2**	
PHM Platform	**Supplier costs (8 data connections, Cerner licenses)**	**842**	**TBC**	This depends on an options appraisal
	Implementation & transformation		**TBC**	
	Resource to maintain	**142**	**TBC**	
	Options appraisal consultancy support		**0**	
PHM Analytics	**19 Analysts (band 8a)**	**1,246**	**1,246**	Recurrent costs would gradually increase to this level over subsequent years as PCNs come on board and analysts are recruited
	Analytics training		**25**	
Non-pay			**3**	
TOTAL		**2,230**	**1,562**	To note most of this cost is analytics