

Development of a Population Health Management approach in DIHC and Dudley place

1. Introduction

Population health management (PHM) is an emerging technique which strives to improve health outcomes and (importantly) reduce inequalities. A key element is the use of data to design new models of proactive care and deliver improvements in health and wellbeing which make best use of the collective resources. It relies on understanding and insight into what factors are driving poor outcomes and to be successful requires both partnership working and cultural alignment. Key tools and techniques include case-finding, risk stratification and population segmentation. These are important to take the focus from a population level to interventions which target individual patients and allow a tailored approach.

Successful PHM will require a collective societal effort to tackle the wider determinants of health and from this perspective we need to be mindful of our limitations if we focus solely on healthcare provision. See figure 1 which summarises the wider determinants of health – “the causes of the causes.” This means we should embrace the opportunities presented through redesigning our clinical model and align our perspective at both a patient-facing level and a strategic one. This will involve our continued and extended focus on lifestyle, social inclusion, health literacy and patient self-care and activation. Where wider determinants are beyond our control, we should challenge our local partners to address health improvement in their planning processes. DIHC can play a key role in PHM in Dudley in three ways:

- **Do** – We develop and redesign our directly provided services using PHM principles.
- **Lead** – We engage with other stakeholders to help us plan and deliver services and interventions to improve the health of our population.
- **Support** – We support other stakeholders to plan and deliver interventions.
- **Influence** – We influence others to improve the health of our population by addressing those wider determinants of health which are not under our direct control.

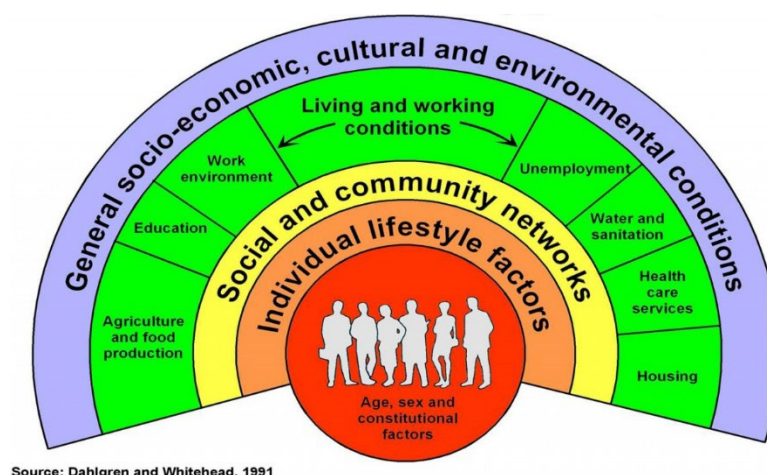


Figure 1. The wider determinants of health

Appendix 1 provides a high-level insight into the health status of the Dudley population. There is a gap in both healthy life expectancy and life expectancy between Dudley and England and between deprived and affluent areas of the borough. The latter is more significant and is a symptom of a mixed population of deprived and affluent. The main reasons for differences in life expectancy are deaths due to cancer, circulatory disorders (this includes cardiovascular and diabetes), respiratory disease and COVID-19.¹ Essentially, populations in deprived areas of the Borough have both a shorter life expectancy and spend more years of life in poor health. This in turn places greater demand on health services and emphasises the importance of PHM.

This paper has been written to provide a position statement of PHM within DIHC. It provides a summary of achievements to date, our aspirations for developing PHM in Dudley, proposed priority areas for PHM and a top-line development plan.

2. Achievements in population health management to date

Dudley has a strong foundation in PHM, with the DIHC Pharmaceutical Public Health team having been recognised nationally for achievements in hypertension and atrial fibrillation (AF) detection and management. A link to the hypertension case study published by NICE is provided in appendix 2. More recently work on the vaccination programme has given us valuable experience in PHM. Early in the COVID-19 vaccination programme, the Pharmaceutical Public Health Team worked with analysts at DMBC to develop a surveillance methodology which allowed assessment of uptake by geography/deprivation and by ethnicity. Useful experience was gained through working effectively as a place (DIHC, PCNs, Public Health and the wider DMBC, voluntary sector, not for profit organisations and local communities). This provides a robust foundation for developing PHM further.

The prevention agenda is being developed with the introduction of health coaches into the PCN based teams and a continued focus on social prescribing aims to address factors such as social isolation.

Other early steps have been made in developing a PHM approach in specific specialty areas such as respiratory, diabetes, end-of-life care and frailty.

3. Developing Population Health Management in Dudley

a. A common set of outcomes

An original aim of reforming health and care in Dudley through service integration was to improve the health of the population. This was driven by widening health inequalities, an aging population placing increasing demands on all services and the reality that traditional models of health and social care would become unsustainable. It was seen as critical that all stakeholders were working to a common set of outcomes and a comprehensive Health Outcomes Framework was developed (see appendix 4). This underwent extensive stakeholder Consultation. The expectation was that this framework would be the main focus of PHM activities in Dudley place. Contained within the framework is the Dudley Quality Outcomes Framework for Health (DQOFH) which is incorporated into the integration agreement between DIHC and Dudley practices. It provides a financial incentive

¹ The reasons for the gap in healthy life expectancy are likely to be similar but may include disabilities such as musculoskeletal conditions. This merits further investigation.

framework for long term conditions management as an alternative to the Quality and Outcomes Framework (QOF) which is part of the national General Medical Services Contract between NHS England and GP practices. An important aspect of the Health Outcomes Framework is that the healthy life expectancy was positioned as the most important outcome, followed by slope index in healthy life expectancy.² For healthcare, this recognises an important shift in focus from activity and process-based metrics, to include high level population health status.

The Health Outcomes Framework has recently been re-endorsed by the Partnership Board, with the caveat that it is refreshed to ensure metrics and outcomes are still relevant. There are also concerns that there are too many outcomes and that a prioritisation exercise should be undertaken.

b. Developing the philosophy and culture

The focus on outcomes should drive most of our decision making. The case for service developments should be based on evidence for improving priority outcomes and the cost of each unit of improvement. Quality improvement methodology should drive the continual refinement of services over time to maximise the impact on patient outcomes. In order to tackle and not widen health inequalities we should extend our clinical audit and service review scope to include health equity.

To achieve these objectives, the DIHC will need to embrace population health management at all levels in order to drive a cultural change. With respect to resource allocation, an ethical approach based on proportionate universalism (the Marmot principle) should be adopted. This will require a shift from a crude capitation-based approach to resource allocation to one where greater resource is directed towards more disadvantaged populations. This may be at odds with the funding of PCNs and our provision of the centrally funded workforce (the ARRS roles) and may require considered negotiation. Programme based budgeting should be explored as a vehicle for redistributing resources within a programme of care (and between organisations where desirable), for example to shift from low value treatment interventions to higher value prevention.

Finally, DIHC (and partners) should embrace being held to account for improving outcomes at all levels of the local system. With this accountability should come the permission to challenge external partners to improve health and wellbeing, for example, housing conditions, the built environment, air quality and school meals.

c. Population Health Management and the evolving clinical model

The recent Capgemini ASE events have established a direction of travel for designing and refining the clinical model for integrated care. There was universal support for the PHM approach to optimising patient care which endorses rather than modifies existing ideas and plans. A key requirement of the ongoing work on the clinical model will be the juxta-positioning of DQOFH with the activities of ICTs and embedding PHM approach within this. A description of how PHM could apply to the clinical model is provided in appendix 5.

d. The role of DIHC

As an integrated care provider DIHC has a remit for service redesign (the devolved commissioner function) as well as a service provider. The Trust's contribution to this can be summarised under four headings:

² Slope index is the difference in life expectancy between the most and least deprived areas in the borough.

- As a direct provider of services – for example, the pharmacy team which has a track record of achievement in PHM and the ARRS roles such as social prescribers and health coaches which play a key part in improving health and wellbeing outcomes in our population.
- As a provider of Primary care services – High Oak and Chapel Street.
- As a commissioner of services – for example mental health, end-of-life, older persons and the Pharmacy team oversight of primary care prescribing.
- As a system leader with an influence on the wider determinants of health.

As a commissioner and provider of key services, DIHC is both flexible and nimble in the approach to service design, delivery and quality improvement, allowing a focus on what we achieve and not only on what we do.

Any plans will need to complement those by other stakeholders where necessary to ensure a consistent approach and to avoid duplication of effort. Stakeholders include the voluntary sector, the ICS and especially those of DMBC and the Public Health Team. This is particularly relevant to impacting on the wider determinants of health.

4. Proposed priorities for PHM in Dudley

a. Priority populations and conditions

The main reasons for differences in life expectancy are deaths due to cancer, circulatory disorders (this includes cardiovascular and diabetes), respiratory disease and COVID-19³. These are 4 areas which should form the foundation of a population health management (PHM) plan, with the dual aim of improving health outcomes for the population overall but impacting to a greater extent on deprived areas. Other proposed priorities based on national policy and local health needs are summarised in figure 2. With respect to health inequalities, the Partnership Board has identified First 1001 days and hypertension detection as priority areas. Other areas of focus for DIHC and partners are also proposed. A summary of the proposed priorities and objectives is provided in appendix 3.

b. Priorities for developing the infrastructure for PHM in Dudley

A common feature of successful PHM and integrated care worldwide is that services are patient-centred and data-driven. There are a number of key requirements:

- Business intelligence (BI) – this is required at 3 different levels:
 - Operational – case finding, risk stratification and segmentation, usually as real-time snapshots.
 - Quality improvement – metrics and dashboards which provide services and clinical communities with performance data, refreshed regularly to provide timely feedback on quality improvement initiatives.
 - Population surveillance – higher level metrics which provide a track of overall progress against, for example healthy life expectancy. These also provide early insight into health issues within the population. This also includes the wider determinants of health.

³ The reasons for the gap in healthy life expectancy are likely to be similar but may include disabilities such as musculoskeletal conditions. This merits further investigation.

- Public health intelligence – The BI challenge goes beyond making data visible. Health data is extremely complex and requires expert analysis and interpretation. Further expertise is required to carry out ad-hoc analyses.
- Programme management – PHM is a cross-cutting programme which potentially impacts on all of Dudley health and care services. The outcomes of interest are numerous and wide-ranging. Programme management expertise is required to co-ordinate, track and report progress of PHM going forward.

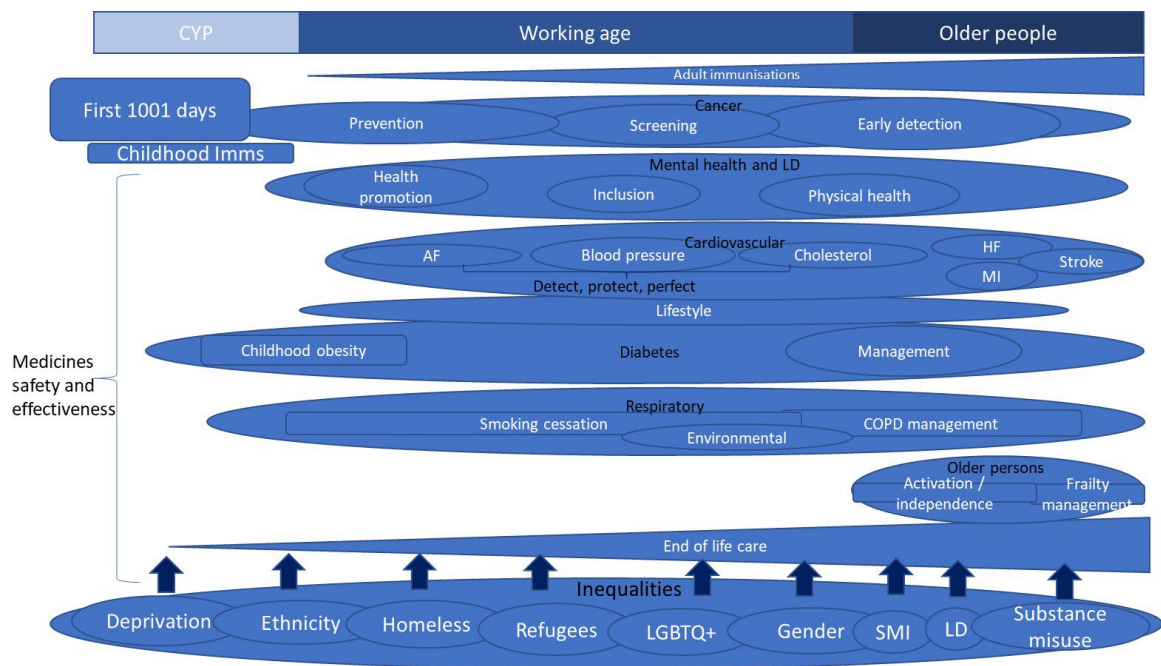


Figure 2. Proposed PHM priorities for Dudley

The resources required to achieve the above have yet to be fully quantified. The local BI requirements will depend on the ICB offer to providers and places. Programme management support could be provided centrally for Dudley place, be organisation-based or be diffused throughout clinical services. An assessment of these requirements is needed with some urgency.

c. Proposed governance arrangements

It is proposed that governance for PHM in Dudley is provided by the Dudley Partnership Board. This will ensure that all commissioning and provider bodies, including DMBC have a stake and voice in developing this ongoing programme. The Board already has ownership of prioritised health inequalities. At the recent ASE event it was proposed that Dudley also requires a prevention board – this could either sit alongside a PHM committee or be included in its terms of reference.

5. Next steps – a top-line action plan

DIHC in partnership with DMBC Public Health have been asked to conduct a refresh of the Health Outcomes Framework to confirm components are still relevant and accessible and to review the volume of outcomes and metrics, to prioritise against need and capacity. A key part of this process

will be a consideration of the timelines required to observe changes in population health outcomes – in other words the staging of PHM activities. This activity will be undertaken through a combination of technical assessment and stakeholder consultation. The proposed priorities will provide a starting point to develop a series of more detailed plans which are owned by stakeholders (clinicians and wider stakeholders). An important part of this exercise will be to identify priorities for restoration and recovery in the tail of the pandemic.

At the same time, discussions will be undertaken to establish a committee structure for PHM. A final part of this work will be to undertake an assessment of the infrastructure and resource requirements for place-based PHM, including IT, analytics, business intelligence and programme management. A summary of the actions and timescales is provided in table 1.

Action	Timescale
1. Agree proposed governance arrangements with Partnership Board	By September 2022
2. Review and update Outcomes Framework through stakeholder engagement.	By December 2022
3. Review priority areas within PHM programme through stakeholder engagement.	By December 2022
4. Assess local infrastructure and resource requirements.	By December 2022

Table 1. Actions and timescales for PHM action plan

6. Request from DIHC board

DIHC board is asked to note the progress that has been made in PHM and the plans to contribute to the place-based delivery of PHM in Dudley.

Dr Duncan Jenkins

Clinical Divisional Director, Pharmacy and Population Health Management

Dudley Integrated Health and Care NHS Trust

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Appendix 1 – Life expectancy and healthy life expectancy in Dudley

Figure 3 shows recent trends in healthy life expectancy⁴ for the Dudley resident population compared with that of the population of England and Figure 4 shows recent trends in life expectancy at birth. Similar to the national picture, female life expectancy is longer than that of males. However, there is less difference in healthy life expectancy between males and females, meaning that women experience more life years in poor health than men. Also of note is the impact of the COVID-19 pandemic on life expectancy, with a pronounced dip in the most recent 3-year period reported.

Inequalities in life expectancy across Dudley Borough remain a concern. Figure 5 shows life expectancy versus deprivation by electoral ward. There is a clear relationship with people in deprived areas having a shorter life expectancy than those in affluent areas. Figure 6 shows trends in slope index of life expectancy,⁵ with a gap in life expectancy of around 8 to 9 years. Over recent years there has been a reduction in slope index of life expectancy relative to the England population for Dudley Males, though there has been an increase in this gap for Dudley females. A further feature of inequalities data is that slope index of healthy life expectancy for Dudley (not shown) is around twice that for life expectancy, meaning that in deprived areas people are both living shorter lives and living more years in poor health.

The reasons for the gap in life expectancy within the Borough are summarised in figure 7. There are 4 main causes of death - cancer, circulatory disease, respiratory disease and COVID-19 - that contribute to the life expectancy gap.⁶ For DIHC, these are 4 areas which should form the foundation of a population health management (PHM) plan, with the dual aim of improving health outcomes for the population overall but impacting to a greater extent on deprived areas.

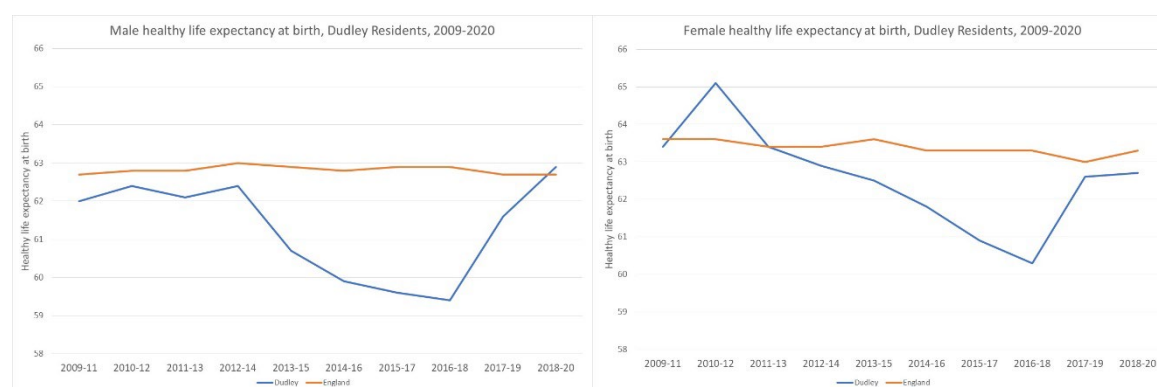


Figure 3. Trend in healthy life expectancy at birth.

⁴ The average number of years that an individual is expected to live in a state of self-assessed good or very good health, based on current mortality rates and prevalence of good or very good health.

⁵ Slope index is the difference in life expectancy between the most and least deprived areas in the borough.

⁶ The reasons for the gap in healthy life expectancy are likely to be similar but may include disabilities such as musculoskeletal conditions. This merits further investigation.

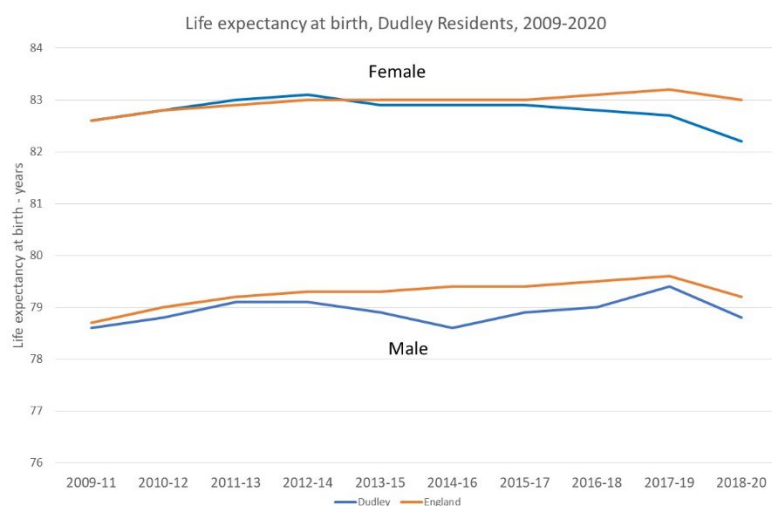


Figure 4. Trend in life expectancy at birth

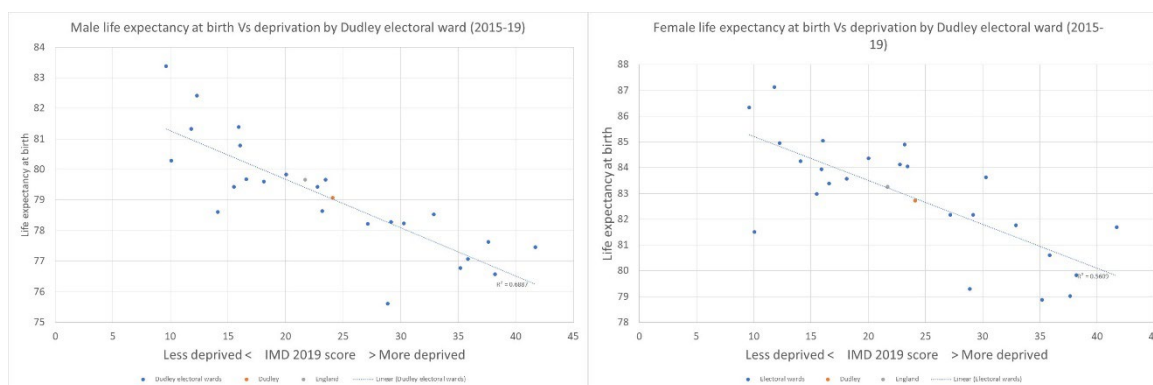


Figure 5. Life expectancy versus deprivation by electoral ward.

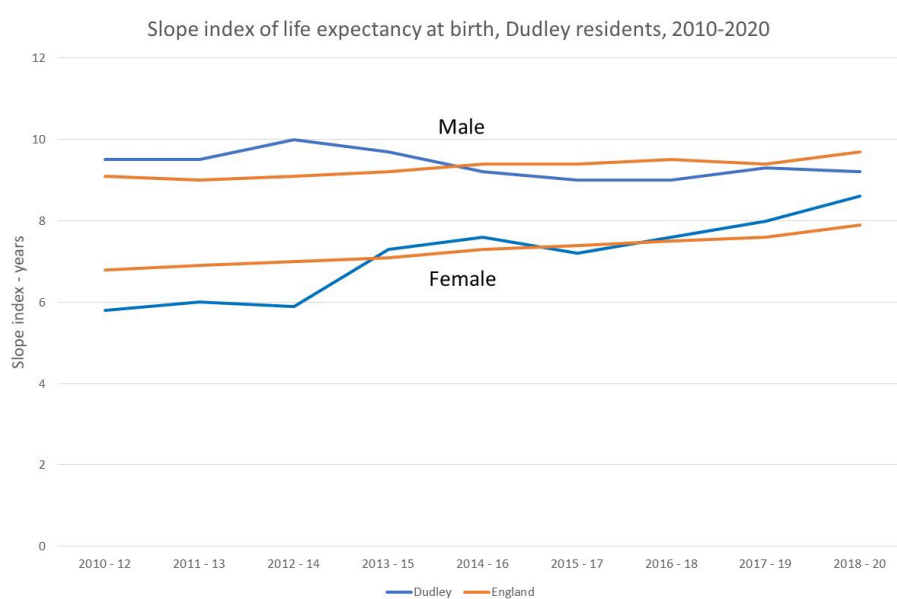


Figure 6: Trend in slope index of life expectancy

Breakdown of the life expectancy gap between the most and least deprived quintiles of Dudley by cause of death, 2020 to 2021 (Provisional)

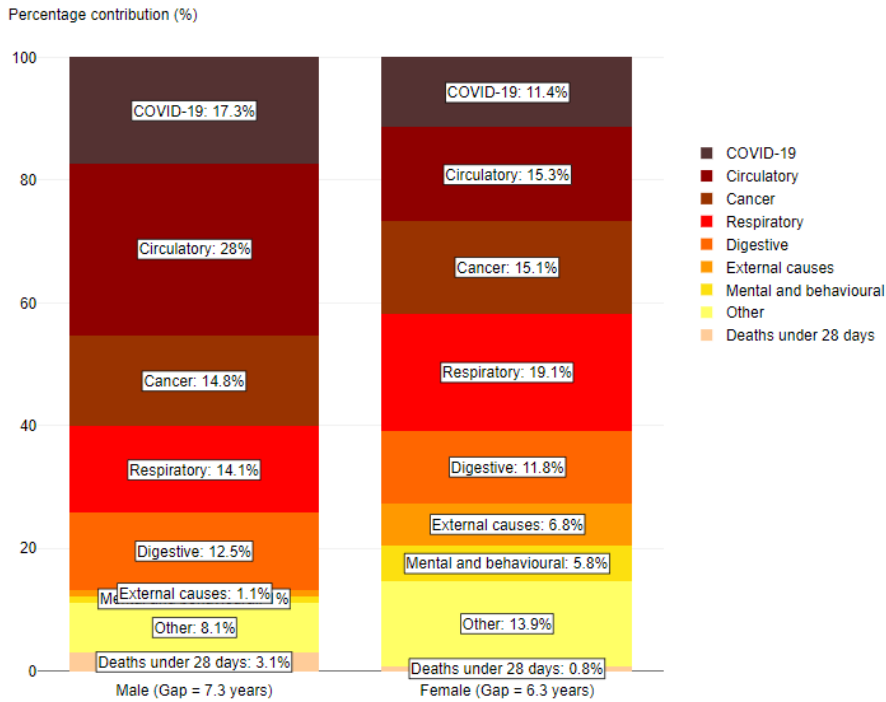


Figure 7. Scarf chart showing breakdown of life expectancy gap within Dudley by cause of death 2020/21 (provisional data) Source: Office for Health Improvement and Disparities.

Appendix 2 – Dudley Hypertension case study

This link provides access to a case study published by NICE.

[Implementing NICE Guidelines to reduce inequalities and improve the healthy life expectancy of the population of Dudley – Optimising Hypertension management in Dudley | NICE](#)

Work has continued to detect and diagnose hypertension, with the pharmacy team playing a key role. Figure 8 shows that Dudley has second highest ratio of observed to detected hypertension in England.

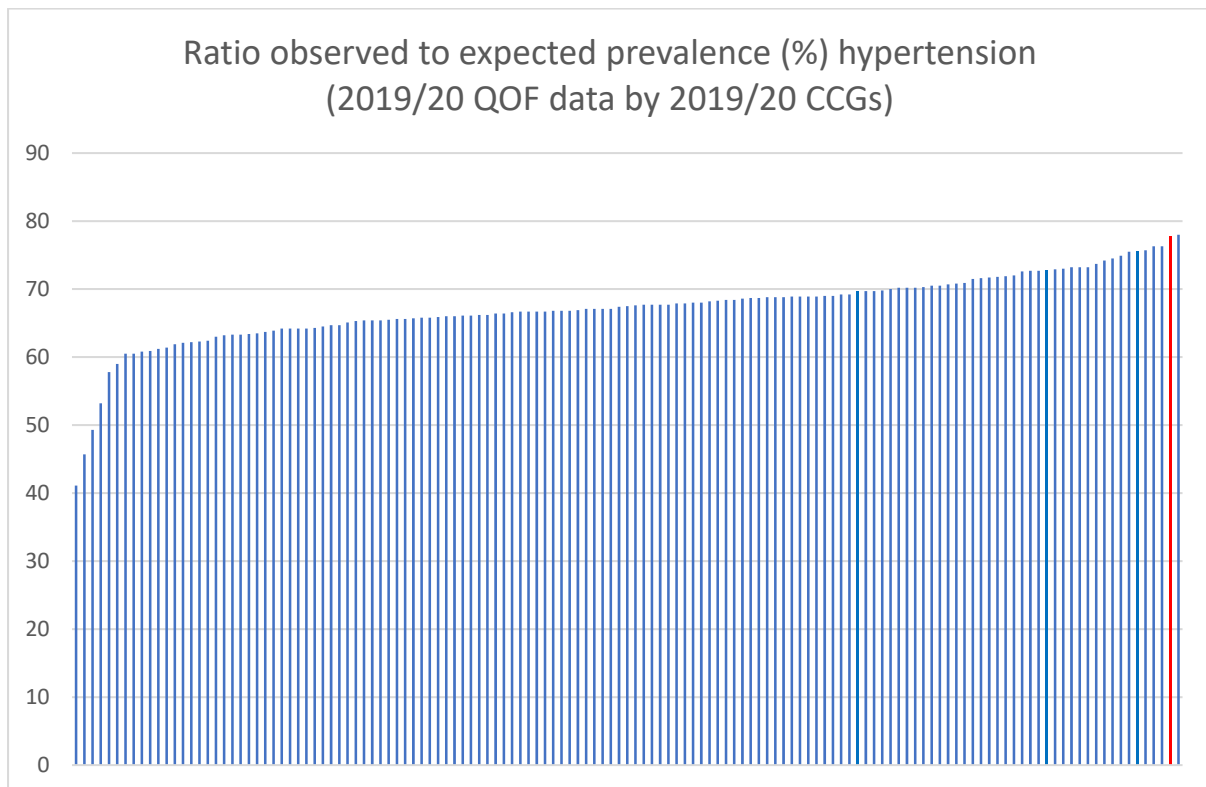


Figure 8. Ratio observed to expected prevalence by 2019/20 CCG (Dudley CCG is red bar)

Appendix 3 - Proposed priority areas for population health management

Programme or target population	Proposed priorities for PHM
First 1001 days – runs from conception and through the first 2 years of life. Identified as a priority for Dudley Place by the Partnership Board.	<ul style="list-style-type: none"> • Identification of individuals in populations at risk of adverse childhood experiences (ACEs). These are shown to have a strong influence of health and wellbeing later in life. Interventions are currently being designed but are likely to include support for parenting skills and focused interventions to address mental health issues.
Childhood immunisations	<ul style="list-style-type: none"> • Increase and maintain vaccination rates which have dipped over pandemic.
Adult immunisations	<ul style="list-style-type: none"> • Support for continued COVID-19 and 'flu vaccination programmes, including targeted work with deprived and hesitant communities.
Lifestyle and wellbeing	<ul style="list-style-type: none"> • Build on provision of social prescribing, health coaching. • Utilise MECC and ensure co-ordinated and consistent approach. • Ensure joined up approach with DMBC Public Health. • Align DIHC communications and health promotion campaigns to the Health Outcomes Framework.
Mental health	<ul style="list-style-type: none"> • Increase number of patients with severe mental illness receiving annual health checks. • Improve management / prevention of type 2 diabetes in patients with diagnosis of schizophrenia. Prevalence of type 2 diabetes in 15% in this population compared to 7% in general population. • Continued improvement in mental wellbeing support for those with long term physical health conditions.
Cancer	<ul style="list-style-type: none"> • Scoping work to identify opportunities to prevent, detect earlier and increase screening uptake.
Cardiovascular disease	<ul style="list-style-type: none"> • Improve hypertension detection (a priority for Partnership Board) and management to reach 80:80 target (80% of patients identified, 80% treated to target). • Improve atrial fibrillation detection and management. • Implement NHS England cholesterol pathway and PHM programme.
Respiratory	<ul style="list-style-type: none"> • Develop data driven approach to respiratory ICTs and improve on management metrics.
Frail elderly	<ul style="list-style-type: none"> • Further develop population risk stratification, including identification of patients at high risk of developing frailty.
Diabetes	<ul style="list-style-type: none"> • Develop data driven approach to diabetes ICTs and improve management metrics.
End of life care	<ul style="list-style-type: none"> • Further develop use of metrics. • Improve care planning (advanced care plans, treatment escalation and Respect).
Inequalities	<ul style="list-style-type: none"> • Adoption of Core20PLUS5. • Focussed work to improve care of people with LD, substance misuse clients, homeless, refugees and LGBTQ+. • Scope gender inequalities, particularly deteriorating metrics for female population.

Appendix 4 – Dudley Health Outcomes Framework

The Dudley Health Outcomes Framework is structured across 4 themes:

1. Population Health
2. Access, Continuity and Coordination
3. Empowering People and Communities
4. System and Staff

See figure 9 below for the four themes and high-level outcome descriptors.

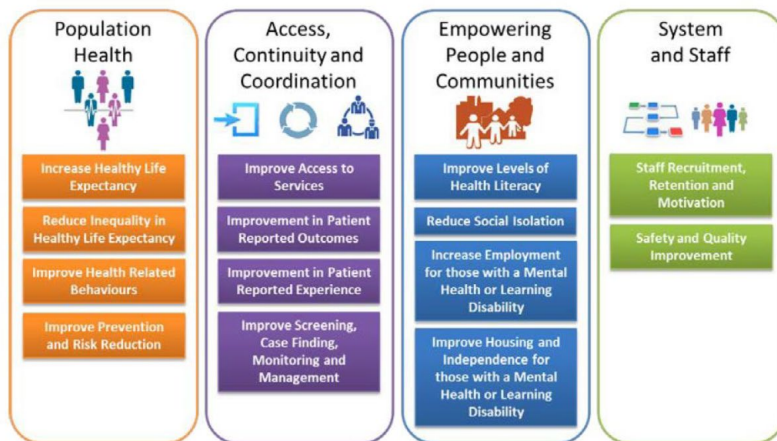


Figure 9. Summary of the Dudley Health Outcomes Framework.

Population health outcomes include:

- Improved healthy life expectancy
- Reduced inequality in life expectancy
- Reduced stroke mortality
- Reduction in childhood obesity
- Reduction in smoking prevalence
- Reduction in admissions for alcohol related conditions
- Increased childhood vaccination coverage
- Increased 'flu vaccination coverage

The Health Outcomes Framework also incorporates a comprehensive set of long-term conditions management metrics - the Dudley Quality Outcomes Framework for Health (DQOFH) which is incorporated into the integration agreement between DIHC and Dudley practices. It provides a financial incentive framework for long term conditions management as an alternative the Quality and Outcomes Framework (QOF) which is part of the national General Medical Services Contract between NHS England and GP practices.

Appendix 5 - Population Health Management and the evolving clinical model

The recent Capgemini ASE events have established a direction of travel for designing and refining the clinical model for integrated care. There was universal support for the PHM approach to optimising patient care which endorses rather than modifies existing ideas and plans. A key requirement of the ongoing work on the clinical model will be the juxtaposition of DQOFH with the activities of ICTs, and embedding PHM approach within this.

In order to both deliver high quality services which respond to these demands and to impact on wider determinants of health, clinical team activities are being organised broadly into 3 domains (see figure 10 below):

- Front line and routine care
- Integrated care teams
- Clinical communities⁷

Front line and routine care is well established, with general practice providing access to patients with acute needs as well as delivering holistic care under the established DQOFH. This has provided a step up from the GMS Quality and Outcomes Framework, supporting patients with multiple long-term conditions as a one-stop process. The continued integration and quality improvement of shared clinical pathways with acute and specialist mental health providers will further develop increasingly good health outcomes for the Dudley community.

Integrated Care Teams, wrapping care around patients

To support those with more complex needs ICTs have already been created, aligned to PCN neighbourhoods. These have allowed a multi-disciplinary focus on the individual needs of patients, with initial progress in supporting the frail elderly. The scope of the ICT model is being expanded to include other long-term conditions such as diabetes and respiratory care and early work has pioneered the multi-disciplinary approach. There will be a shift away from a system of outpatient referral and advice and guidance towards more pro-active care planning and clinical leadership – “care through conversation not correspondence.”

A specialty-aligned ICT will advise on patients with complex and demanding needs so that those patients that can benefit will have more intensive support and guidance. The data-driven approach will enable a shift from reactive to proactive care, using risk stratification and segmentation approaches to identify those patients who will benefit the most from ICTs. ICTs will be able to focus on cohorts of patients with similar clinical needs, patients with ‘red flags’ (for example, escalating use of reliever inhalers or failure to order repeat long term medication) and to follow up vulnerable patients who have been discharged from hospital. This will provide a vehicle for clinical leadership from specialist staff by creation of a learning environment, focused on increasing the competence and confidence of team members whilst improving clinical outcomes.

A key principle is that ICTs will facilitate individualised plans, wrapping care around the patient to meet their specific needs, drawing on the ICT members as well as the wider range of services available within the mutual network, meeting lifestyle and social needs as well as medical ones. This will also mean that specialists will be in control of their own case-loads, working to a principle of advising and guiding others and only seeing those patients where clinical need or uncertainty dictates.

⁷ This is a generic term; existing groups such as those focussing on EOL care, diabetes and respiratory are examples of ‘clinical communities’ which strive to improved outcomes and will naturally meet this need.

The role of clinical communities

‘Clinical communities’ – groups of health professionals and other stakeholders with an interest in specific sub-populations (for example, based on specialties, age specific groups or neighbourhoods) will play a key role in monitoring and improving health status and reducing the impact of disease. A broad remit will complement the established focus on clinical guidelines, education and training and clinical audit, by co-ordination of quality improvement programmes across the system, as well as the formulation of strategies for supporting patients with digital technologies.

These clinical communities will be held to account for population specific improvements in health status. With this accountability will come a legitimacy to address the wider determinants of health, with a supporting culture that encourages clinical leaders to act as vocal advocates for the population of Dudley. There will be an emphasis on staging of primary prevention interventions across a time horizon so that improvements in health ‘land’ at the right time.

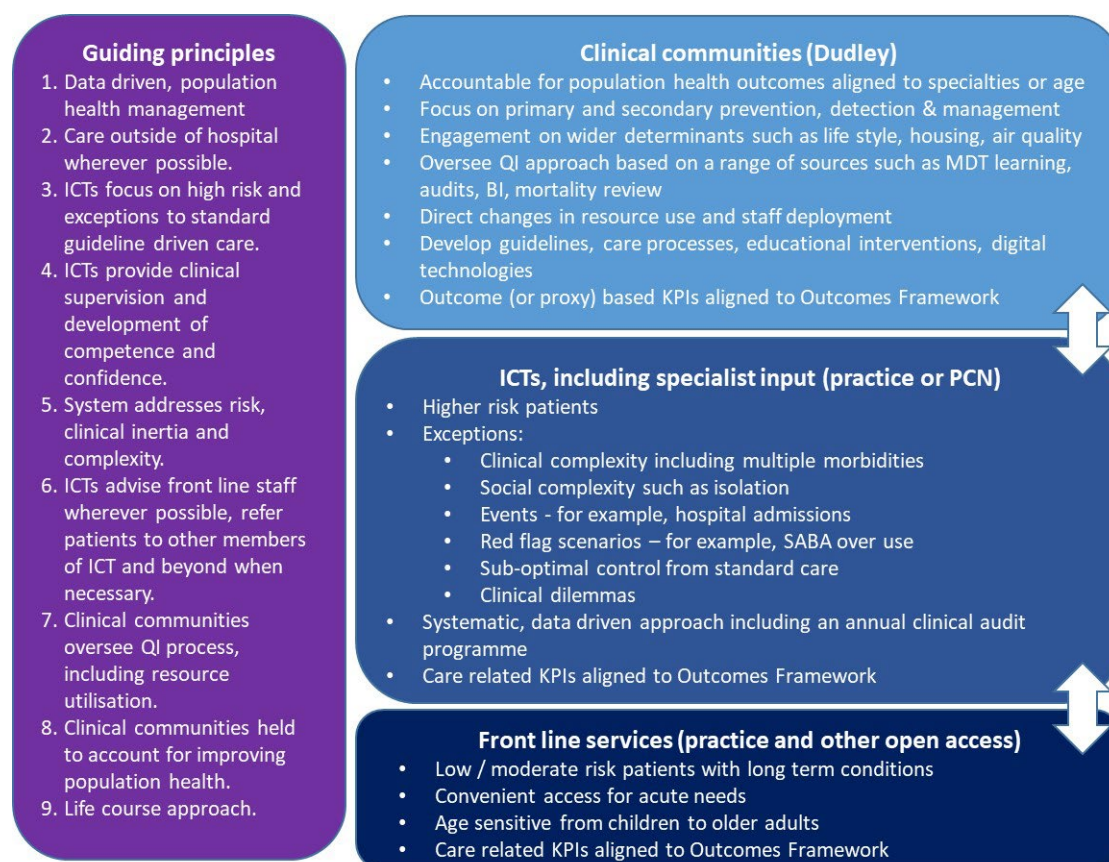


Figure 10. Population health management approach to integrated care