



Population Health Management

George Morris, Public Health Registrar, NHS Herefordshire and Worcestershire ICB

Matt Fung, Public Health Consultant, Worcestershire County Council

Today we will share...



What is PHM?



Why do we need PHM?



Examples of PHM in our system



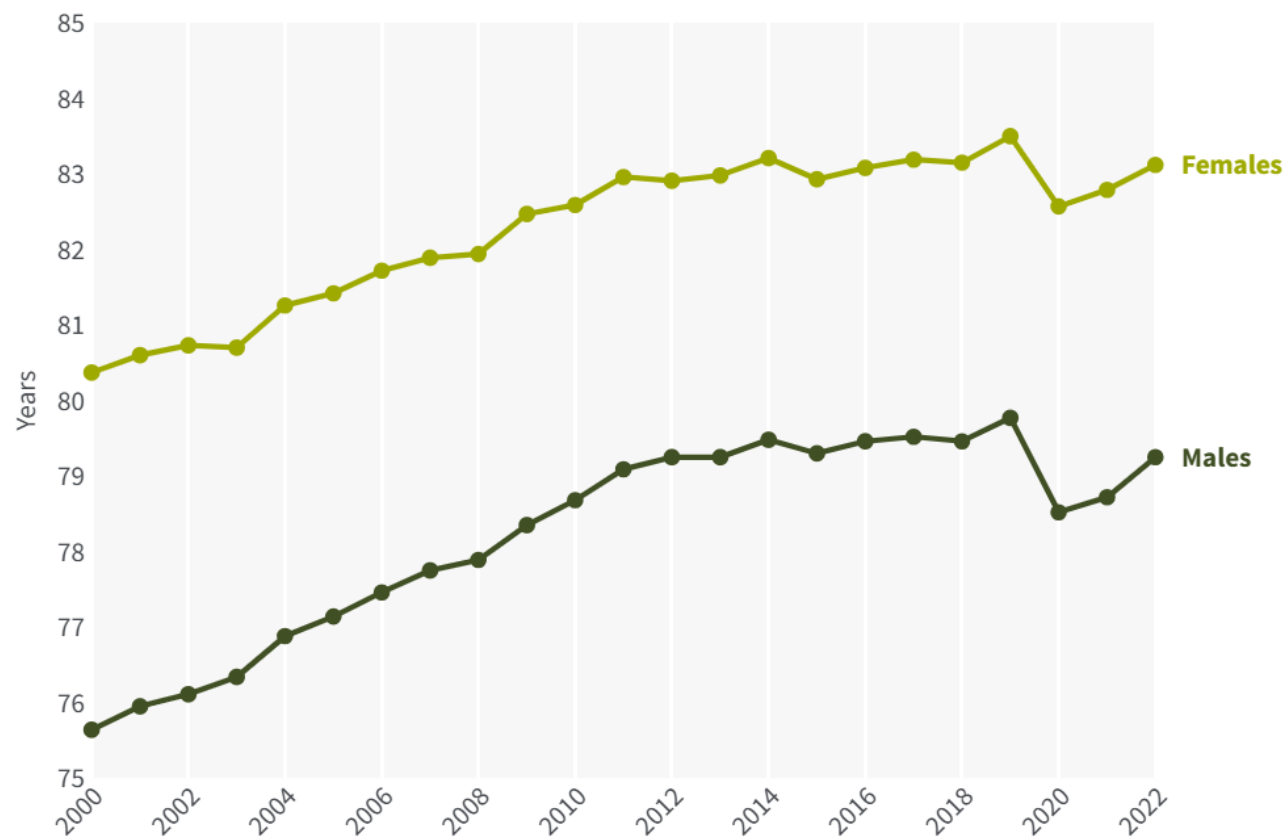
How we are developing PHM approaches

Introduction to Population Health Management (PHM)

Why do we need PHM?

The case for prevention

Life expectancy from birth in England 2000-2022



- Rising life expectancy over recent decades
- Changing health needs with more people living with **multiple long-term conditions**

Source: [Office for National Statistics \(2024\)](#).

TheKingsFund>

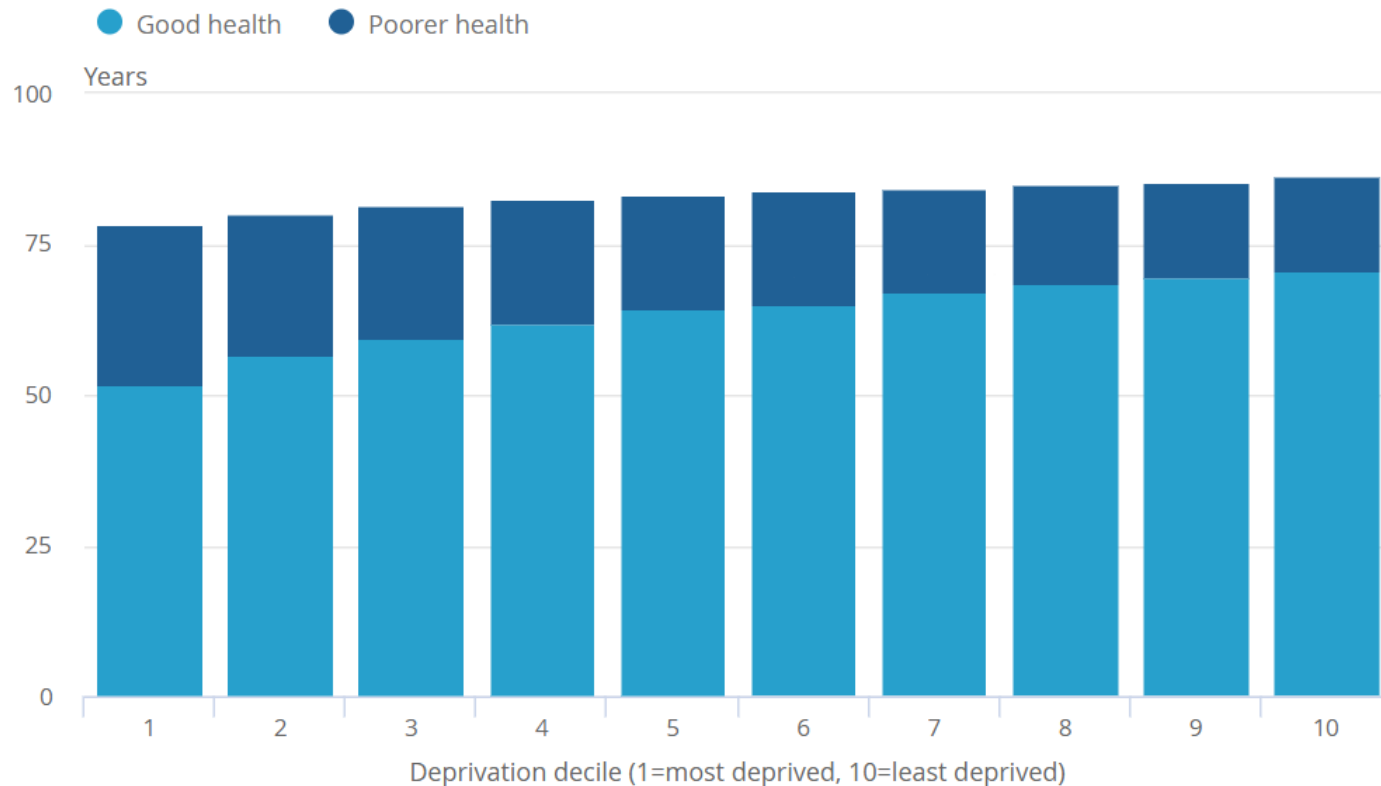
Image from: [What Is Happening To Life Expectancy In England? | The King's Fund](#)

Used under [CC BY-NC 4.0](#)

Why do we need PHM?

Tackling health inequalities

Healthy life expectancy at birth, England, 2018 to 2020

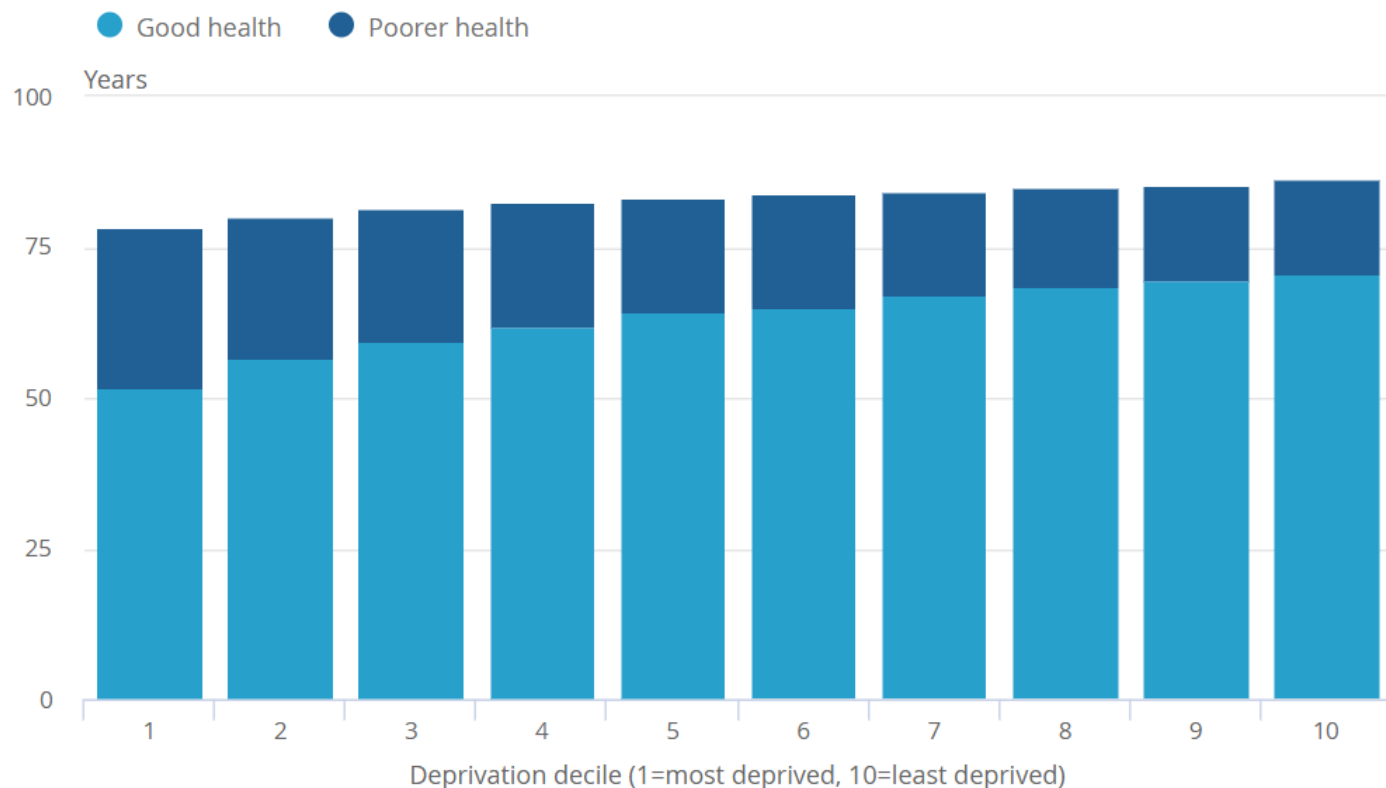


- There are **inequalities** in life expectancy
- Those that live in the **most deprived areas** have the lowest life expectancy
AND
- Experience **more of their life in poorer health**

Why do we need PHM?

Keeping well for longer

Healthy life expectancy at birth, England, 2018 to 2020



40%

Socioeconomic factors

Education, employment, income, family & social support, community safety.

10%

Physical Environment

Housing, access to green space, air quality.

30%

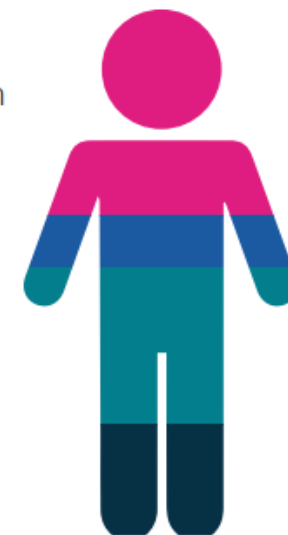
Lifestyle factors

Diet and physical activity, tobacco use, alcohol use.

20%

Health Care

Access to good quality health care services.



The wider determinants of health

Percentages indicate from research how much each of these influences a person's health

[From: Worcestershire Joint Local Health and Wellbeing Strategy 2022-2032](#)

What do we mean by PHM?

Reactive

- Responding when someone becomes unwell
- Focus on provision of healthcare

PHM

Proactive

- Intervening to prevent illness
- Reduce the need for people to be seen in hospitals
- Address inequalities in health outcomes
- Goes beyond healthcare

What do we mean by PHM?

Integrate

- **Multiple** data sources that go beyond healthcare data
- **Quantitative and qualitative** data

Insight

- Use **population segmentation** and **risk stratification** to identify opportunities for prevention
- **Link population insights back to individual patient care**

Impact

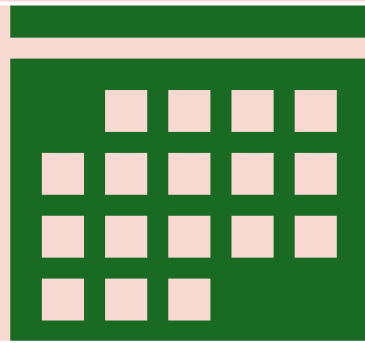
- **Work together** across the system to support our population through proactive care
- Change the way we focus our resources towards **prevention**

How can PHM approaches be used in practice?



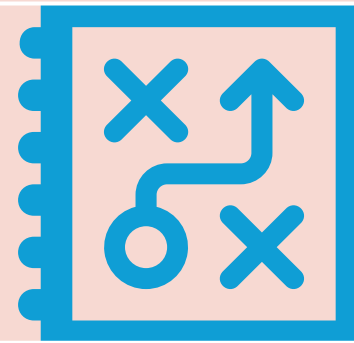
Individual patient care

- > Identifying prevention opportunities
- > Patient triage



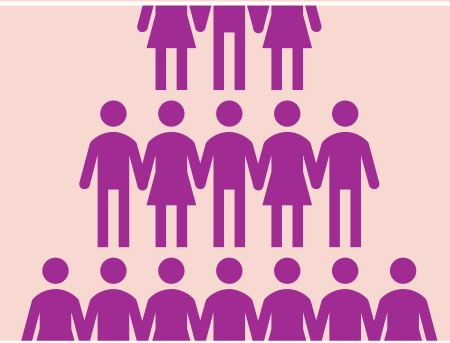
Clinical service delivery

- > Planning and prioritising proactive clinical reviews
- > Matching skill mix to patient needs



Strategic commissioning

- > Understanding resource use
- > Allocating resources according to need

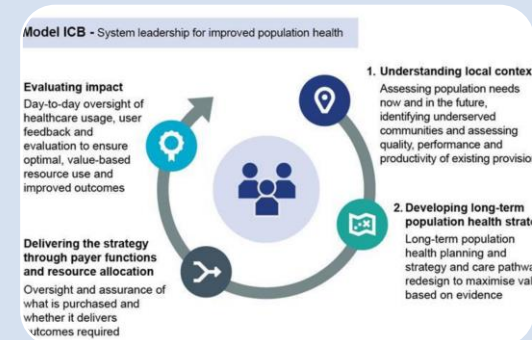


Public health

- > Targeting primary prevention
- > Focusing asset-based development

National policy context

The case for prevention



The
Fuller
Stocktake
(2022)

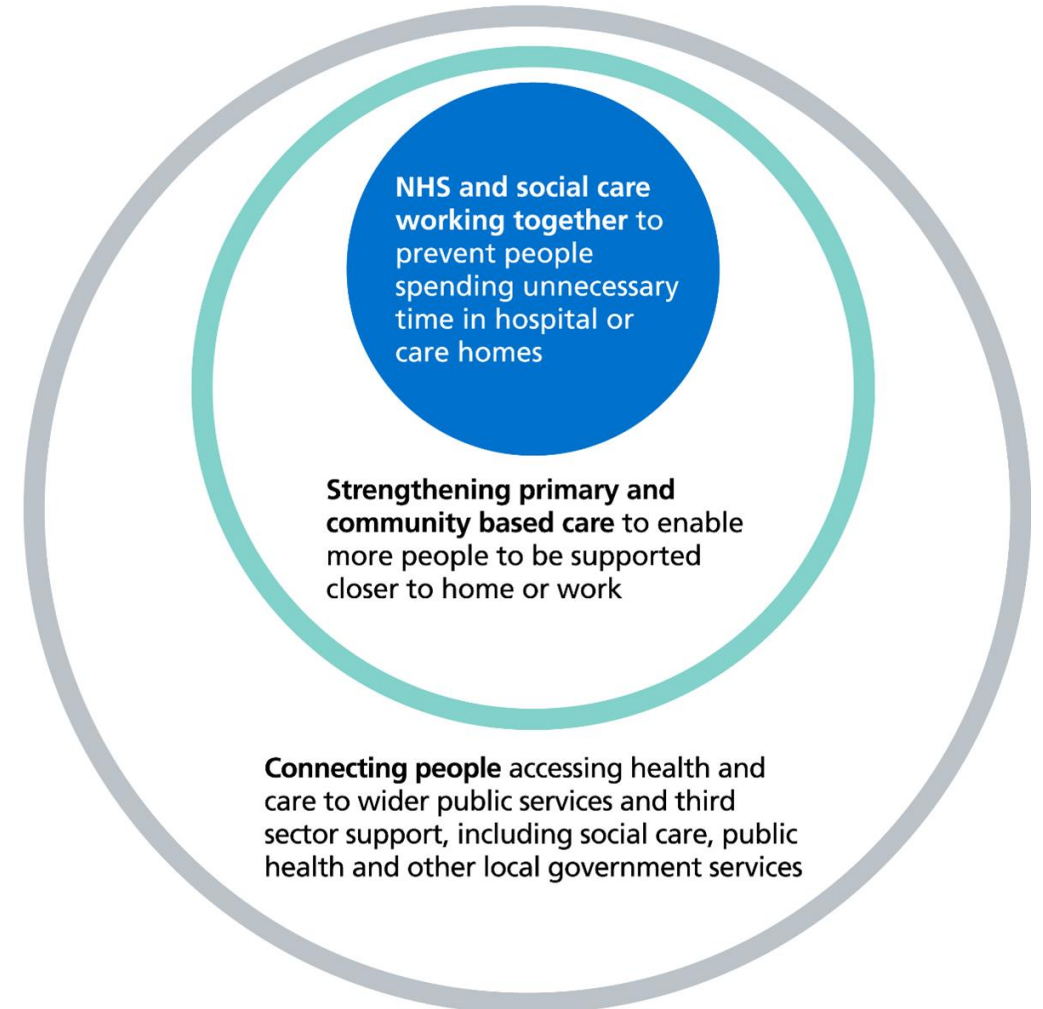
The
Darzi
Report
(2024)

10 Year
Health
Plan
(2025)

Model
ICB
Blueprint
(2025)

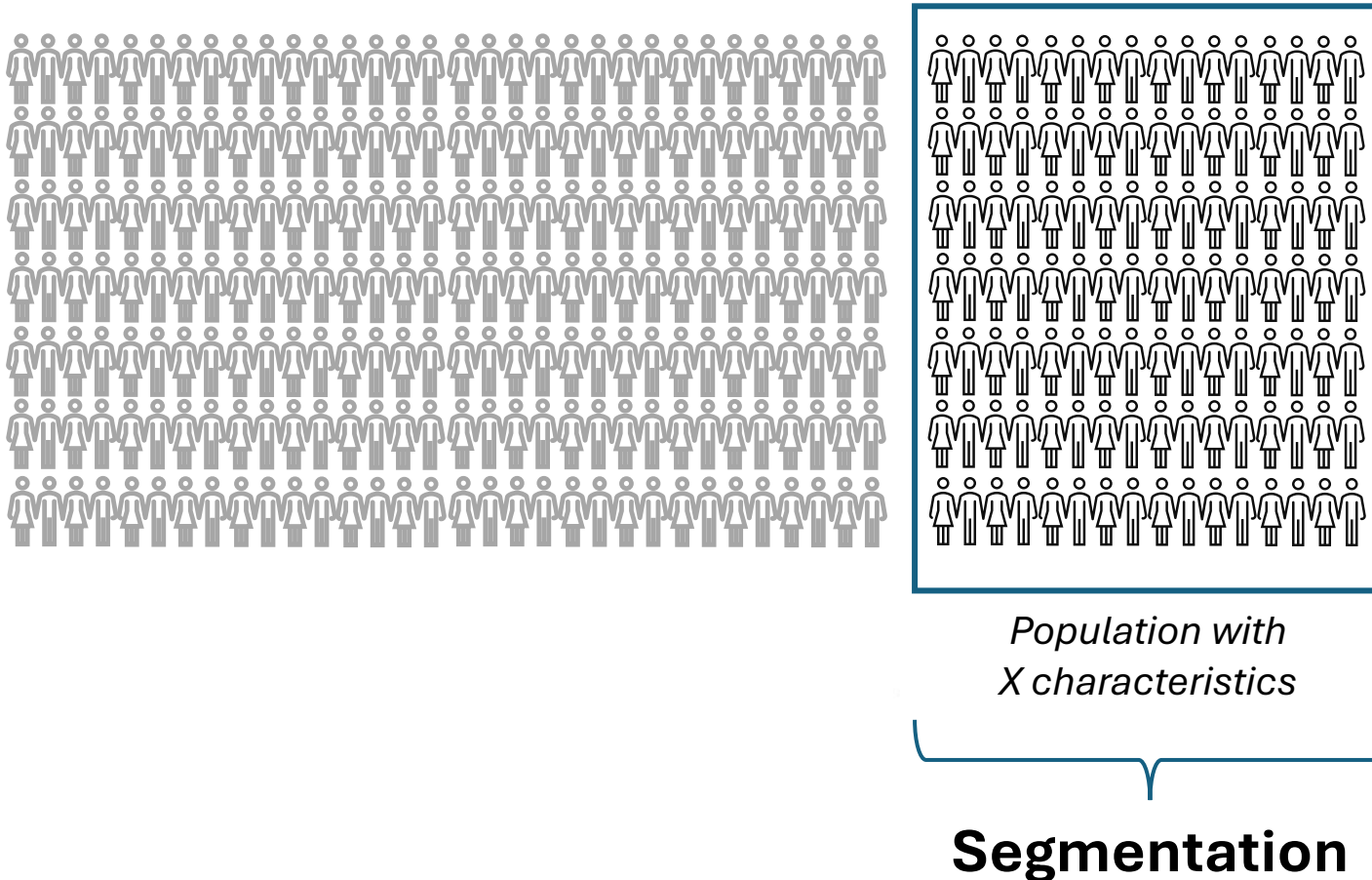
How does PHM link with Neighbourhood Health?

- [Neighbourhood Health Guidelines 2025/26](#) set out the **overall vision** for development over 5-10 years
- PHM is one of six **core components**
- It will act as an enabler for the functions of **Integrated Neighbourhood Teams**



Key concepts in PHM

Segmentation, Risk stratification, Impactability



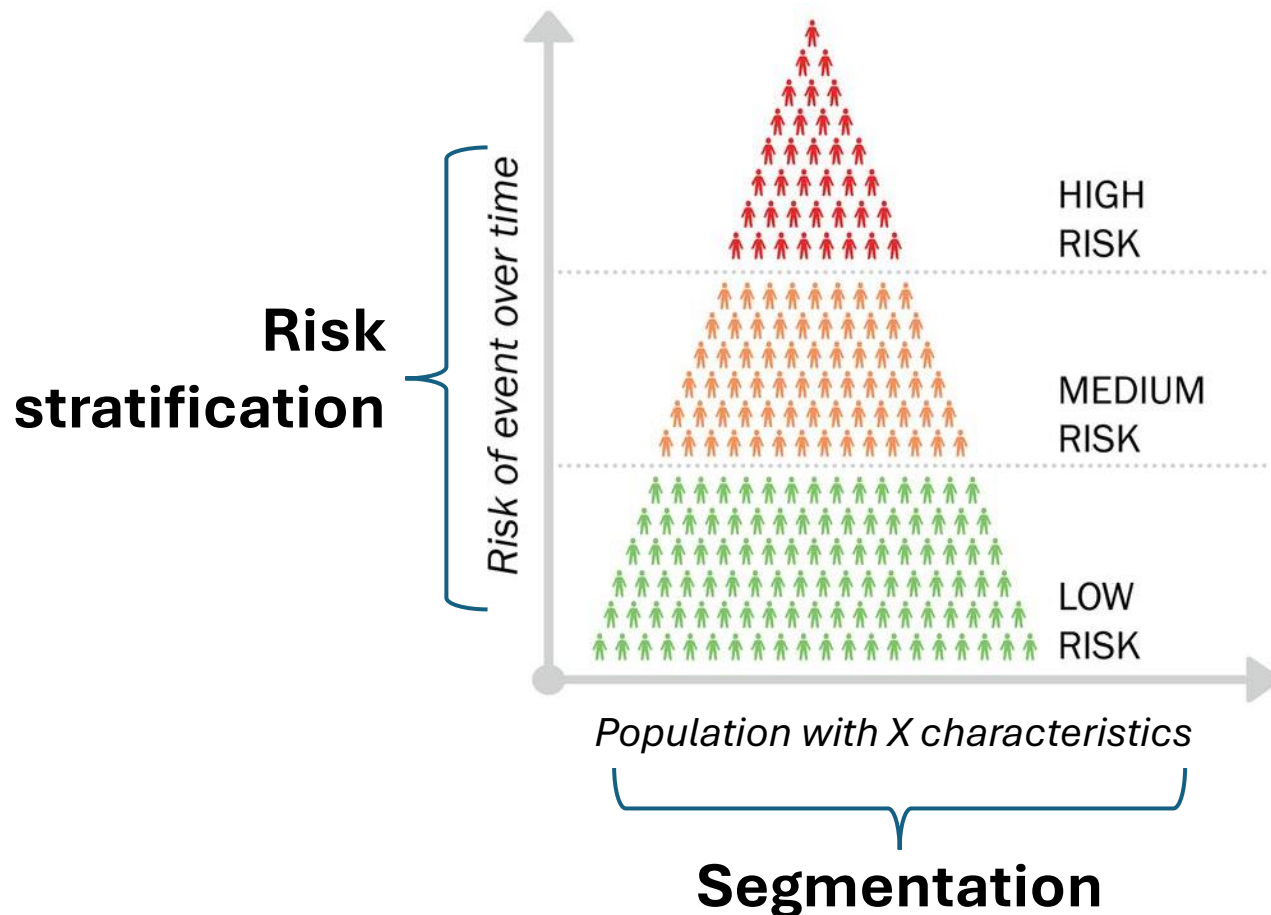
Segmentation groups the population based on shared characteristics and needs

Typically based on:

- Service use
- Age and condition

Key concepts in PHM

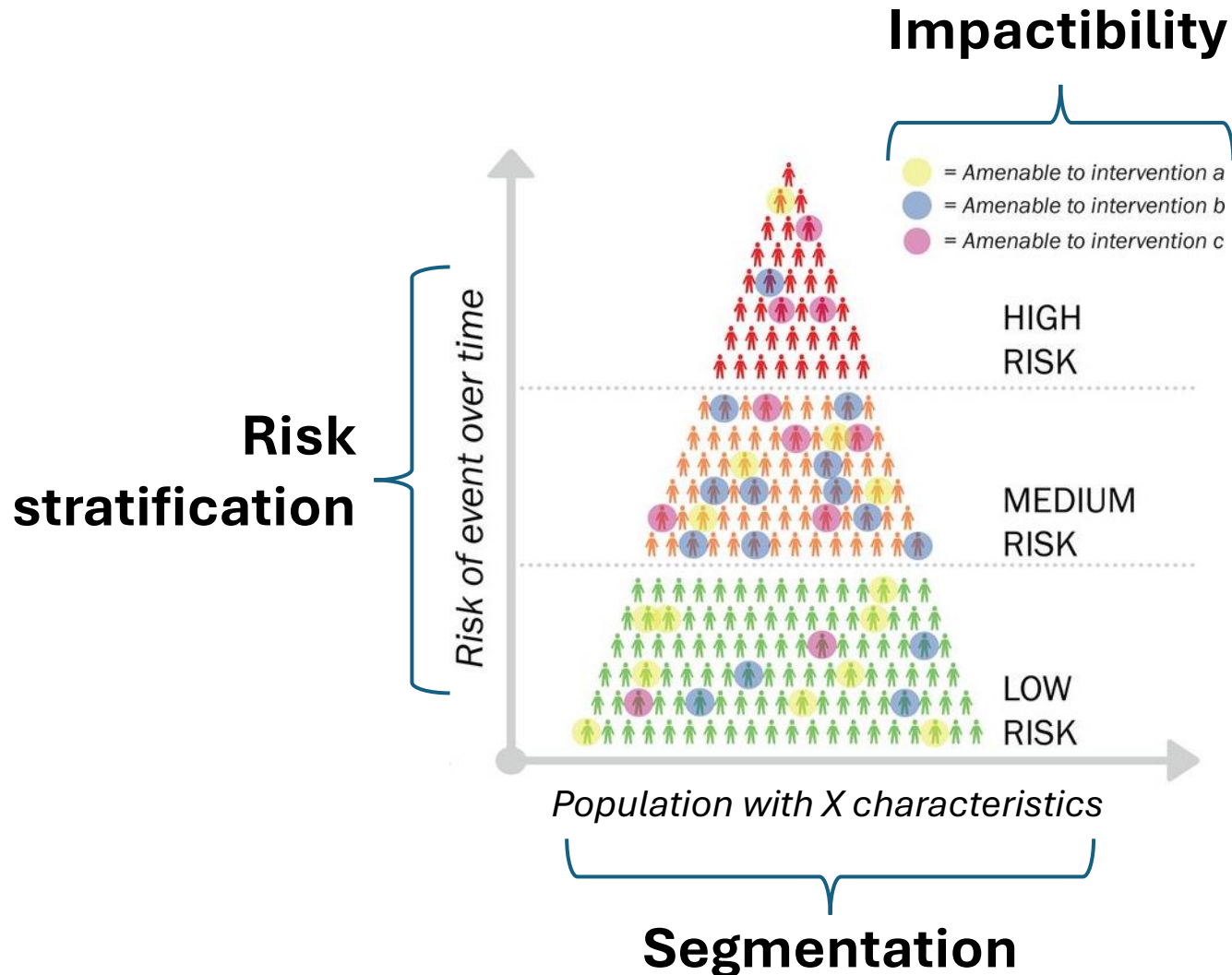
Segmentation, Risk stratification, Impactability



Risk stratification identifies those at highest risk of poor outcomes

Key concepts in PHM

Segmentation, Risk stratification, Impactability



Impactability assesses the available interventions and identifies who is most likely to benefit

UK weather alert levels

Red (emergency response)

Significant risk to life for whole population;
severe pressure across all public services

Amber (enhanced response)

Risk to vulnerable people with some impact on
wider population; pressure across health service

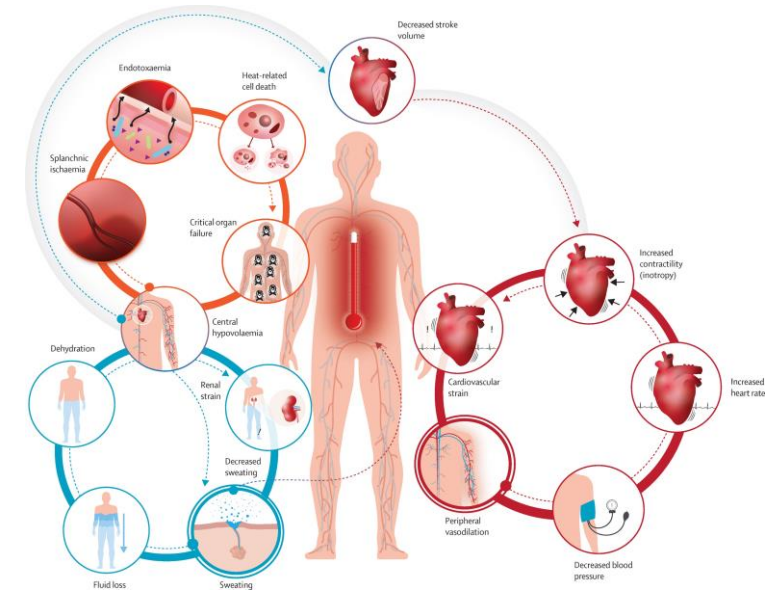
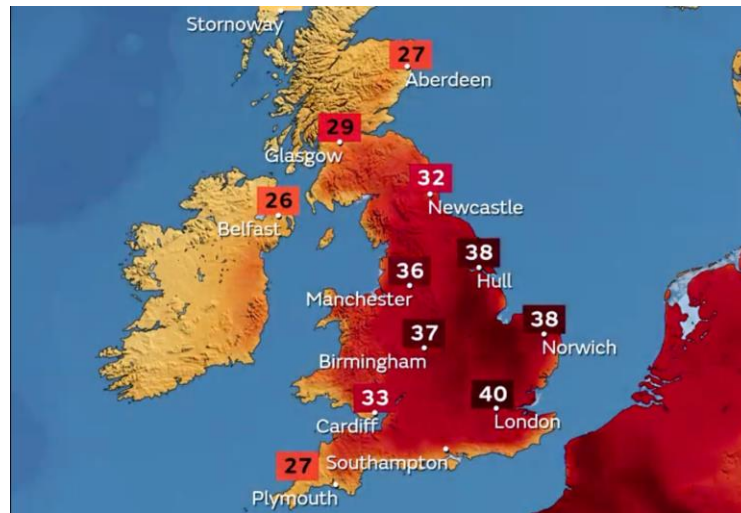
Yellow (response)

Periods of heat or cold that could
affect particularly vulnerable people

Green (preparedness)

Conditions likely to have minimal impact on health

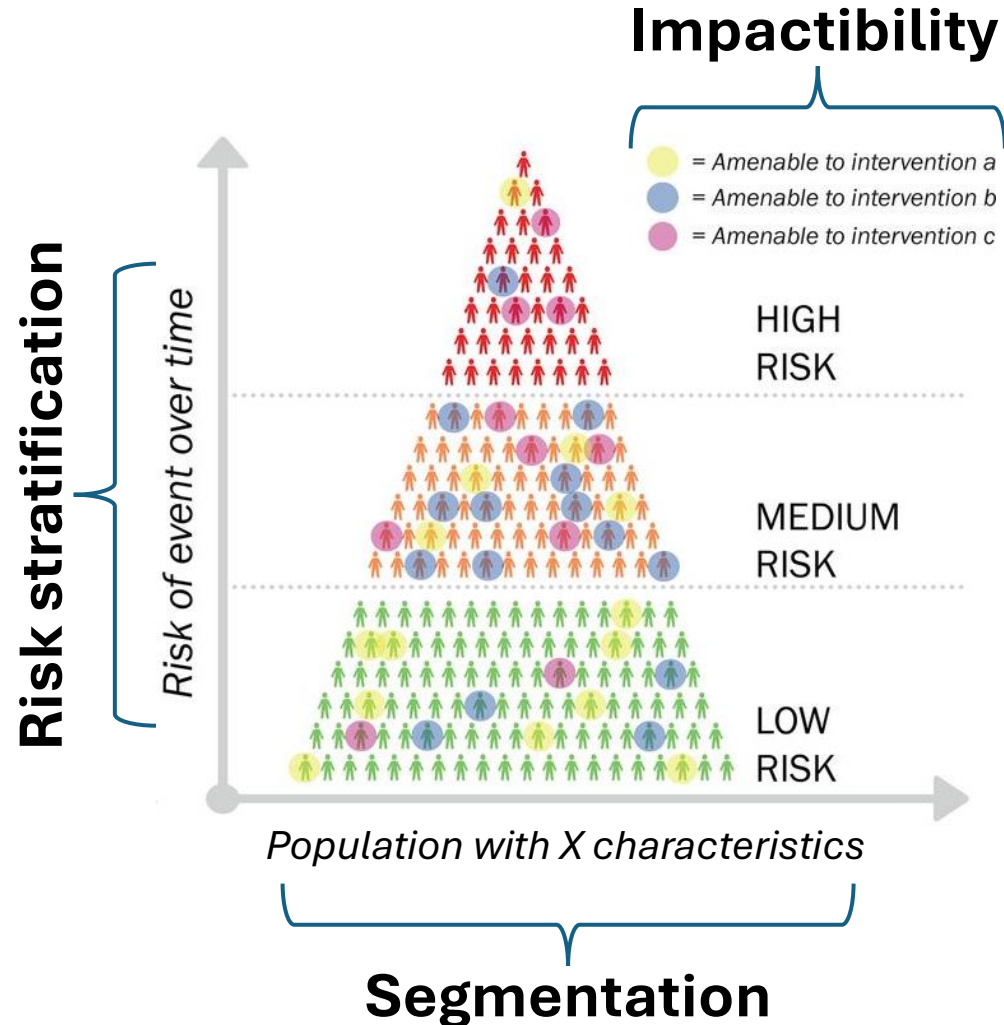
PA graphic. Source: UK Health Security Agency



Example: How might we apply PHM approaches to prevention of ill health during heatwaves?

Example: Applying PHM approaches to heatwaves

Segmentation, Risk stratification, Impactability



Segment: Older adults (>65yrs) with 1+ LTCs

Risk stratification:

- Multiple LTCs
- Patients on certain medications
- Less able to care for themselves
- Patients recently admitted to hospital
- Living in poor housing

Impactability:

1. Housing interventions
2. Social care support to prepare
3. Condition and medication reviews

PHM Case Studies



Worcestershire Public health LSOA review / PHM

| Why focus on small geographical areas?

We know we can make a difference by focusing our resources in a smaller area

People are more likely to have similar needs and have access to similar services if they live in the same small area.

Our limited resources can be applied more intensively and powerfully.

We know that local small area factors, such as deprivation, are a strong predictor of the demand for services (LSOA factors - Webb et al. 2020)



Small Area Focus

Steps in utilising a small area focus to preventing service demand



Identify priority areas

Through data analysis and community intelligence



Identify gaps in support provision

Identify factors within the area that may be exacerbating demand



Address gaps

Through deficit, quality and asset-based work



Evaluate impact, refine approach

Qualitative community narratives and case studies; quantitative service demand data and cost



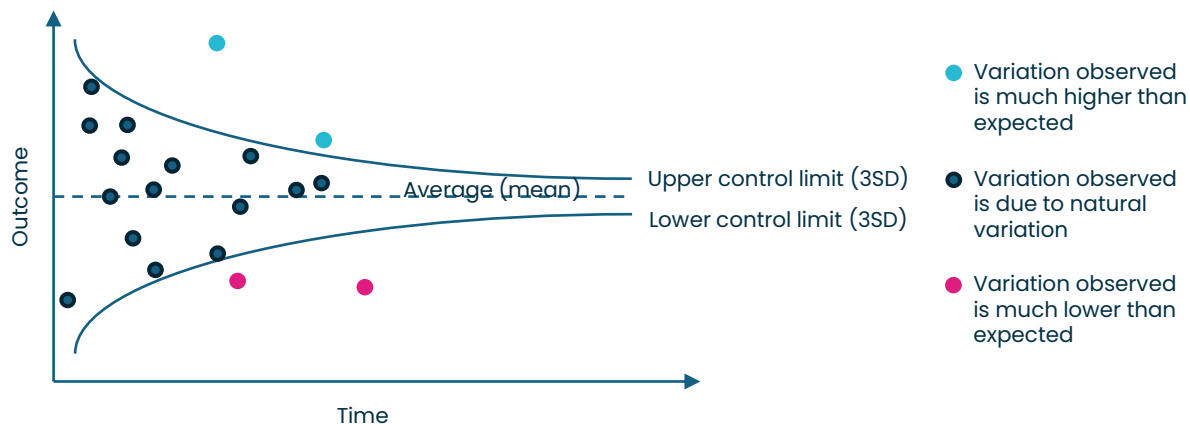
Statistical Process Control Charts

Statistical Process Control Charts allow us to identify areas where emergency admission rates are unusually high
(Risk Stratification)

We use statistical process control charts (funnel plots) to see which areas' rates fall outside of the expected range.

Control charts work on the assumption that the variation between areas within the defined control limits* can be explained by natural variation 99.7% of the time. In areas outside of these control limits there is something beyond chance that is driving these differences.

Example of a funnel plot



A bit more information on our control charts:

We use data available at a LSOA (lower super output area) level which is approximately 300-400 households

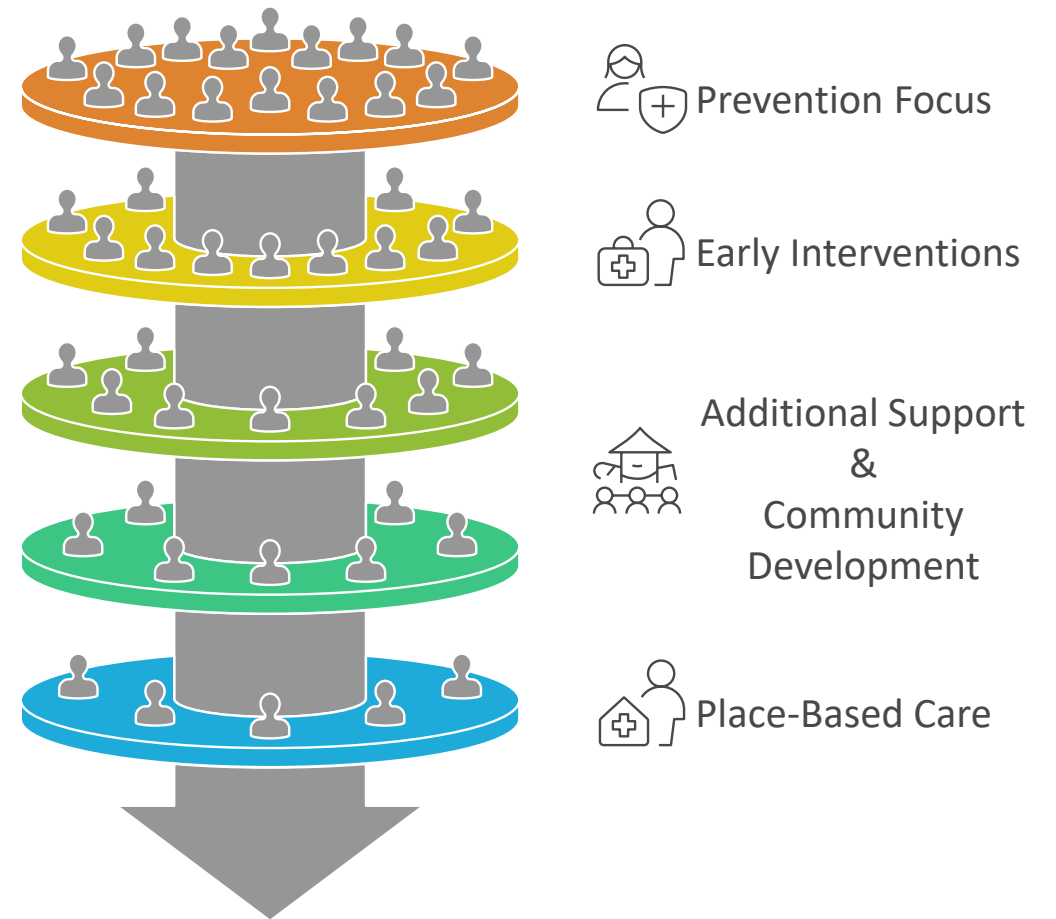
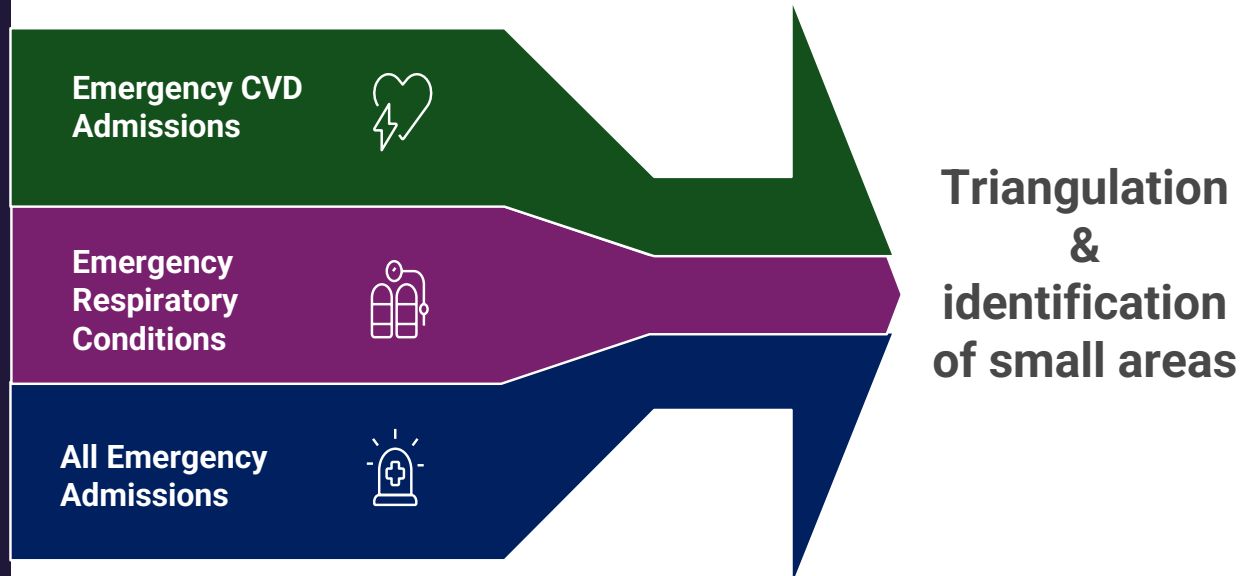
We use correlation and regression analyses to demonstrate statistical significance

We used 3 year aggregate data to smooth out variation over time

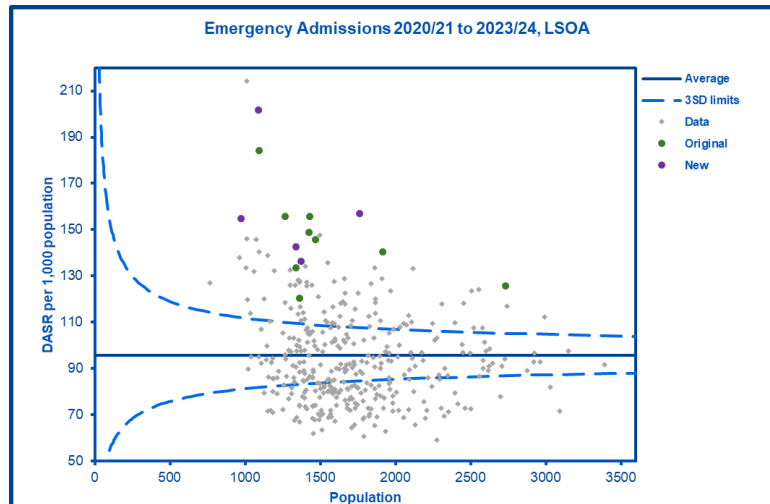
*We have chosen to set our control limits at 3 standard deviations (3SD) from the mean

Measures of Unmet need

We have used three emergency admissions measures as a way of measuring unmet need



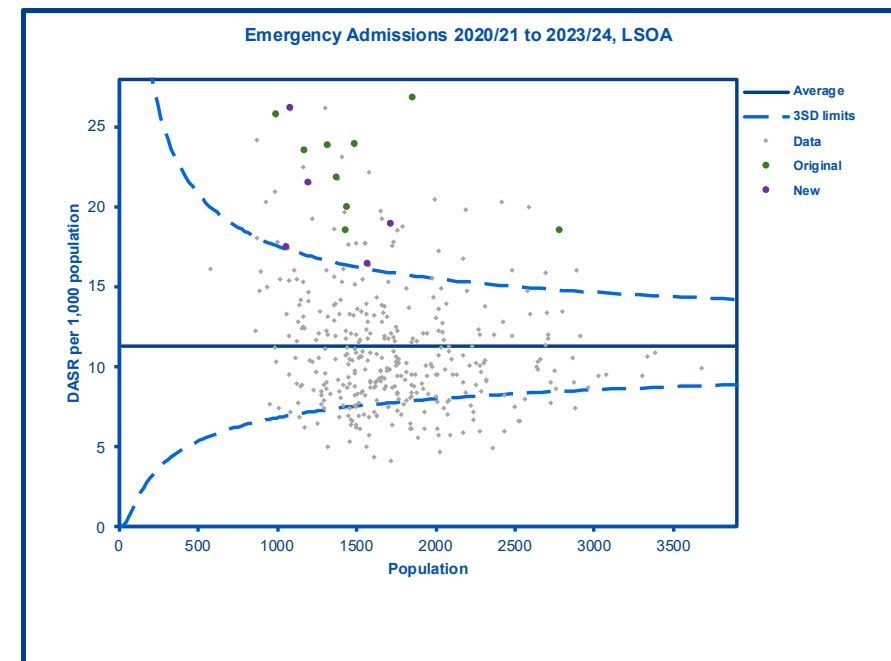
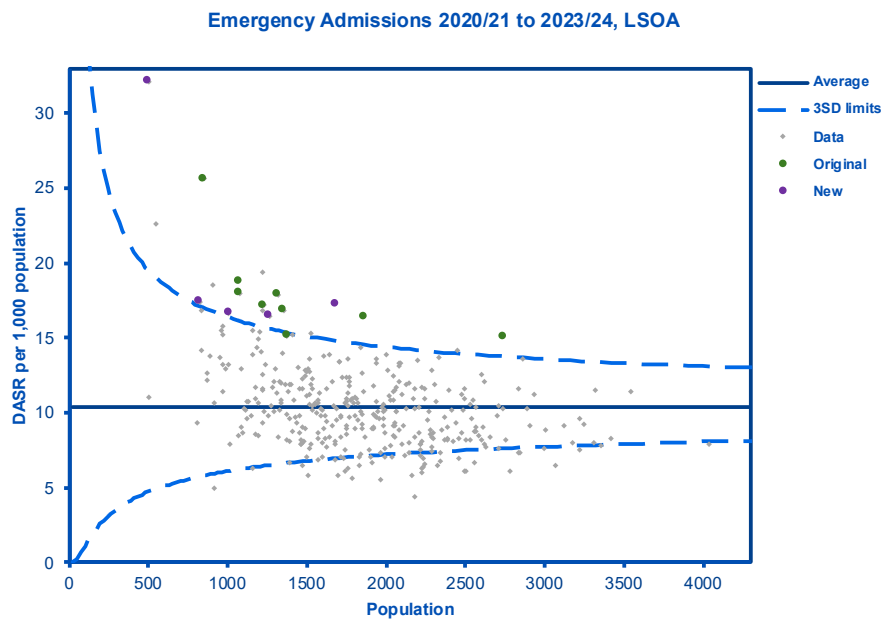
Triangulated analysis



All cause emergency admissions

Circulatory emergency admissions

Respiratory emergency admissions

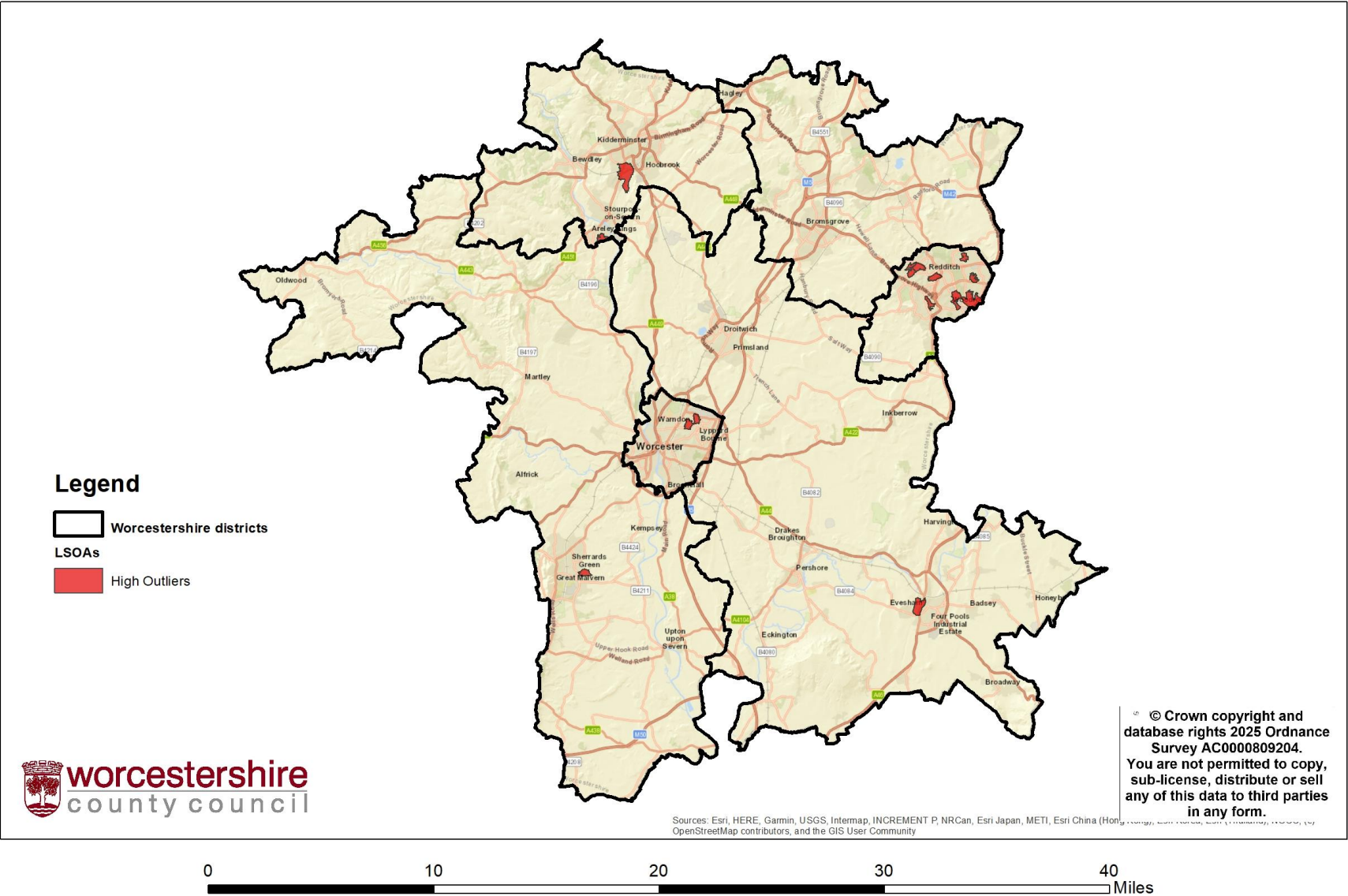


Emergency Admissions: identified LSOAs

LSOA code	LSOA name	District	IMD Decile
E01032204	Sherrard's Green	Malvern Hills	1
E01032232	Batchley	Redditch	2
E01032234	Batchley Brook	Redditch	2
E01032239	Smallwood	Redditch	1
E01032245	Church Hill (YMCA Surrounding Area)	Redditch	2
E01032260	Part of Headless Cross, High Trees Close	Redditch	1
E01032278	Winyates housing estate (area around Ipsley C.E. Middle Sch)	Redditch	1
E01032252	St. Thomas More First School Area	Redditch	2
E01032265	Washford	Redditch	1
E01032333	Brickfields	Worcester	1
E01032332	Old Warndon, east of Cranham Drive	Worcester	2
E01032377	Bewdley Road	Wychavon	2
E01032424	The Walshes	Wyre Forest	2
E01032470	Foley Park	Wyre Forest	1

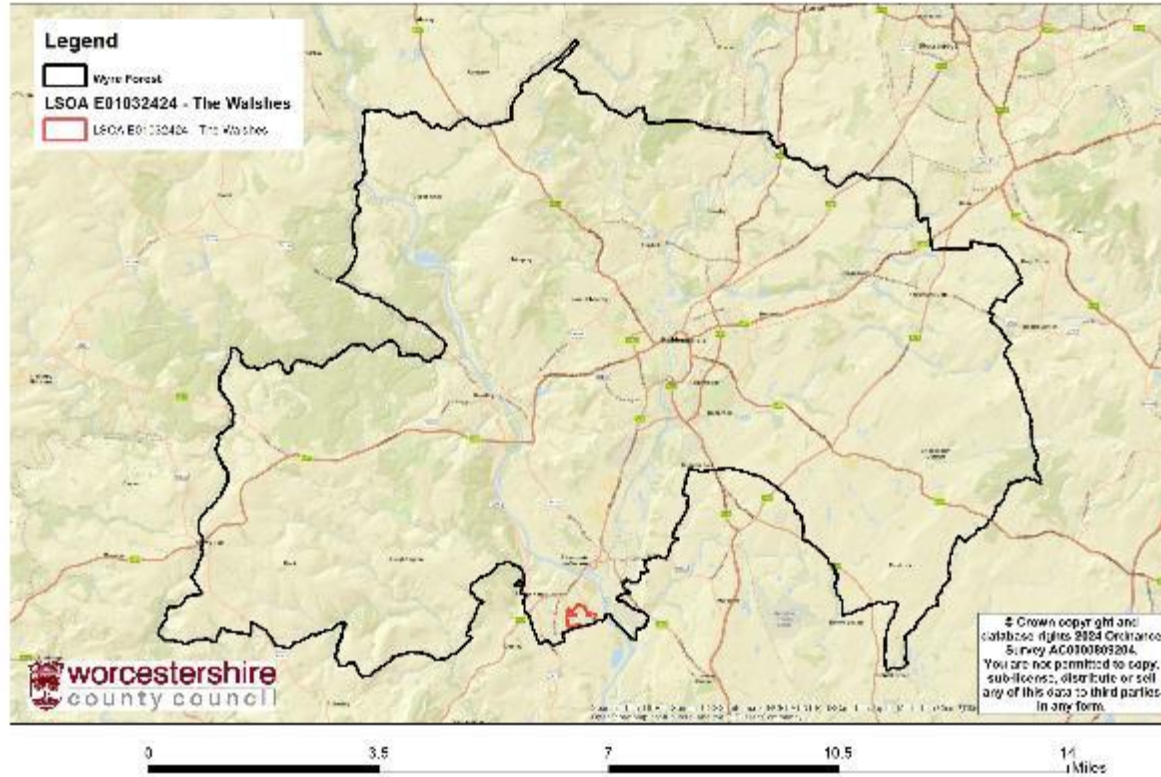
- 4 years data to 2023/24
- 14 priority areas above control limits identified
- CVD and respiratory conditions account for a high proportion of potentially preventable conditions.
- Emergency admissions are strongly associated with IMD

High Outliers Map - Worcestershire

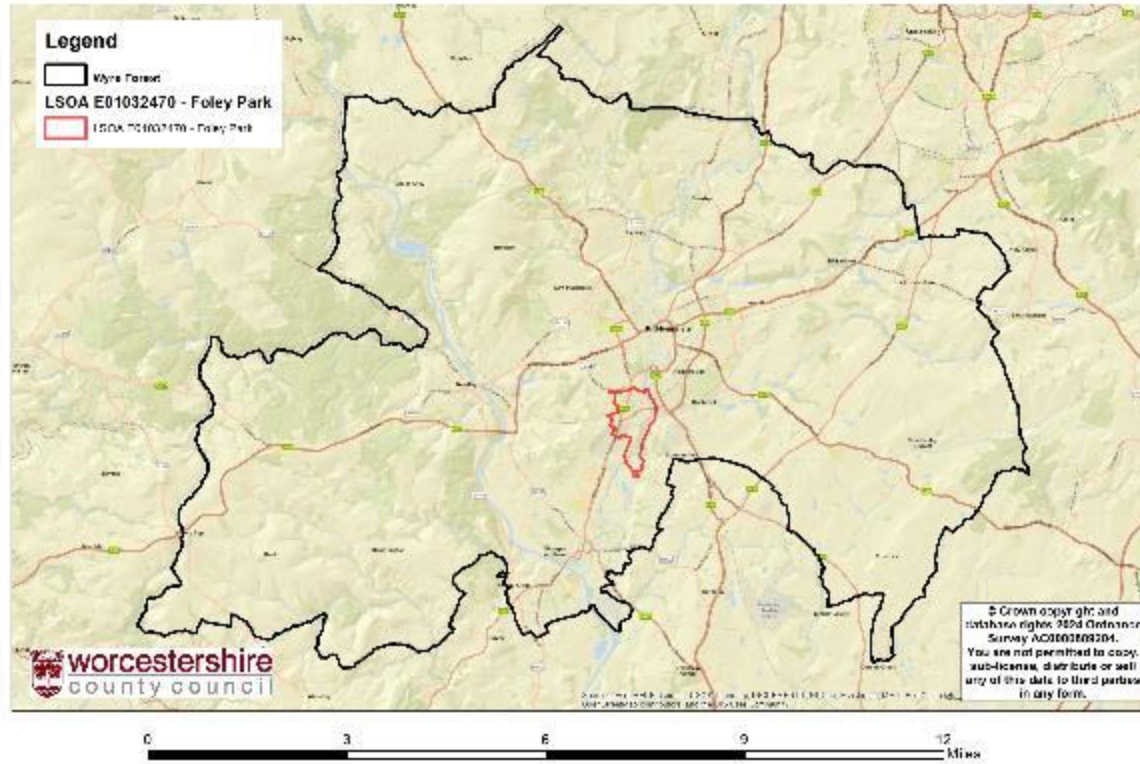


Map showing High Outliers for 4-years data of Emergency Admissions - Worcestershire

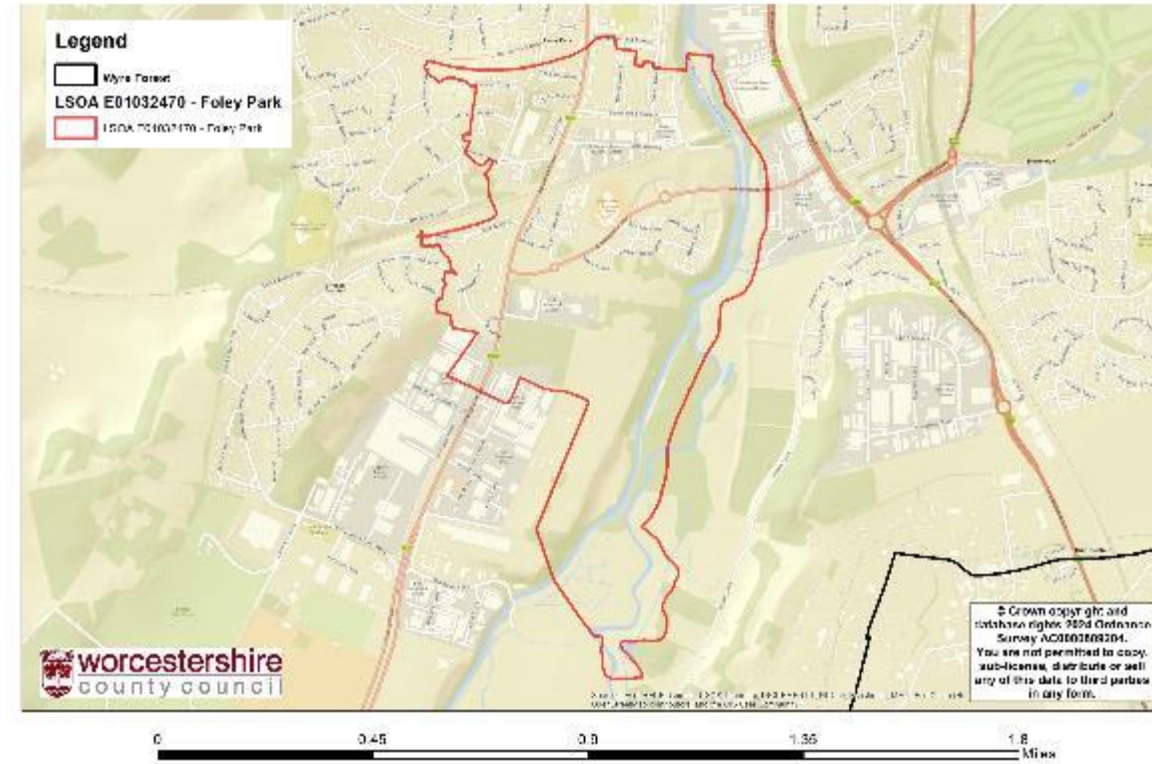
Wyre Forest LSOA The Walshes



Wyre Forest LSOA Foley Park



Map showing LSOA E01032470 - Foley Park



Map showing LSOA E01032470 - Foley Park

Wyre Forest LSOA Demographics

The Walshes (IMD 1)

- Younger age structure than Worcestershire
- Higher proportion of people aged under 45 than Worcestershire.
- Mostly white population & lower proportion of residents from a minority ethnic background compared to Worcestershire
- IMD decile 1 income, employment, education
- IMD decile 2 health & disability
- 1,419 patients
- **243** admissions for **143** patients within last year
- Year prior, **317** admissions for **168** patients
- 10,919 appts for 1,063 patients (**74.9%** saw GP within the last year)

Foley Park (IMD 2)

- Younger age structure than Worcestershire
- Higher proportion of people aged under 50 than Worcestershire
- Mostly white population & lower proportion of residents from a minority ethnic background compared to Worcestershire
- IMD decile 1 for education, skills, training, IMD 2 for crime and living environment.
- 1,055 patients (of 2,774 total)
- **229** admissions for **122** patients within last year
- Year prior, **282** admissions for **144** patients
- 10,351 appts for 831 patients (**78.8%** saw GP within the last year)

Wyre Forest LSOA Summary

The Walshes

- Negligible rates of NHS health checks
- High rates of obesity compared to ICB
- High rates of smoking
- High prevalence of anxiety and depression
- High prevalence of asthma
- High rates of depression and HTN amongst those admitted
- High volume of alcohol consumption amongst those admitted

Foley Park (IMD 2)

- High rates of smoking
- High rates of obesity
- High prevalence of depression
- High prevalence of asthma
- High rates of depression and HTN
- Few of those admitted had an NHS health check

Slipper swap project

Purpose

The event was launched to address the increasing number of hospital admissions among elderly patients due to falls at home—often linked to unsafe footwear and clothing. Intelligence from the Hereford and Worcester Fire Service highlighted additional risks such as burns from gas hobs.

Target Audience

- Primarily for individuals aged 65+ with a history of three or more falls in the past year.
- Open to the wider community for fall prevention awareness.

Intervention & Services Offered

Held at Worcester Guildhall in a relaxed café-style setting, the event featured:

- **Slipper Exchange:** Old slippers swapped for safer, well-fitted ones (via ELTS Worcester).
- **Occupational Therapy:** Holistic assessments and follow-up home visits.
- **Health Checks:** NHS checks and general MOTs by the Your Health Team.
- **Fire Safety:** Home assessments and smoke detector checks by the Fire Service.
- **Freedom Leisure:** Info on free swimming and exercise classes for over-65s.

Outcomes

- **100+ attendees** engaged.
- **60 pairs of slippers** exchanged.
- **58 follow-up OT visits** completed, including Respect forms and frailty assessments.
- Participants received fall prevention advice and community resource signposting.

Funding

- £2,500 grant from Worcestershire County Council.
 - £2,100 spent on slippers.
 - Remainder used for promotional materials and engagement.

Conclusion

The event demonstrated the power of cross-sector collaboration in addressing fall risks among the elderly. It successfully combined health, safety, and community engagement into a single, impactful initiative.

Breakout rooms

Discuss with colleagues (15 mins)

1. Have you seen PHM in practice?
2. What do you think are the challenges to implementing PHM?
3. How could you develop PHM in your area of work and what would support you in doing this?

How we are supporting PHM development

How we are supporting PHM development

PHM steering
group

Strategic
Implementation
Plan

Linking data and
new insights
(Magentus Pilot)

PHM use cases

To learn more about PHM

The screenshot shows a web page titled 'Resource Library: Population Health Management'. The page has a green header bar with the title. Below the header, there is a sidebar on the left with a list of links: 'Participants', 'Population Health Management', 'Learn More About PHM Through Short Reads, Videos a...', and 'Deepen your Knowledge of PHM Through Longer Reads ...'. The main content area on the right is titled 'Population Health Management' and contains a paragraph of text about PHM, followed by a list of bullet points under the heading 'Integrate: Bringing together both quantitative and qualitative data from health, social care, socioeconomic and asset-based sources to build a more complete picture of the health and wellbeing of our population'. The bullet points are: 'Integrate: Bringing together both quantitative and qualitative data from health, social care, socioeconomic and asset-based sources to build a more complete picture of the health and wellbeing of our population', 'Insight: Use PHM analysis approaches (including population segmentation, risk stratification and impactability) to identify groups that will benefit most from proactive care', and 'Impact: Work in partnerships across the system to strengthen community assets for health and support individual patients in an integrated way to deliver more effective, efficient, and proactive care targeted at these groups'. There are also two sidebars on the right: 'Useful contacts across the ICB' and 'Accessing a Wide Range of Resources on PHM'.

Herefordshire and Worcestershire ICB Academy Exchange

Home Dashboard Learn H&W ICS Website Resource Library Contact Us

You are using a guest account Sign in

Home / Courses / Resource Library / Population Health Management / Population Health Management

Resource Library: Population Health Management

Resource Library: Population Health Management

- Participants
- Population Health Management
- Learn More About PHM Through Short Reads, Videos a...
- Deepen your Knowledge of PHM Through Longer Reads ...

Population Health Management

People's health is changing, and care needs are evolving. People are living longer, but with more years in poorer health and it is increasingly common for people to have two or more long term health conditions. This reinforces the need to focus on prevention and integrated care, reflected in the Governments "Three Big Shifts" and a key theme of the [NHS 10 Year Plan](#).

Population Health Management (PHM) is an approach that links a wide range of health, social care, and socioeconomic data to help identify opportunities for proactive, preventative care. It is a key enabler for [neighbourhood health approaches](#) and will also support the ICB in its [core future role as strategic commissioner](#).

In Herefordshire and Worcestershire ICS, our vision for PHM is to improve the health and wellbeing of the population of Herefordshire and Worcestershire, and reduce health inequalities, by making better, evidence-based decisions for planning and delivery of services using joined up data, capabilities, and insights. We will do this through the "3 I's" ...

- Integrate:** Bringing together both quantitative and qualitative data from health, social care, socioeconomic and asset-based sources to build a more complete picture of the health and wellbeing of our population
- Insight:** Use PHM analysis approaches (including population segmentation, risk stratification and impactability) to identify groups that will benefit most from proactive care
- Impact:** Work in partnerships across the system to strengthen community assets for health and support individual patients in an integrated way to deliver more effective, efficient, and proactive care targeted at these groups

Colleagues across Herefordshire are already using PHM approaches but these aren't always recognised or named as such. If you are using population level data to understand health needs in

Useful contacts across the ICB

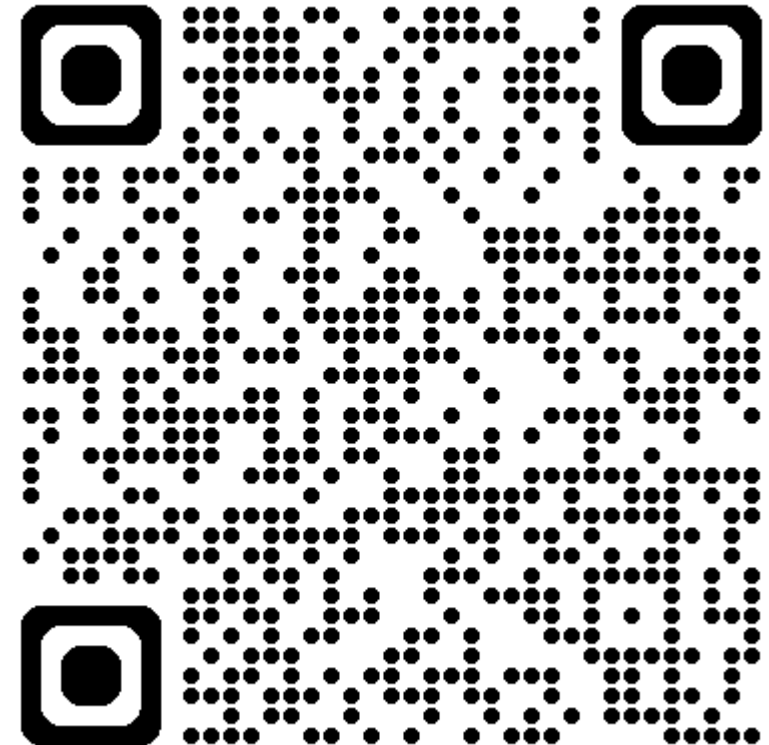
Please email us to find out more on PHM development in our system: hwicb.icsdevelopment@nhs.net

There is additional information on the ICS website: [Delivering our approach to Population Health Management](#)

Accessing a Wide Range of Resources on PHM

NHS Futures hosts the [Population Health Academy](#) which includes a wide range of resources to explore. This includes case studies from around the country, recordings from the National Delivery Forum describing PHM in action, and detailed guides to all elements of PHM.

Click the link below to find out



[Course: Resource Library: Population Health Management](#)

Glossary

- **Life expectancy:** An estimate of the average age that a person will live to based on the current health outcomes of the population
- **Healthy life expectancy:** An estimate of the average age a person is expected to live in good health based on the current health outcomes of the population
- **LSOA:** Lower Layer Super Output Area - a geographic unit used in England and Wales for statistical analysis, typically containing between 1,000 and 3,000 residents or 400 to 1,200 households. There are 33,755 LSOAs in England
- **IMD:** The [Index of Multiple Deprivation](#) is a measure of relative deprivation for small areas in the UK. It ranks areas based on a combination of different aspects of deprivation, allowing for comparison of areas based on their relative disadvantage. IMD is used to identify areas with the highest concentrations of various types of deprivation
- **Core20:** The 20% most deprived in the population (as defined by IMD) and a focus for development under the NHS [Core20PLUS5 framework](#) to address health inequalities.