



Population health intelligence Training prospectus



The training in this prospectus has been developed for local stakeholders including:

- local authority public health intelligence analysts
- public health practitioners
- people working in population health intelligence roles
- managers wanting to make better use of population health data

Welcome

Public Health England (PHE) works closely with a range of stakeholders, in particular with public health teams in local authorities, to improve their access to and use of the knowledge, intelligence and suite of tools developed and published by PHE.

The population health intelligence and tools produced by PHE support local systems in understanding the health of their populations, and the drivers of ill health, health inequalities and health outcomes.

We have developed a series of national training courses to build and develop population health intelligence capacity and capability in local public health systems. This prospectus sets out the range of courses available locally through your PHE Local Knowledge and Intelligence Service (LKIS).

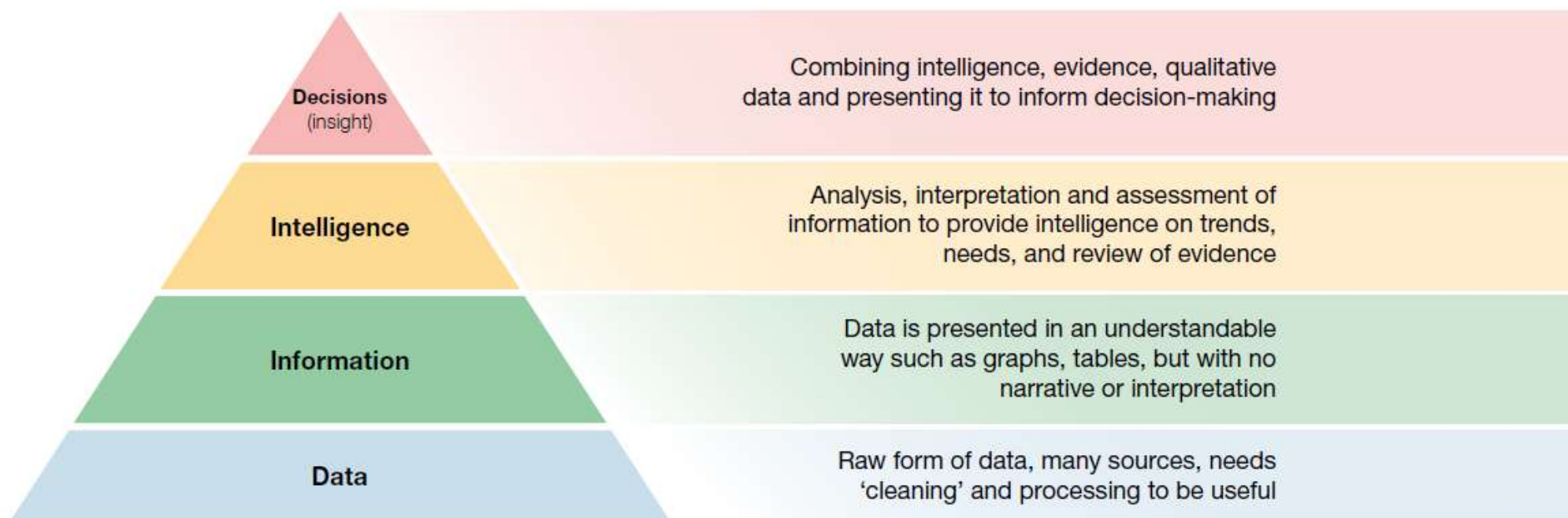
This training has been developed to support public health practitioners, including public health analysts, to increase their competency and confidence in using data to drive decision-making. The courses are suitable for anyone working in a population health role.

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Aim of the population health intelligence training programme

The aim of the training programme is to build and develop population health intelligence capacity and capability across local systems. The training courses aim to take people on a journey from data through to decision-making, increasing confidence when using data and in the production of robust information and intelligence.



The central elements of the programme, *Foundations of population health intelligence* and *Core skills for population health intelligence*, are mapped to 'a skills framework for public health intelligence analysts and epidemiologists'. This is a skills framework for analysts developed by PHE in consultation with the wider public health system, including local authority public health teams. They support the development of competencies at level 1 as outlined in that framework, which is appropriate for analytical staff employed in a role up to NHS Agenda for Change Band 6 or the Civil Service HEO grade. The analyst skills framework itself is mapped to the [Public Health Skills and Knowledge Framework 2016](#).

The training available comprises classroom-based courses and e-learning. The classroom-based courses are delivered locally by PHE's Local Knowledge and Intelligence Service. The e-learning is available via the [e-Learning for Healthcare](#) website.

To access the training

The training courses outlined in this programme have been developed nationally as a standard offer across all nine PHE areas.

The specific courses run in each area are decided in consultation with the local system and are based on local need. For information on the courses taking place near you, please contact your local LKIS team.

All courses are currently free of charge to non-commercial organisations in local health systems.

E-learning modules

The e-learning is hosted on [e-Learning for Health \(e-LfH\)](#). If you have an OpenAthens account you can use this to sign in. Alternatively it is easy and free to register with an NHS or local government email address.

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Courses

From data to decisions:

These courses take delegates from the production of data and intelligence through to communication and decision support. The foundation course is targeted towards public health practitioners who use data to inform their area of practice. The core skills course is targeted at analysts with a focus on population health.

Course ID	Course	Delivery	Duration	Primary audience	Prerequisite
Foundations of population health intelligence					
F1	Introduction to public health intelligence	E-learning	30 minutes	All	None
F2	Understanding and measuring populations	E-learning & workbook	1.5 hours	All	F1
F3	A foundation course in population health intelligence	Classroom	1 day	Public health practitioners	F1 & F2
Core skills for population health intelligence					
C1	Data resources	Classroom	1 day	Analysts	F1 & F2
C2	Intermediate statistics	Classroom	1 day	Analysts	C1
C3	Applications of population health intelligence	Classroom	1 day	Analysts	C2
C4	Communicating population health intelligence	Classroom	1 day	Analysts	C3

Courses

Specialist courses:

These courses focus on a specific topic and the target audience is determined by the topic. They are offered as standalone courses.

Course ID	Course	Delivery	Duration	Primary audience	Prerequisite
S1	Health economics and prioritisation in public health	E-learning	30 minutes x 2 sessions	All	None
S2	Critical appraisal skills	Classroom	3 hours	Public health practitioners	None
S3	An introduction to Hospital Episode Statistics (HES)	Classroom	1 day	Analysts	None
S4	Data visualisation and infographics	Classroom	1 day	All	None
S5	Population health management	E-learning	30 minutes x 3 sessions	All	F1 & F2
S6	Introduction to R: with a focus on PHE packages	Classroom	1 day	Analysts	None

PHE population health intelligence tools:

These short courses each focus on a specific population health intelligence tool. They are aimed at people who need to access, use and understand PHE tools to support them in their day-to-day work.

Course ID	Course	Delivery	Duration	Primary audience	Prerequisite
T1	Public health profiles ('Fingertips' platform), using the Public Health Outcomes Framework (PHOF) as an example	Classroom	2 hours	Public health practitioners	None
T2	Strategic Health Asset Planning and Evaluation (SHAPE) Place	Classroom	2 hours	Public health practitioners	None
T3	Global Burden of Disease (GBD)	Classroom	2 hours	Public health practitioners	F2
T4	Local Health	Classroom	2 hours	Public health practitioners	None
T5	Public Health Dashboard	Classroom	1 hour	Public health practitioners	None
T6	Health economics tools	Classroom	2 hours	Public health practitioners	S1

Bespoke local training:

Each LKIS team will offer locally developed training packages in line with local needs, tailored for stakeholders. The training offered in this section will be locally determined.

Examples of bespoke local training packages include:

- training for Public Health Specialist Registrars preparing for Part A or Part B exams
- delivery of continuing professional development sessions on PHE tools and products in partnership with PHE Regions
- locally tailored training packages for other stakeholders such as the voluntary and community sector, elected members and district councils
- bespoke training for the wider public health workforce, including health visitors and school nurses

F1 Introduction to public health intelligence

This session introduces public health intelligence and provides the context for further training.

Primary audience

This session is useful for anyone who is new to public health.

It is a prerequisite for anyone attending the one-day *F3 Foundation course in population health intelligence* or the four-day *C1-C4 Core skills for population health intelligence* training.

Learning objectives

By the end of this session you will be able to:

- explain what public health and public health intelligence is
- define the key concepts in public health
- identify the main functions, organisations and roles within public health
- recognise some of the key individuals, Acts and historical events in the history of public health and public health intelligence

Delivery

30 minute e-learning module, accessible [here](#)

Prerequisites

None

Links to PHE Analyst Skills Framework

Competency	Level
Define key concepts in PH	Knowledge
Define role of UK public health function	Knowledge
Describe the historic and legal context	Knowledge
Describe the wider determinants of health and health inequalities	Knowledge
Describe the UK public health policy framework and the various organisations within it	Knowledge
Describe the process of implementation of national public health policy	Knowledge
Distinguish key features of communicable, non-communicable and environmental epidemiology	Knowledge

F2 Understanding and measuring populations

This session introduces the basic statistical concepts and measures used in population health intelligence.

Primary audience

This session will be useful to anyone new to public health, or needing a refresher on population health intelligence. It will be valuable to those working in a local authority and anyone involved in population health.

It is a prerequisite for those attending the one-day *F3 Foundation course in population health intelligence* or the four-day *C1-C4 Core skills for population health intelligence training*.

Learning objectives

By the end of this session you will be able to:

- recognise and relate data, statistics and epidemiological measures to understand populations
- identify types of variation and be aware of chance and uncertainty within public health intelligence
- interpret confidence intervals

Delivery

45 minute e-learning module, accompanied by a workbook which is envisaged to take a further 45 minutes to complete, accessible [here](#)

Prerequisites

It is useful to complete *F1 Introduction to public health intelligence* before undertaking this session

Links to PHE Analyst Skills Framework

Competency	Level
Describe and evaluate routine data sources	Knowledge
Summarise and present data appropriately	Knowledge
Describe statistical techniques to quantify sampling variation	Knowledge
Define the key concepts of epidemiology	Knowledge
Explain the application of measures of disease frequency and summary statistics	Knowledge

F3 A foundation course in population health intelligence

This course builds on the basics covered in the F1 and F2 e-learning modules, and provides opportunities for hands-on experience of using key PHE population health intelligence tools and communicating key messages.

Primary audience

This session will be useful to anyone new to public health, or who would benefit from a refresher in population health intelligence. It will be valuable to those working in a local authority and all those involved in population health.

It is primarily targeted at people who do not have an analytical background.

Learning objectives

By the end of this course you will be able to:

- access and navigate key population health intelligence tools such as PHE Fingertips, Health Profiles and Local Health
- communicate key messages derived from population health intelligence in an appropriate way to a range of audiences

Delivery

One day classroom-based learning

Prerequisites

F1 Introduction to public health intelligence

F2 Understanding and measuring populations

Links to PHE Analyst Skills Framework

Description	Level
Explain the importance of high-quality coded clinical data	Knowledge
Calculate population health indicators	Knowledge
Describe how evidence is used to inform and influence public health policy	Knowledge
Evaluate how the knowledge base is used to identify current issues in public health	Knowledge
Discuss the relative merits and disadvantages of individual and population approaches to improving public health	Knowledge
Describe the approaches to effective communication with other health professionals and policy makers	Knowledge
Discuss the impact of visual perception on the construction of data presentations for different audiences (e.g. public, patients and decisionmakers)	Knowledge
Describe the range of data presentations available (eg tables, graphs, maps, infographics)	Knowledge
Describe the principles and uses of interactive data products	Knowledge
Explain the concepts of geographic information systems (GIS) and their application to public health	Knowledge
Assess and communicate the potential risks associated with presentation and publication of health information	Knowledge

Core skills for population health intelligence

This course covers in depth the core skills and knowledge required to analyse and communicate population health intelligence.

Primary audience

This course will be useful to anyone in a new role as a public health analyst, or needing a refresher, or to those with some analysis experience but new to population health.

Delivery

Four days of interactive and hands-on classroom-based learning, comprising four separate modules:

- C1 Data resources
- C2 Intermediate statistics
- C3 Applications of population health intelligence
- C4 Communicating population health intelligence

It is envisaged that delegates will attend all four days of the course. However, at local discretion, it may be possible to attend individual modules.

Prerequisites

F1 Introduction to public health intelligence

F2 Understanding and measuring populations

C1 Data resources

Learning objectives

By the end of this module you will be able to:

- identify the range of routine data sources available and relevant to population health and how to describe and evaluate these
- explain the importance of information governance
- understand issues around data quality
- identify and understand how indicators and population health tools can be used to investigate and profile population health issues

Links to PHE Analyst Skills Framework

Competency	Level
Describe and evaluate routine data sources	Understanding
Describe the application and evaluation of clinical coding systems	Knowledge
Explain the importance of high-quality coded clinical data	Understanding
Describe the key elements and purpose of data sharing/access agreements to protect patients and the public	Knowledge
Manipulate, manage and quality assure data within a data set	Knowledge
Discuss the importance of data quality and explain how to mitigate and improve it	Understanding

C2 Intermediate statistics

Learning objectives

By the end of this module you will be able to:

- summarise data appropriately
- interpret key population health measures, and be able to calculate them
- identify and apply appropriate statistical techniques to test significance

Links to PHE Analyst Skills Framework

Competency	Level
Calculate population health indicators	Application
Summarise and present data appropriately	Application
Describe statistical techniques to quantify sampling variation	Application
Select an appropriate statistical method for analysis of data	Understanding
Define the key concepts of epidemiology	Application
Explain the application of measures of disease frequency and summary statistics	Understanding

Learning objectives

By the end of this module you will be able to:

- identify the tools available for measuring population health needs in a local public health system
- describe a range of applied analytical techniques that can be applied to understand and describe population health
- understand how population health tools can be applied to inform evidence-based decision-making

Learning objectives

By the end of this module you will be able to:

- appreciate that different audiences have different needs
- adapt the methods for presenting information for a range of audiences in order to improve their understanding of population health issues

Links to PHE Analyst Skills Framework

Competency	Level
Describe the role of communication in enabling a range of audiences to understand how the public health function leads to health gain	Knowledge
Describe the approaches to effective communication with other health professionals and policy makers	Understanding
Discuss the impact of visual perception on the construction of data presentations for different audiences (e.g. public, patients and decisionmakers)	Understanding
Describe the range of data presentations available (e.g. tables, graphs, maps, infographics)	Understanding
Select the most appropriate presentation modality for different data types and audiences	Application
Evaluate the various methodologies to communicate scientific messages to different audiences, including patients and the public	Knowledge
Create and deliver effective communications materials for scientific and lay audiences	Understanding
Assess and communicate the potential risks associated with presentation and publication of health information	Understanding

S1 Health economics and prioritisation in public health

Developed by the Health Economics team within PHE, these two short sessions introduce health economics and economic evaluation, and how they can be incorporated into decision-making. They have been designed to be accessible for delegates with no prior knowledge of economics.

Primary audience

These sessions are designed specifically to support public health staff within local authorities. Wherever possible, economic concepts are illustrated with relevant examples drawn from public health.

You are not expected to be employed in an economic analysis role to benefit from this course. Rather, the focus is on economics as an approach and way of thinking, so anyone involved in the decision-making process should find these sessions useful.

Learning objectives

By the end of the first module *Introduction to health economic concepts* you will:

- understand and be able to explain the basic principles of health economics
- be aware of how economics can be applied in healthcare decision-making

By the end of the second module *Health economic evaluations* you will:

- be able to define and explain the types of health economic evaluation most commonly in use
- understand how the differing assumptions drive results in economic evaluations
- be able to interpret the outputs from economic evaluations

Delivery

Two e-learning modules, 30 minutes per module, accessible [here](#)

Prerequisites

There are no prerequisites for these sessions, although some knowledge of public health service provision would be helpful. The second module, *Health economic evaluations*, assumes knowledge of the first.

S2 Critical appraisal skills

Developed and delivered in collaboration with PHE's Knowledge and Library Service, this course covers the basics of how to assess research evidence and apply this in decision-making.

Primary audience

This course will be useful for anyone who analyses published research literature as part of their role and who would like to bring greater rigour to that analysis.

Learning objectives

By the end of this course you will:

- have improved your confidence in understanding and interpreting research evidence for use in decision-making
- be able to describe what a systematic review is, and be able to explain its use and why it is considered reliable
- be able to critically appraise a systematic review using a structured approach

Delivery

Three hours of classroom-based learning

Prerequisites

None

S3 An introduction to Hospital Episode Statistics (HES)

Each local authority public health team is entitled to apply for access to Hospital Episode Statistics (HES) from NHS Digital, either via a data extract or through the DAE portal. This course gives an overview of HES data and its potential applications, focusing on analytical considerations. It does not cover issues of data access and system management.

Primary audience

This interactive course is specifically aimed at analysts within local authorities who are expected to access and analyse HES data in their role.

Learning objectives

By this end of the course, you will understand:

- what data items are available within HES, including both the extract and through the DAE portal
- the strengths and limitations of HES data and its appropriateness for use in population health intelligence
- the common methods of analysing HES and when to apply them

Delivery

One day of classroom-based learning

Prerequisites

There are no formal prerequisites for this course; however, delegates will need a basic knowledge of Excel.

S4 Data visualisation and infographics

This course covers the theory behind data visualisation and infographics with a hands-on practical session in which you will create an infographic for a defined audience.

Primary audience

This is an entry level course so will be useful for those new to population health intelligence, or those working with and presenting data and visualisations in their role.

Learning objectives

By the end of this course, you will:

- understand the difference between data visualisation and infographics
- understand what you need to know before designing a data visualisation
- be able to explain the different chart types for presenting data and information
- understand the four key components of a data visualisation
- be able to get your message across in the most efficient way

Delivery

One day of classroom-based learning

Prerequisites

None

S5 Introduction to R, with a focus on PHE packages

This course has been designed to help users explore and use the PHE packages available in R.

Primary audience

This course is designed for analysts looking to use PHE packages in R, including fingertipsR and PHEindicatormethods

Learning objectives

By the end of the course, learners will be able to:

- navigate around R Studio
- import and manipulate data
- import data to R directly from PHE's fingertips site
- perform basic analysis of a dataset in R, including filtering and summarising
- create basic charts using R
- calculate life expectancy and generate a DSR using R

Delivery

One day of classroom-based learning

Prerequisites

None

S6 Population health management

This programme has been developed to support analysts and other health and care professionals working in population health to build their knowledge and skills within this area. Population health management is central to the development of Integrated Care Systems and Strategic Transformation Partnerships and is a new focus of analytical work for analysts working across these partnerships.

Primary audience

This programme is useful for anyone in public health, both analysts and other health and care professionals.

Learning objectives

By the end of the first module *Introduction to population health management* you will be able to:

- define population health and population health management
- explain why population health management is important for the development of integrated care systems and providers and the populations they serve, and how this relates to the NHS Long Term Plan
- describe what population health management involves and how it can improve the health and wellbeing of our populations
- describe the common population health intelligence tools and why and when to use them
- demonstrate knowledge of the requirements for delivering population health management and how they come together

By the end of the second module *Assessing needs* you will be able to:

- describe the purpose of a needs assessment and what it provides
- explain the role of a needs assessment in local decision making
- describe different types of needs assessment and know when to use these
- describe the process of undertaking a needs assessment

By the end of the third module *A practical introduction to population segmentation* you will be able to:

- outline the technical steps required in population segmentation
- identify the main statistical methods underpinning population segmentation techniques
- understand how real world case studies have applied population segmentation methods

Delivery

Three e-learning modules, 30 minutes per module, accessible [here](#).

Prerequisites

As a pre-requisite, it is recommended that you complete both the **Introduction to public health intelligence** (F1) and **Understanding and measuring populations** (F2) e-learning modules, available [here](#).

PHE population health intelligence tools

PHE has a wide range of population health analysis tools and resources aimed at supporting local government, health service professionals and others in planning and decision-making in order to improve population health and reduce inequalities locally. Each of the following short courses introduces a tool and provides hands-on experience in using it:

- T1 Public Health Profiles ('Fingertips' platform) using the Public Health Outcomes Framework (PHOF) as an example
- T2 Strategic Health Asset Planning and Evaluation (SHAPE) Place
- T3 Global Burden of Disease
- T4 Local Health
- T5 Public Health Dashboard
- T6 Health economics tools

For some tools, you may be signposted to further self-study materials, such as short videos or webinars.

Primary audience

These courses will be useful to anyone working in population health. They will be valuable to those in a local authority and to anyone involved in health and its wider determinants, including commercial and third sector partners, clinical commissioning groups (CCGs) and emergency services.

Learning objectives

By the end of one of these courses you will be able to:

- access and navigate the tool
- utilise the functionality of the tool
- understand the relevant context or policy
- interpret and describe the output

Delivery

Classroom-based learning (typically two hours)

Prerequisites

T3 requirement - *F2 Understanding and measuring populations*

T6 requirement - *S1 Health economics and prioritisation in public health*

About Public Health England

Public Health England exists to protect and improve the nation's health and wellbeing, and reduce health inequalities. We do this through world-leading science, knowledge and intelligence, advocacy, partnerships and the delivery of specialist public health services. We are an executive agency of the Department of Health and Social Care, and a distinct delivery organisation with operational autonomy. We provide government, local government, the NHS, Parliament, industry and the public with evidence-based professional, scientific and delivery expertise and support.

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