Enquiries into Current Research in Health and Social Care
Getting to know your unit

This unit will enable you to investigate a current issue in health and social care using a literature search methodology. You will investigate the possible purposes of research in health and social care and the methods that may be used in such research.

How you will be assessed

You will be assessed by a controlled assessment, which will have two parts. Part A will be issued to you six weeks before the date of the Part B assessment. Part B will be a three-hour written assessment completed under supervised conditions.

**Part A** will consist of two articles about research on an issue relevant to health and social care. You should expect to spend approximately 18 hours carrying out secondary research based on the article, using a literature search. During this time, you will be working independently, under supervised conditions and without conferring with other learners. Your tutor will be unable to give you any feedback on your research activity during the six-week period of the Part A assessment, although they will advise you of the schedule for the supervised sessions during the six weeks. Your notes will remain in the supervised room during any breaks you take during the supervised sessions.

The first task for you to complete in the supervised sessions will be to read both articles carefully. You will then choose one on which to base your secondary research. You will then need to analyse your chosen article in depth, and find and use at least two further secondary sources for your research; focusing on an aspect of the issue explored in the article, as prompted by the qualitative and quantitative data it provides. You will be able to take notes but not take these away from the supervised room. Within the 18 hours, you will need to schedule time to prepare a) a list of all the secondary sources you use and b) up to six sides of A4 notes, which you will be allowed to take into the Part B written assessment.

**Part B** will also take place under supervised conditions and you will be presented with a taskbook containing questions about the research article you have chosen, and about your secondary research. You will write your answers to the questions in this taskbook. You will have no access to the internet or other resources during the three-hour controlled assessment. However, the Part B taskbook will include a copy of the two articles issued in Part A and you will also have the notes you prepared in advance during Part A.

- The Part B paper will be presented in two sections, one for each of the two articles presented in Part A.
- The questions in each section are different so you will need to take great care that you complete the correct section for the article you have chosen to research.
- Each section will have four questions. The first three questions each carry 15 marks and the last question 20 marks, making a total of 65 marks for the whole of Part B.
For each question, you will be provided with two to three pages of blank, lined paper to enter your responses. The first box of each section does not relate to a question and you should enter the details of the sources you have used in your secondary research.

The questions will necessitate responses that are related both to the original Part A article and to the additional secondary sources you have accessed during Part A.

Each of the four questions will require you to demonstrate that you know and understand the knowledge and concepts specified in the unit specification for all of the assessment outcomes. To achieve a higher grade, you will need to be able to demonstrate effective use of the knowledge and understanding gained from both the article and the secondary sources you have selected during Part A.

### Table 4.1: Command words or terms used in this unit

<table>
<thead>
<tr>
<th>Command or term</th>
<th>Definition</th>
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<tbody>
<tr>
<td>Article</td>
<td>The pre-released account of a piece of recent research relating to an aspect of health or social care. Could be based on a longer research report.</td>
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<tr>
<td>Ethical issue</td>
<td>Ethically related aspects that may have affected how the research was carried out.</td>
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<tr>
<td>Health and social care practice</td>
<td>Used in relation to how health and social care professionals carry out their work or job roles.</td>
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<tr>
<td>Health and social care services</td>
<td>May be used in relation to how services are provided and/or made available to the individuals that need them.</td>
</tr>
<tr>
<td>Issue</td>
<td>May be used on its own to describe the subject of the research that the article is describing.</td>
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<tr>
<td>Literature review</td>
<td>An assessment of existing research around a particular issue or area of study.</td>
</tr>
<tr>
<td>Primary research</td>
<td>Research compiled directly from the original source, which may not have been compiled before. Learners are not expected to carry out primary research, but they are expected to understand the advantages and disadvantages of different primary research methods.</td>
</tr>
<tr>
<td>Qualitative research</td>
<td>Descriptive data, such as data drawn from open-ended questions in questionnaires, interviews or focus groups.</td>
</tr>
<tr>
<td>Quantitative research</td>
<td>Data in numerical form that can be categorised and used to construct graphs or tables of raw data, such as data drawn from results of experiments, hospital data showing admissions of individuals with certain health conditions, closed questions in questionnaires.</td>
</tr>
<tr>
<td>Research methods</td>
<td>Refers to how the research described in the article was carried out, for example through quantitative methods such as analysis of figures drawn from hospitals or GP surgeries; or qualitative based on focus groups, questionnaires.</td>
</tr>
<tr>
<td>Secondary sources/research</td>
<td>Published research reports and data, likely to be based on analysis of primary research.</td>
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Getting started

Research in health and social care potentially affects the health and wellbeing of everyone at each phase of their lives. List ten ways in which research in the sector has benefitted your health and wellbeing. Share your list with a friend, adding to your lists the items you had not included and add to it again by sharing your joint list with others. Discuss in groups the type of research required to achieve the benefits you have identified.

Types of issues where research is carried out in the health and social care sector

A large amount of all the research carried out in the UK is either directly or indirectly related to the health and social care sector and much of this research contributes significantly to the country’s economy. Although much research focuses on the diagnosis and treatment of specific health conditions, it is expected that all aspects of practice in health and social care should be evidence-based. Therefore, research has a direct or indirect effect on all who work in the sector, as well as on those using health and social care services.

Purpose of research in the health and social care sector

Research in the health and social care sector has a wide range of purposes and is carried out by people who have a very wide range of backgrounds in terms of knowledge, skills and practice expertise. Research in the sector is almost always collaborative, involving those from different specialisms working together to pool their collective expertise to make advances in knowledge and understanding that may affect individuals, communities and national policies, as well as potentially bringing benefits to the health and wellbeing of individuals across the globe.

Purpose of research

Improving outcomes for people using services

Person-centred care involves continual review of the care received by individuals, to ensure that it is tailored specifically to meet their needs to the fullest extent possible, to ensure the maximum benefit to their health and social care outcomes. While some needs may be met solely by those caring directly for the individuals, more complex and specialist knowledge and services may be necessary to meet all needs fully. A service provider may conduct research to help it identify how best to meet the needs of its service users, so it can make improvements to the services offered; providing more benefit to service users or providing the benefit to more service users (see Figure 4.1). When an individual accesses a health or social care service for the first time, healthcare professionals conduct informal research, by asking questions to find out about the individual’s health, wellbeing and circumstances, to establish an accurate and detailed understanding of the individual’s health and/or social care needs. A GP questions a patient during a surgery appointment, before making decisions about treatment. A residential care manager questions a new resident, possibly with a relative present, to help ensure the home meets the resident’s needs, and to help them settle in to their new surroundings.

Key term

Research – a planned process, in which information is gathered systematically for a specific purpose in a context of existing knowledge and understanding, with the data obtained then analysed and evaluated to enable conclusions to be drawn regarding the new knowledge and understanding acquired.
Even though a professional care worker may deliver care to an individual service user, they work within a larger organisation providing services to many individuals. Professionals in the organisation may carry out research to investigate the extent to which its services benefit all the people using them. Other research may be carried out to monitor the pattern of diseases, so that the incidence of the disease across a population can be reduced. For example, Public Health England monitors the incidence of certain infectious diseases to better target appropriate prevention strategies, such as seasonal vaccination against influenza.

The health and social care outcomes sought by service users will vary, but most health and social care services are organised according to the type of service they provide. A hospital provides a range of specialist investigative services such as X-rays and scans, complex tissue or physiological tests in clinical specialties; for example, in endocrinology, orthopaedics, thoracic medicine or paediatrics. Service users access these specialist services after formal referral by their GP and a planned attendance at an outpatient appointment. However, a hospital’s accident and emergency (A&E) service provides immediate services for anyone, at any time of the day or night, to support a very wide range of needs. In each case, the health service offered differs because the needs of the service users differ.

These types of questions can be a starting point for research. Health and social care services cost money to provide, even in the UK where a founding principle of the National Health Service (NHS) is to provide most health services free at the point of delivery. In times of economic constraint, the cost of services is an influential aspect of judging their effectiveness. The NHS and some social care services are paid for by the government from its taxation income. Governments have to balance the cost of health and social care services with their spending on their other responsibilities such as education, welfare and the environment. In contrast, social care services are often paid for directly by the individuals using the service, for example purchasing the social care they receive in their own homes. However health or social care services are funded, research into ways to ensure that their provision is as efficient as possible (gives maximum benefit in terms of outcomes for individuals within reasonable cost boundaries) is currently a significant issue in the UK.
Informing policy and practice

The best policies, be they at national, local or organisational levels, are evidence-based, which means they are developed as a consequence of evidence from reliable and valid research. National policies are usually enshrined in national legislation, sometimes with associated regulations and codes of practice.

In the 1990s, there was concern about the increasing amount of evidence indicating the low standards of care provided by social care providers. This led to the Care Standards Act of 2000, which introduced, for example the concept of National Minimum Standards for Care and Induction Training for all staff.

Research may sometimes be carried out specifically to investigate practice. A recent, high-profile example is the judge-led public inquiry into the reasons behind an exceptionally high death rate among hospital patients, between 2005 and 2009, within the Mid-Staffordshire Foundation Hospital Trust. The investigation was commissioned by the government and many individuals, including staff, patients and their relatives, gave evidence to the public inquiry. In 2013, the Francis Report was produced as a result of this inquiry, and it has already led to changes in policy and practice, including:

- more ward nurses on duty in hospitals at any one time
- patient or public representatives taking part in Care Quality Commission inspections of health provision
- a scheme for training nurses in which student nurses train as health care assistants before starting their nurse training
- introduction of the NHS Friends and Family Test – a customer-service type questionnaire to gather feedback from those using NHS services.

The Francis Report made many recommendations for improving the quality of patient care. One of these was a recommendation to review of the training of health care assistants and led to the publication of the Cavendish Review in 2013, which made further recommendations regarding the training of health care assistants, making comparisons to the work of social care assistants. A key outcome from the Cavendish Review was that from April 2015 all care workers are now expected to achieve a Care Certificate.

Figure 4.2 shows possible ways in which provision and practice might be extended and, therefore, suggest themes to explore in a literature search.

Figure 4.2: Possible ways in which provision and working practices might be extended to improve health or social care services to benefit service users
Changes to policy and practice take time to develop, especially if they require legislative change leading to an Act of Parliament. Changes to working practices can be effected through the introduction of new legally binding regulations, if existing legislation gives the powers to do so. For example, a new regulation, introduced in response to a small selection of the recommendations of the 2013 Francis Report, includes hospitals being required, since April 2014, to publish monthly data relating to staffing levels on each ward (in accordance with NICE requirements), and for a named doctor and named nurse responsible for the overall care of each patient to be visibly displayed above the patient’s bed.

**Extending knowledge and understanding**

Numerous scientific discoveries have transformed medicine so that many people now survive formerly fatal diseases, or their disease is managed to enable them to live a full and rewarding life. Research in all branches of science, medicine, nursing and care has an impact on health and social care.

Research has led to a far greater understanding of the physiology of the human body, particularly in the last 20 years or so following discoveries about the detail of the human genome and how different genes work to influence the likelihood of specific diseases occurring. Such detailed knowledge is leading to the development of new treatments, which are highly specific in action, particularly for the benefit of individuals affected by inherited or rare conditions.

Technological research, involving physicists and engineers, has led to advances in health care that includes:

- development of MRI scanners, for gathering information about the body’s soft structures and how they behave as living tissue
- increasingly sophisticated equipment for hospital pathology and haematology laboratories, to speed up routine investigations allowing for earlier diagnosis of disease
- digital devices for continuous monitoring of physiological activity in the body, providing detailed information that enables better management of disease in individual patients
- using increasingly smaller devices to replace more intrusive investigations.

Research involving biochemists working with clinicians is essential to develop new drugs that are increasingly targeted at specific conditions, and even specific tissues. This approach has led to notable improvements in outcomes for patients, particularly perhaps, with regards to cancer outcomes. Cancer Research UK has reported that survival rates from some cancers have improved considerably in recent years.

Improvements in health care have been made because research has vastly increased the knowledge and understanding of the physiology of the body, the behaviour of microorganisms causing infections and led to the development of effective treatments for disease and disorders. Research over the last 100 years or so has also led to a better understanding of the social and psychological factors affecting health and wellbeing, so that there is now a better understanding of how to support ill, frail or vulnerable people, lessening the negative effects on their health. See also Figure 4.1.

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**Research**

In groups, identify landmark discoveries that have transformed health and social care. Create a timeline to sequence them chronologically, and note their impact on the health and social care of individuals.
Identifying gaps in provision

Communities change over time for a variety of reasons, such as changes in local employment opportunities bringing new people to an area, families moving in and growing up, and young adults eventually moving on and leaving older adults in the family home. These changes alter the population profile of a community. For example, the health and social care provision originally planned to meet the needs of families with young children may no longer be appropriate 30 years later when most people remaining in the area are older and have different health and social care needs.

Other examples of how research might identify gaps in provision could include:
- patient and relative perception surveys (perhaps involving the Patient Advice and Liaison Service (PALS))
- monitoring the level of demand from those needing a health or social care service, to highlight whether the amount or scale of provision needs to be changed
- comparing the location of those requiring the provision to the actual location of the services
- data gathered by support networks working with those affected by specific diseases, disorders and social issues
- assessing the impact of innovations in treatments and care on the type of provision available
- assessing the impact of changes in population for health and social care services, eg building a large housing development.

Gaps in provision tend to arise when there is an increased demand for services, for example a new policy initiative can give rise to a need for a new service. Examples of how gaps in services may arise include the following:
- In 2013, the government agreed that family doctors in England could pay other doctors to provide out-of-hours services on their behalf. This policy change now means that in most areas in England out-of-hours health care is provided by a team of doctors covering a far larger geographical area than local GP practices cover. This means that the doctors on call are highly unlikely to know the service users they visit.
- A gap in provision may arise because of an increase in the incidence of a particular disorder that means specialist services to manage that disorder are required to a greater extent than formerly.
- In recent years, there has been a trend in England for accident and emergency services to be concentrated in fewer but larger centres. Meaning that whether individuals live in a city or a rural area, they have to travel further to access this service. Hospitals formerly providing emergency services may now only provide cover for ‘minor injuries’ as this type of care needs lower levels of expertise. This results in the highly skilled and trained experts in acute emergency care moving to the new, more distant, emergency care hospitals.

Research in health and social care can identify the scale of gaps in provision and help to indicate how the gap could be addressed. Figure 4.3 shows a range of different types of health and social care and potential ways in which the provision might relate to the health and wellbeing of individuals using health and social care services.
As the examples suggest, making changes to address gaps in provision can be controversial, and the issues involved are likely to make local news headlines. Clinical Commissioning Groups (CCGs), local authorities, local residents and patients groups may all be involved. Each local health area has a CCG that decides how NHS money allocated by central government will be spent on local health services. Health and care professionals may contribute to the planning of the new or changed provision, but their personal work schedule and practices and their work team are likely to also be affected.

**Examples of research that have improved practice and policy**

A large amount of research carried out in the UK, and in other economically developed countries, is focused on health. Governments are concerned that taxpayers money is used as effectively as possible to maintain the health and wellbeing of individuals and communities. In relation to health and social care, some of the practices that have been changed in recent years as a result of research include:

- use of antiseptic gel by all clinical staff and visitors on entry to clinical areas, eg a hospital ward, an out-patient area, care home or dental practice, to reduce risk of infection
- hospital doctors no longer wear white coats or ties, and cannot wear sleeves below the elbow, again, to reduce the risk of spreading infection
- transferring responsibility for public health from the NHS to local authorities, so that policy can be more effectively targeted for local circumstances
• closer co-operation between speech and language therapists and teachers, to assist the communication and language development of young children who have speech and language difficulties

• provision of intermediate care to help individuals who have been hospitalised for a long period regain their confidence, to cope with a return to independent life in their own homes.

**PAUSE POINT**

What have you learned in this section about the purpose of research in the health and social care sector?

**Hint**

Draw three mind maps, one for each of the four main purposes discussed in the section, to show examples of current issues in each category. (It might be helpful to include these in the notes you pre-prepare for Part B).

**Extend**

What are the challenges of carrying out research in the health and social care sector?

### Issues

People are likely to have health and social care needs at some stage in their lives. This means that at any one time, many people are likely to be interested in one or more issues relating to some aspect of health and social care. They might be parents concerned that their young children grow up healthily, or middle-aged people concerned about their care as they age. Many of the issues of interest to members of the public have some element of controversy associated with them. Controversy can arise when professionals and experts hold different opinions about the issues or see them from different perspectives.

Examples of how an issue may be controversial could include:

• an individual using a health and social care service perceives the care received differently from the people providing the service

• nurses may perceive the effectiveness of a change to a new care procedure differently from doctors

• doctors working with one group of patients may observe different effects of a new health intervention than other doctors working with a different patient group

• health risks that affect individuals directly, or those close to them, may be perceived differently from how the professionals responsible for the health of the whole population perceive them

• scientists working in a government agency or department interpret research evidence differently from a business looking to make a new product as a result of the research, or from a pressure group representing a specific socio-political perspective.

Figure 4.4 indicates some of the issues in the health and social care sector that are current at the time of writing. You could explore some of these as examples to develop your understanding of research processes, and how they are applied to research in the health and social care sector.

Researching into a health or social care issue involves exploring different aspects of the issue. The information gathered from any research is known as data. The articles and other sources you look at when researching issues will present several pieces of data about an issue and synthesise arguments from this data to reach a conclusion. Your task as a researcher is to undertake a literature search to explore their research in more detail.

**Discussion**

In small groups, explore and discuss the possible different perspectives around these issues:

• the effects on children of playing computer games

• caring for older people living alone.

What are the different perspectives? Why do the different perspectives on an issue arise? How might the different perspectives affect individuals? What research evidence can you find to support any of the perspectives you identify?
The data you collect is likely to be a mix of factual information, abstract concepts or theories and opinions. Your task as a researcher is to gather data from different sources, relevant to the issue you are researching. You will then need to analyse and evaluate the data from each source you have gathered separately. You will then be in a position to select and blend the data together to synthesise your own arguments about the issue and draw your own conclusions, based on the arguments you have developed.

All researchers need to be aware of the quality of the data they collect and take this into account when analysing and evaluating it. The **validity** and **reliability** of data are two particularly important factors when determining the quality of data.

### Key terms

**Data** – information that could be measurements, opinions or concepts. It is a plural word, but its singular, datum, is rarely used.

**Validity** – a measure of the quality of data, information and concepts and how well any claims made are supported by evidence.

**Reliability** – a measure of the quality of the methods used to obtain data, and the extent to which the same result would be obtained if someone else repeated the research using an identical method.

It is important to define a clear **aim** for a research study, to ensure that it is purposeful and focused. How many different issues are researched in any one study will vary according to the purpose of the study. Each aspect of an issue investigated in research is referred to as a **line of enquiry**. A literature search should aim to identify several possible lines of enquiry that lead to the development of new **lines of reasoning**.

After detailed analysis of each source in relation to the line of enquiry, the researcher should use the lines of reasoning to develop contrasting **arguments**, which are evaluated against the overall aims of the research and the evidence gathered, leading to **conclusions**.
Good research will reveal other lines of enquiry for investigation, leading to the need for further research in another study. A good researcher will identify these as recommendations for further investigation. Figure 4.5 provides a visual representation of the thought processes you will need to go through.

**Key terms**

**Aim** – an overall goal or target to be achieved. An aim should relate to a defined purpose.

**Line of enquiry** – a specific focus for research that relates directly to a larger topic or issue.

**Line of reasoning** – systematic exploration of reasons to support the development of an argument or point of view.

**Arguments** – contrasting lines of reasoning that are synthesised systematically to develop a conclusion.

**Conclusion** – a concise statement based on evidence and reasoned arguments that summarises key findings from an investigation.

**Recommendations** – specific suggestions for future action.

**Figure 4.5**: A generic overview of a literature search relating to a health and social care issue, representing the relationship between the issue and possible lines of enquiry, lines of reasoning or argument that might be developed from them, leading to recommendations for health and social care practice and further research.
Health conditions
Much research relates to specific health conditions, in order that those affected by the condition can benefit. Research over the last few decades has, for example, led to:
- greatly increased survival rates from several types of cancer
- treatments for infertility
- key-hole surgery techniques, reducing the need for more invasive (serious/risky) surgical operations
- new vaccinations to prevent harmful infectious diseases, eg meningitis C, Ebola, Zika virus
- increased survival following HIV infection.

An issue relating to research into specific health conditions is that the cost of, for example, developing new treatments for one condition can be very high indeed. The benefit to individuals affected by the condition may be considerable, and even life-changing. However, the issue that then emerges is how the costs associated with the new treatment will be paid for if the treatment is only of benefit to a relatively small proportion of the population.

Effectiveness of treatments
Issues relating to specific health conditions are likely to focus on the effectiveness of possible treatments, patterns in the incidence of the condition and the possible ways in which the risk of being affected by the disorder can be reduced. The specific needs of one individual with the same health condition may be similar to those of others but, before a new treatment or care routine is introduced for everyone, it is necessary to carry out a specific study, or research project, to investigate whether there are benefits to others.

Many organisations, often charities, are dedicated to improving the care of individuals with specific diseases and disorders through research. Their research may focus on better diagnosis so that needs can be identified earlier or more specifically, such as through screening, or by researching physiological aspects of the disease to enable better targeting of treatment in body systems. For example, 2.5 million people in the UK have type 2 diabetes. Diabetes UK spent over £6 m on research in 2009. Its website provides considerable information about its diabetes research. Healthcare professionals, commercial companies and others who work in the NHS frequently contribute to this type of research.

Some homeopathic remedies may be prescribed under the National Institute for Health and Care Excellence (NICE). However, many medical experts question the reliability and validity of research into the effectiveness of homeopathic remedies, so the use of homeopathic remedies, and other alternative therapies, to treat serious illnesses, such as cancer or diabetes, remains controversial.

Research to investigate the effectiveness of medical treatments is subject to strict rules issued by NICE. New drugs are subject to double blind clinical trials with patients, only after they have been tested comprehensively on animals. Such trials involve measuring patient responses to the trial drug against responses from patients given a placebo and are conducted, as far as is possibly using a scientific method (see the section on Research methodologies).

Even if research trials prove that a new drug is effective in helping to treat a disease, it may not be approved by NICE for prescription by the NHS because of its cost, or because of the risk of undesirable side effects. The decisions made by NICE can sometimes in themselves become a current issue.

Research
Investigate the incidence of a common disorder such as lung cancer, type 2 diabetes, heart disease or dental decay. What are the trends in the incidence of the disorder? What information can you gather from secondary sources that might explain the changing trends in the incidence of the disorder?

Key terms
NICE – the National Commission for Health and Care Excellence; the government organisation that defines the standards expected for health and social care.

Double blind clinical trial – a research technique for testing the effectiveness of a new drug in which patients taking part are allocated at random to one of two groups: one given the test drug and the other a placebo. Neither the patients taking part in the trial, nor the doctors and professionals caring for them, know whether they are receiving the placebo or the test drug.

Placebo – a medical prescription deliberately made to look like, and be administered identically to, a real drug but which contains no medically active ingredients.
Health trends and reasons for trends observed

The incidence of specific diseases varies over time. For example, death from infectious diseases was very common before the introduction of antibiotic treatments in the 1940s and many people died from infectious diseases that are extremely rare now. When the NHS was established in 1948, people did not expect to live more than a few years beyond retirement age (65 for men and 60 for women). Research has produced treatments for many common diseases and disorders, so average life expectancy in the early twenty-first century in the UK is now more than 80 years. However, as a result of living longer, people living in the developed world are now affected more by different diseases, particularly those that are slow to develop and usually only become evident in later life. Dementia and most cancers, for example, are more prevalent in old age.

Diseases that previously led to premature death are now successfully managed with medication and have become chronic rather than acute diseases. In 1948, type 2 diabetes was relatively uncommon but Diabetes UK (2015) predicts that 5 million people will be affected by it by 2025.

However, it is increasingly the case that individuals with diabetes may also be affected by other chronic conditions such as hypertension, early-stage dementia, chronic obstructive pulmonary disease (COPD). This has an impact on the type of services an individual might need and, therefore, how services might best be organised to be efficient for both providers of the service and users of it.

It takes several years to develop major health and social care services, such as building a new hospital or nursing home. Reorganising services to adjust to changing needs of communities also takes considerable time. Health and social care services are expensive because they are labour-intensive. The government, local authorities and private organisations (who tend to own and operate residential care provision), have to plan in advance so that they have the finance available to pay for developing new services.

Those responsible for planning service provision, such as the NHS and local authorities, need to predict the demand for services several years ahead, so that they have sufficient time to make the changes needed to meet future demand. Pharmaceutical companies also want to know what the demand for any new drug they develop is likely to be. For example, will there be sufficient demand to justify the extremely high cost involved in developing a new drug?

Gathering data regularly to monitor the incidence of different diseases and disorders is essential to enable the government, industry and private care providers to forecast the needs of a community and deliver appropriate services where they are most needed.

This highlights the importance of long-term planning, to ensure that the health care needs of individuals that are not currently evident, but which research indicates may develop at some time in the future, can be met when they do develop.

### PAUSE POINT

What is a health and social care issue? Can you give some examples of current issues?

**Hint**
Consider the examples mentioned in this section.

**Extend**
Choose one current issue of relevance to health and social care and develop possible lines of enquiry that you might use to investigate the issue in more detail.
Strategies for reducing likelihood of health risks, and their effectiveness

The NHS is responsible for providing health care services for those living in the UK. Local authorities (county unitary authorities) currently provide some social care services and local councils (district and town councils) have responsibilities for environmental health, such as refuse collection and pest control. Each of these public organisations is responsible for providing specified information to monitor trends in the health and wellbeing of the population it serves, to enable appropriate services to be planned to meet the projected demand.

A strategy is concerned with long-term planning. Knowing which disorders are increasing in prevalence, which groups are most likely to be affected and where people likely to develop a disorder are geographically, helps the authorities target their activity where it will have greatest impact on health and wellbeing. In addition, scientific, technological and clinical research is developing better understanding of the causes of a wide range of diseases and disorders so that the risks associated with each are better understood. Health risks can be reduced by reducing the severity of the effects of the disease or disorder, through better treatment or management of symptoms, or by reducing the risk of getting the disease or disorder in the first place.

Strategies are usually developed by the senior managers in an organisation. They provide a framework for staff in the organisation to contribute to the strategy in the context of their own job role and responsibilities. Local health and government authorities have ongoing strategic plans that are reviewed annually and updated to adapt to emerging factors, for example changing policies or environmental circumstances. Large and complex change will also be part of a longer-term strategy, perhaps as part of a five- or even ten-year plan. Planning for and constructing a new hospital, for example, is likely to be part of a longer-term plan.

Lifestyle factors

Most people are aware from the media, if not also from their doctor, that lifestyle factors may influence their health and wellbeing. Diet, exercise, recreational drugs, alcohol, and stress levels are factors over which individuals may have some choice and control. Individuals may have less control regarding some other lifestyle factors such as housing/where they live, or the type of work they do.
One of the most famous studies carried out in the 1940s and 1950s by Richard Doll and others (1965) provided convincing evidence that smoking was a strong risk factor for lung cancer. Survival times for lung cancer are still relatively short. Since the 1960s, there have been many active campaigns to discourage smoking and Cancer Research UK reports that the incidence of lung cancer is now declining. Government statistics show that the number of people who smoke is now far lower than it was fifty years ago. Many lifestyle factors have been acknowledged as having an effect on health and wellbeing (see Figure 4.6).

The effects of lifestyle factors on health and wellbeing have been a major focus of research in recent times. However, because lifestyle factors may change over time, they are often interrelated and there is considerable natural variation in the way individuals are affected by any one lifestyle factor, research studies need to be carefully designed if they are to provide convincing evidence of the effect of any one lifestyle factor on health. Because there are many lifestyle factors that can affect health, and it can take decades for the effects of the lifestyle choices made by an individual to become apparent, research in this area necessitates long-term monitoring of individuals and is, therefore, difficult and expensive to carry out.

To overcome this problem, some researchers have adopted highly sophisticated statistical techniques to pool comparable quantitative data from multiple, previously published research reports, and re-analysed the data to demonstrate more strongly the links between health and lifestyle. This process is called meta-analysis, and you may encounter reference to this technique in your reading for this unit about research studies. You are not expected to know any more about this technique than is outlined here.

The secondary sources you will be expected to access and make use of in your literature search for this unit may refer to meta-analysis but they are most likely to be reporting on primary and secondary research, in which the research methodologies used are either those of scientific method or social science methods. Your literature search should indicate that you are aware of the multifactorial influences of lifestyle factors and how that might affect the validity and reliability of any results and conclusions drawn from the research.

**Age groups affected by different lifestyle factors**

Some diseases affected by lifestyle are more common in different age groups. Diseases that usually take a long time to develop, such as heart disease or type 2 diabetes, tend to be more prevalent in older age groups. This is because they develop only after the lifestyle factor, for example lack of exercise or a poor diet, has been in place over many years. However, Diabetes UK (2015) reports that type 2 diabetes is beginning to appear in younger adults and older children, almost always because the young person is obese.

Some lifestyle related disorders are more common in children, perhaps because of childcare practices. A Public Health England (PHE) report in 2014 found that up to 19 per cent of 3 year olds in the East Midlands had some dental decay, in the South East the figure was lower, with only between 5–9 per cent of 3 year olds showing signs of dental decay. The PHE report suggested that the high incidence of dental decay in such young children was linked to the consumption of sugary drinks.

The mental health condition of depression has long been recognised in adults, perhaps associated with bereavement or living alone. Depression is now also being recognised with increasing frequency in younger age groups, possibly because children and young people experience more stress than they used to.
Impact of lifestyle factors on health and social care needs

Health conditions most often associated with lifestyle factors include:

- endocrine disorders such as type 2 diabetes, pancreatic cancer
- respiratory disorders such as congestive pulmonary failure, lung cancer
- cardiovascular diseases such as high blood pressure (hypertension), heart disease, stroke
- dietary disorders such as being overweight, obesity, anaemia, vitamin deficiencies
- alcohol related disorders such as cirrhosis, Lewy body dementia, oesophageal varices
- addictions leading to mental health disorders, self-neglect, neglect of other family members particularly children
- skin disorders such as melanoma
- musculo-skeletal injuries such as fractures and soft-tissue damage from reckless driving, sports and other high risk leisure pursuits.

National Child Measurement Programme (NCMP)

The NCMP takes place in England and the Health and Social Care Information Service and PHE publish an annual report for each academic year. Primary school children in reception year and in year 6 have their height and weight measured to calculate their body mass index, to determine the extent to which some children may be overweight or obese.

The NCMP report for the academic year 2014/15, published in November 2015, involved more than a million children. Results showed that more than a fifth (21.9 per cent) of children in reception year are overweight or obese, and that in year 6, a third (33.2 per cent) of children are overweight or obese. Data is analysed by local authority area and the report indicates considerable variations in different areas, with almost double the proportion of children being obese or overweight in schools serving the most deprived neighbourhoods compared with those serving the most affluent areas.

The effect of deprivation is even more marked in the figures for obesity alone, where in reception year only 4.2 per cent of children from affluent areas are obese, compared with 13.6 per cent of children living in deprived areas. Similarly for year 6 children, the figures were 10.5 per cent from affluent areas and 27.8 per cent from deprived areas.

Check your knowledge

1. Why might it be useful to routinely monitor the BMI of children at the start and end of their time in primary school?
2. How might the data generated by the NCMP benefit children currently in primary school?
3. What might be the implications for health and social care service provision in the future if the children's BMIs remain the same or increase as they grow into adulthood?
4. What further research could be carried out to investigate reasons for the differences in the incidence of obesity and overweight in affluent and deprived areas?
Individuals affected by any one of the conditions listed will require health care advice in the first instance; and most will require at least medication, probably long-term. Some conditions may require planned surgical procedures and in some cases, the health condition may involve sudden-onset symptoms, which require emergency treatment in hospital. In 2014, Diabetes UK claimed that treating diabetes cost the NHS £10 bn each year and that this cost was largely due to treating the complications of diabetes such as amputations and renal dialysis.

![The proportion of diabetes spending on complications and treatment]

Figure 4.7: Complications of diabetes lead to increasing health care needs

The issues associated with the impact of lifestyle factors on health care are based on the assumption that an individual makes an active decision to follow a particular type of lifestyle. This may be true for some individuals, but usually individuals who make active choices about their lifestyle choose healthy ways of living their lives – perhaps making healthy choices about diet or deliberately building regular exercise into their daily routines. Counterarguments could be put, however, regarding individuals whose lifestyle is less healthy – they perhaps do not make an active choice to pursue an unhealthy lifestyle. Instead their circumstances mean they are more vulnerable to making less healthy lifestyle choices. Therefore, the negative effects of these choices are not really choices at all, but consequences of the factors giving rise to their vulnerability. For example, people with limited incomes are more likely to buy cheaper food, but cheap food can be less healthy, or maybe their living accommodation has limited cooking facilities and it is easier to choose a fat-rich, ready meal than to cook a meal from raw ingredients.

Effect of lifestyle on demand for services

Given that lifestyle affects health and wellbeing, it is not surprising that the lifestyle choices made by individuals can affect that individual’s need for health and social care services. The effects will depend on whether their lifestyle choices are more likely to promote greater health and wellbeing, or whether their lifestyle choices lead to a decline in health and/or social wellbeing.

The overall trend in the UK is that the lifestyle choices of many individuals are such that they are leading to greater ill-health and, therefore, to a significant increase in the demand for health and social services. For example, the increase of type 2 diabetes in middle-age – and which continues into older age. More people are in need of mental health services, which is partly associated with the increased expectations of contemporary life leading to higher stress levels.
When the NHS was founded in 1948, its priority was to enable everyone to receive treatment for unavoidable diseases. Now, over sixty years on, research has found ways of treating many of these diseases successfully, or of managing them so that affected individuals can lead more active and longer lives. Now that some diseases are much more attributable to avoidable lifestyle factors, treating the health consequences of lifestyle choices is a major issue. For individuals, the effects of these diseases can severely limit their quality of life, so more social care is required. For the NHS, the complications of disorders of a poor lifestyle are considerable and expensive to treat.

Strategies for reducing the consequences of lifestyle factors for health and social care service provision focus on reducing the likelihood of individuals being affected by them. Examples of strategies that are used include:

- health education programmes in schools and community centres, for example for parents expecting their first child
- specific public health campaigns, for example to raise awareness of the dangers of prolonged exposure to sunlight
- legislation, for example to limit the use of sunbeds to adults only, banning of smoking in indoor public spaces
- targeted provision of key information for consumers, for example labelling foods with nutritional information, labelling wine and beer with alcohol strength, placing photographs of the health consequences of smoking on cigarette packaging
- providing reliable, impartial and evidence-based information about health matters through the internet, for example websites from government, health and social care professional bodies, regulators, not-for profit organisations and charities
- educating individuals with a specific condition to better understand their condition, so they can manage their signs and symptoms more independently, for example finger-prick blood glucose testing and self-administration of insulin for treating diabetes
- empowering pharmacists in retail outlets to take a more active role in advising individuals about their health
- collecting statistical data about the population on a regular basis and analysing it to identify trends in health, so that services can be reconfigured to meet changing needs, for example community-based provision rather than hospital-based; or changing policy such as health promotion targeting dental care for weaning babies and toddlers, and school-aged children
- taxation to limit lifestyle choices that are harmful to health, for example taxes on alcoholic drinks, tobacco products and possibly, in the future, on drinks high in sugar.

Investigation into the effectiveness of any one of these strategies could form the basis of a literature review research.
What are the issues likely to be encountered when researching lifestyle factors in relation to health and social care?

**Hint**

Focus on two or three lifestyle factors, their potential consequences for health and care needs and, therefore, for health and social care services.

**Extend**

How could research be used to reduce the negative effects of lifestyle choices on the health and social care sector?

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**Social care and welfare needs**

All health or social care workers involved in care planning, use research principles routinely to identify the needs of individuals. The medical ‘history’ of a patient taken by a doctor during an initial consultation, requires the doctor to apply medical knowledge to identify the cause of the patient’s problem so that their needs can be met effectively. The doctor may gather more quantifiable evidence from laboratory investigations such as blood tests or visual evidence from X-rays or scans. A health care assistant conducts research by measuring pulse rate or blood pressure at predetermined intervals to check on variations in a patient’s wellbeing, as well as observing the patient for visible signs of any symptoms, eg pain or discomfort. A care home manager observing an individual resident may identify that they may need more assistance with personal care and discuss this with the individual and care staff. The information gathered enables professionals to make decisions about treatment or care to better meet an individual's needs.

**Care and support practices for individuals**

Since 2012, NICE has been responsible for defining the standards relating to social care as well as to health care. NICE is developing a set of quality standards for a wide range of specific aspects of health care, public health and social care. Each quality standard defines how different aspects of the care process should be carried out. The quality standards are reviewed annually and referred for revision or amendment, according to the evidence supplied by key stakeholders such as patient/service user organisations and regulators (CQC, Ofsted). The stakeholders provide evidence about practices that are particularly effective. NICE invites comments from the public and key stakeholders on the draft standards it produces before they are finally published. NICE quality standards are, therefore, evidence-based.

While the quality standards set by NICE are not mandatory, the intention is that they define a higher standard of care practice than the Care Quality Commission's Essential Standards. The aims of the standards include:

- supporting the provision of care that has been shown to work and to be cost-effective
- ensuring a more consistent approach to social care provision across the country
- supporting the development of joined-up working between agencies and professionals
- helping the social care sector demonstrate its importance as a key partner in the provision of care
- raising the profile of social care.

At the time of writing, the majority of the published standards relate to health care and very few relate to social care. However, over time, NICE is likely to publish more quality standards relating to social care. It will also update existing standards and publish new standards for health care. It could be useful to ensure that you are aware of the standards that are current at the time of your studies.
Success of care and support practices in promoting individuals’ independence and wellbeing

Care and support practices are continually changing as new technology and treatments emerge. The professional codes underpinning health and social care practice in the UK increasingly expect that any new practice introduced is formally assessed with regards to its effectiveness. This is usually done through research, often carried out in the first instance on a small scale, in a particular health or social care context. Changes to procedures, modifications to job roles, introducing a different skill mix to a team, development of a new protocol for assessing a particular need should each be systematically assessed to gauge the extent to which the change introduced is helpful or not. By reporting the research in a practice journal or magazine, the research is made available to others and provides evidence on which others working elsewhere – possibly in different professional contexts, with different service users, or in different care environments or service provision – can justify adopting the same change. Studies such as these are examples of action research, which has a valuable role in contributing to health and social care research. If a practice innovation becomes widespread, then a much larger research study may be useful for a more formal assessment of its value.

Key term

**Action research** – systematic study, usually on a small-scale, that investigates the impact of a specific activity that is carried out as part of a normal work role. Action research is particularly practiced in education and in health and social care contexts.

Care and support practices that promote an individual’s independence might involve action research such as:

- how and where clothes are laid out or presented to an individual affected by painful arthritis, to enable them to dress with greater independence
- changing the time of day when residents of a nursing home are asked to make their meal choices for the next day, so that they are more alert and responsive when making a choice independently
- developing a routine for ensuring the availability of a potty to a toddler in nursery who is being toilet trained
- changing the arrangement of furniture around a hospital bed, so the patient is always able to reach a drink
- testing an improved technique in using a new slip sheet, so that post-operative patients can be transferred from a trolley to a bed more smoothly
- changing the layout of a day room, so that the increased number of residents using walking frames have more space to move about without disturbing others, while still enabling communication between the residents.

Services provided for individuals with specific needs and the effect of these on individuals’ wellbeing

NICE has also published a quality standard for the support of individuals with specific needs. This follows particularly from the Winterbourne View scandal, in which abuse was inflicted routinely on adults with learning disabilities living in a residential care home near Bristol. The abuse was filmed undercover and then broadcast in a BBC Panorama programme, which brought the abuse to public attention. Staff were prosecuted and received prison sentences, the company running the home was fined and the home closed down.
Individuals with specific needs can often be particularly vulnerable members of society and the Protection of Vulnerable Adults (POVA) Regulations recognise this. Having specific needs indicates that these individuals have more difficulty than most people in coping with everyday activities. Children, especially those with multiple and profound disabilities, and adults with learning disabilities and/or physical disabilities will have specific needs. They need special assistance with some or all activities of daily living, possibly throughout each day, especially if they need help with personal care such as bathing, toileting and dressing, which can add to their vulnerability.

**Link**
Refer to *Unit 7: Principles of Safe Practice in Health and Social Care* to find more information about care for vulnerable adults, children and young people.

### PAUSE POINT

Develop a mind map to summarise possible issues relating to social care and welfare needs.

**Hint**
Make use of any work experience you may have had in working with individuals with specific needs.

**Extend**
Add notes to your mind map in the form of questions, to suggest possible lines of enquiry you might develop in relation to issues relating to social care and welfare needs.

### Assessment practice 4.1

In 2014, a Care Quality Commission report reviewed dementia care in care homes and in hospitals by examining the quality of care received by individuals with dementia. The investigation found that 90 per cent of the providers reviewed showed aspects of variable or poor care delivery. Other findings are summarised in Table 4.2

> **Table 4.2:** Dementia care in homes and hospitals (source: www.cqc.org.uk/sites/default/files/20141009_cracks_in_the_pathway_final_0.pdf)

<table>
<thead>
<tr>
<th>Aspect of care provision</th>
<th>Care homes (%)</th>
<th>Hospitals (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Providers working together</td>
<td>27</td>
<td>22</td>
</tr>
<tr>
<td>Involvement of families and carers</td>
<td>33</td>
<td>61</td>
</tr>
<tr>
<td>Staffing</td>
<td>27</td>
<td>56</td>
</tr>
<tr>
<td>Monitoring the quality of care</td>
<td>37</td>
<td>28</td>
</tr>
</tbody>
</table>

1. **Select two** other secondary sources relevant to the data in this report.
2. **Explain** how **three** recommendations you select from the report relate to the evidence presented in the report.
3. **Analyse** the issues associated with caring for those with dementia, referring to the additional sources as well as the report above.
4. **Evaluate** how findings from the report might lead to improved care for those affected by dementia, using other sources you have researched independently to support your arguments.
Research methods in health and social care

Being able to undertake research is an essential part of the work of all healthcare professionals. Research is included in the undergraduate training that healthcare professionals must undertake to gain their professional status, as it is in all undergraduate programmes. As part of your BTEC Level 3 National in Health and Social Care, you are also required to research issues for your assignments. Gaining an understanding of some aspects of research methodology will equip you with skills that you will find both helpful for your studies now and also useful preparation for higher education, training or employment in health and social care.

This part of the unit introduces the principles of research methodology appropriate for your BTEC National studies by equipping you with the knowledge, understanding and skills needed to undertake a literature search into a current health and social care issue, which forms the basis of the assessment for this unit.

Research methodologies

As you have established in the previous section, research in the health and social care sector has a wide range of purposes. It is carried out by people who similarly have a wide range of backgrounds, in terms of knowledge, skills and practice expertise. Research in the sector is, therefore, almost always collaborative. It involves professionals from different specialisms working together to pool their collective expertise to make advances in knowledge and understanding that may affect individuals, communities and national policies, as well as bringing benefits to health and wellbeing worldwide. However, even if working alongside others, each individual researcher will need to be fully aware of the current body of knowledge in their own subject specialism, as it is relevant to their involvement in research projects.

Research in health and social care is planned and carried out by professionals who are experts in research methodology as well as in health and social care. It often involves research in which data is obtained directly from patients and users of health or social care services, their relatives and from other professionals working in the sector. Such research is primary research and generates primary data from observation, measurement or experiences, enabling it to be verified. Such data is known as empirical. However, there are issues around primary research in health and social care. For example, it is expensive, it may need to be drawn out over several years and it may interfere with an individual’s treatment or the service they receive. Additionally, ethical considerations that apply in many advanced countries means that primary research can only be carried out by professionally qualified researchers. Also, the field of knowledge relevant, especially in the healthcare sector, is vast. As a result in recent years, research that is based entirely on accessing published data, but which makes new connections to draw new conclusions about one aspect of health and social care practice, has become a valuable approach. Such research is known as secondary research as it uses secondary sources.

You will only be required to carry out secondary research as part of your BTEC National in Health and Social Care. Learners at this level are unable to carry out primary research in health and social care, for ethical reasons (see page xxx). The focus of your research will be on how research informs health and social care services and provision. You are not required to undertake secondary research involving technical or complex science-based research reports, though you may use them if you are

Key terms

Primary research – data contributing to the conclusions drawn is generated as a consequence of scientific method, or by the researcher obtaining personal information directly from individuals.

Empirical data – verifiable data obtained by observation, measurement or from experiences.

Secondary research – data contributing to the conclusions drawn is retrieved from previously published sources.
confident about understanding them. It would be appropriate and relevant if one of your lines of enquiry focused on the extent to which the issue is relevant to your home country; given that the organisation of health and social care services in England, Wales, Northern Ireland and Scotland is different, even though the NHS operates throughout the UK and some legislation applies in all four countries.

**Qualitative and quantitative data**

Research involves the formal collection of information. The information gathered is known as data. Research methodologies tend to generate data that is either qualitative or quantitative and both types of data are valuable in health and social care.

**Qualitative data**

Information that can only be described using words is known as qualitative data. Several research methodologies that are used routinely as part of health and social care delivery are qualitative. A health professional's preliminary perspective about the nature of a patient's health problem will be partly informed by observation of the individual's appearance such as whether they look flushed and sweaty, pale or bluish coloured, drawn and strained. The simplest laboratory investigations to prove or disprove the presence of an infection rely on observing a specimen taken from the patient, for example a sample of urine, or tissue gathered on a throat swab, and viewing it under the microscope for the presence of bacteria. Health and social care research that involves investigating events, behaviour or emotions is likely to adopt research methods such as interviews and observations to generate qualitative data. These methods, if carried out on a large enough scale involving many participants, may generate data that can be quantified for analysis, for example recording the frequency with which a particular behaviour is exhibited.

פרסם Figure 4.9: Observation in a laboratory can have a valuable place in research, such as looking at changes to cell structure in a tissue sample

Few research projects are established on a sufficiently large scale to enable processing of large amounts of qualitative data, though the National Child Development Study (NCDS), which has been ongoing since a group of children were born in one week in March 1957, is sufficiently large to enable some quantitative analysis of qualitative data.
Obtaining qualitative data is time intensive. One in-depth unstructured interview involving one participant may take several days to carry out, and observations may involve a sequence spread over months, or even years, as in the NCDS project. In both cases organising and analysing the data collected is also time-consuming. Nonetheless, research in health and social care often includes gathering qualitative data.

**Quantitative data**

Quantitative data is based on numbers and physical measurements that can be quantified objectively using a measuring device, for example weight scales, height rules, thermometers, blood pressure monitors or other specifically designed measuring instrumentation. ‘TPR’ measurements (temperature, pulse rate and respiration rate), blood pressure, weight and height are probably the most common quantitative data used routinely in health and social care environments. Other examples of quantitative measures that are valuable in health and social care include:

- population statistics showing, for example birth, morbidity and mortality rates
- chemical analysis of body fluids, such as urine and blood plasma, carried out in a hospital biochemistry laboratory
- cell counts, such as the proportion of different blood cells in a sample of blood, carried out in a haematology laboratory.

Unless measuring a simple number, for example the number of people in a population, every quantitative measure is incomplete unless it is also presented with the units of measurement. For example, stating deaths per 1000 means nothing unless it is put within a time scale, for example 1000 deaths per year, or 1000 deaths per 100,000 population. A ‘rate’ is a measure of a change over time, so 1000 deaths per year. Physiological measurements are usually recorded as breaths per minute, pulse beats per minute, passing 200 ml of urine per hour and so on. Blood pressure measurements are usually presented in mm of mercury (mm Hg).

Quantitative data can be presented visually in tables, graphs and charts. Presenting quantitative data visually is convenient for large data sets (measurements of the same variable from a large number of samples) and can assist with interpreting the data by revealing patterns and trends. (See Figure 4.10)

![Figure 4.10: Line graph showing variations in the incidence of measles since 1998](image)

The units of measurement for quantitative data will always be stated in a published source, for example numbers per year, deaths per 100,000 per year, percentage of adults with learning disability living independently. However, when interpreting charts and graphs, you should note the scales used for the x and y axes. If one scale is greatly enlarged, it can exaggerate a difference, which in reality is very small, or if the scale is reduced it could hide/mask a difference that could be important. In Figure 4.10, the x-axis scale starts at zero so the trends seen in the graph have not been artificially exaggerated.

**Research**

Got to www.cls.ioe.ac.uk and investigate the data generated by the National Child Development Study. What sort of data has been generated from the research study? How are the results being used to inform policy and practices in the health and social care sector?
For your literature search, it may be more useful to note and remember, for example, the trends shown in graphs, or the proportion of the pie chart for the variable you are interested in.

For your literature search, it may be more useful to note and remember, for example, the trends shown in graphs, or the proportion of the pie chart for the variable you are interested in.

![Pie chart showing BTEC Level 3 learners at Sidson College](image1)

For your literature search, it may be more useful to note and remember, for example, the trends shown in graphs, or the proportion of the pie chart for the variable you are interested in.

![Bar graph showing transport modes](image2)

For your literature search, it may be more useful to note and remember, for example, the trends shown in graphs, or the proportion of the pie chart for the variable you are interested in.

![Graph showing prevalence of underweight, healthy weight, overweight, and obese men and women](image3)

For your literature search, it may be more useful to note and remember, for example, the trends shown in graphs, or the proportion of the pie chart for the variable you are interested in.

**Figure 4.11** Different formats for presenting quantitative data: Charts A and B relating to expenditure on four common disorders shown in the pie and doughnut charts, and Charts C and D relating to the incidence of common cancers in men and women shown in a column chart and a bar chart.

**PAUSE POINT**  
Look at the charts in Figure 4.11. Explain what each chart or graph is telling you about the data it presents.

**Hint**  
What patterns are revealed in each chart or graph? What is the scale? Close your book and mind map the different purposes of research in health and social care. Add the examples you identified above to categorise each example.

**Extend**  
Why is it important that research has a clear purpose?

**Organisations involved in research**
Organisations may be involved in health and social care research through:

- providing the funding to pay for the research
- providing specialist information
- enabling access to patients and other individuals using services
- providing specialist resources, such as expertise, equipment, data-handling facilities
- other reasons.
The usefulness of a piece of research, particularly relating to the physical world, may not be immediately apparent. Much technological research may be carried out in the first instance for industrial purposes and its health or care related uses may take some while to emerge. The development of silicone non-stick surfaces came about as part of the research for early space missions but now the unique properties of silicon surfaces are utilised in a range of medical products such as wound dressings and flexible tubing for infusions.

**Government**

The government is responsible for all areas of its citizens’ lives such as health, employment, agriculture, education, arts, sports, the environment, defence. If the government is to produce effective policies in each of the areas of its responsibility, it requires reliable information about the country’s population, its industry and the economy. The government, therefore, gathers a large amount of statistical data about the country so that it can plan how to allocate its resources across its areas of responsibility. The Office for National Statistics collects vast quantities of statistics about different aspects of activity across the UK, which it publishes (see page xx). Statistics produced by each government department are available online. You should be aware that the names and organisation of government departments change from time to time, particularly when a new government is elected. Statistics relating to past years tend to be archived so may require a more detailed search to locate.

Government departments usually only initiate research, rather than carry it out themselves. Most government research is put out to tender. Organisations interested in carrying out the research have to bid, by presenting a detailed research proposal, and a panel of experts will select the proposal judged to be the most appropriate for their purpose. Cost-effectiveness will also be a consideration, because the cost of any government research has to be accountable to UK taxpayers. The Department of Health may pay for research by funding an academic team based in a university, or jointly with a university and healthcare providers. The government may also funds research carried out by charities or, sometimes, by private industry.

**Health authorities**

Health authorities are responsible for the health provided in their region. Legislation requires health authorities to be fully informed about the healthcare activity being undertaken in their region. In order to do this, they collect a range of data regarding the health care provided. Examples of the data routinely gather by health authorities include:

- the number of patients the authority is responsible for, categorised into age groups, social class groups, how long each patient stays in hospital etc
- statistics relating to hospital care such as the range of investigations carried out, diagnoses made according to predetermined categories, outcomes of treatment
- other data such as the uptake of vaccinations, or time between referral by a GP to being seen by a hospital consultant.

The data gathered by health authorities may be recorded annually, or more frequently. Collectively, the data is collated by the Office for National Statistics and made publicly available when published on government websites. The Health and Social Care Information Centre is a specific source of statistics that could be helpful for your work on this unit.

**Local authorities**

Local authorities may be county, district or town councils, metropolitan boroughs or unitary authorities. County, metropolitan and unitary authorities are now responsible for public health matters, working with Public Health England (PHE). Different structures apply in Wales, Northern Ireland and Scotland.
Currently, local authorities have a statutory responsibility for a Health and Wellbeing Board, which must put a Joint Health and Wellbeing Strategy in place based on their local Joint Strategic Needs Assessment (JSNA). The purpose of the JSNAs is to improve health and reduce inequalities, they involve health and local authorities in the council area who gather a range of data about the area. The Health and Wellbeing Board is required to publish a draft strategy document for public consultation.

**Social service departments**
Currently, social services in England are the responsibility of local government at county, metropolitan borough or unitary authority level. Responsibilities are separated into Children’s Services Departments, which focus on:
- the needs of all children and young people up to the age of 18, and those with learning disability up to the age of 21
- services for adults, which are responsible for all individuals of 18 and over.

**Charities and community groups**
A charity must be registered with the Charities Commission and relies on money gifted by individuals and organisations. Apart from their activities to raise money, a high proportion of UK charities exist to support individuals with specific health and social care needs. Some charities are very important sponsors of research into health and social care such as Cancer Research UK, Diabetes UK, the Wellcome Trust, the Kings Fund and Action for Children.

**Office for National Statistics (ONS)**
The ONS is the government agency responsible for collating the data gathered from a variety of sources, such as the Census, local authorities, the NHS and all government departments. The ONS publishes quantitative data online, as summaries, publications, statistical bulletins and in other formats, with open access and which can be downloaded. Some types of data may be updated at regular intervals such as monthly, quarterly or annually. Table 4.3 shows the themes used to organise data on the ONS website.

**Table 4.3**: The range of statistics potentially relating to health and social care available from the ONS

<table>
<thead>
<tr>
<th>Theme</th>
<th>Data available concerning...</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environment</td>
<td>Air quality, use of antibiotics in agriculture, food production</td>
</tr>
<tr>
<td>Economy and business</td>
<td>Government expenditure, eg on public services, employment, investment in research and development</td>
</tr>
<tr>
<td></td>
<td>Employment</td>
</tr>
<tr>
<td>Children and education</td>
<td>Children's mental health</td>
</tr>
<tr>
<td></td>
<td>Education expenditure, young people not in education, training or employment</td>
</tr>
<tr>
<td>Health, wellbeing, health and social care</td>
<td>Alcohol abuse, smoking, drug use</td>
</tr>
<tr>
<td></td>
<td>Incidence of specific diseases, eg cancers, infectious diseases</td>
</tr>
<tr>
<td></td>
<td>Disability</td>
</tr>
<tr>
<td></td>
<td>Mental health, including loneliness in older people</td>
</tr>
<tr>
<td>Population, people and communities</td>
<td>Demography, eg birth rates, death rates</td>
</tr>
<tr>
<td></td>
<td>Living costs, household expenditure, food survey</td>
</tr>
<tr>
<td></td>
<td>Census</td>
</tr>
<tr>
<td></td>
<td>Crime</td>
</tr>
</tbody>
</table>

The statistics indicated in Table 4.3 are only a tiny proportion of those available from the ONS but they illustrate the different themes in which the ONS may categorise data. You can also access statistical data limited to your locality to compare with national data.
The ONS website also provides information about how it gathers and analyses its data and a calendar for publication of its regular reports, so you can check whether more up-to-date data is about to be published. Some data is also available from government departments (see page xx).

**Research**

Using an issue related to your studies, investigate publications, bulletins and summaries for each theme on the ONS website.

What examples of statistics did you find within each theme? Which of the statistics that you found have provided you with a new perspective to your previous knowledge and understanding? Could any of the statistical data you encountered be relevant to your literature search for this unit?

**Pause Point**

Review the organisations involved in research mentioned in this section.

**Hint**

Have you learned about the research interests of any of these organisations in your research for other units of the programme?

To what extent is data obtained from these organisations likely to be reliable and valid? What enables you to judge this?

**Research methods**

Several different methods can be used to undertake research. Understanding the advantages and disadvantages of each method is important, to ensure that the information gathered from the research will help provide data that is relevant to the research question being investigated. Even if you are not carrying out the research yourself, you need to be aware of the characteristics of different methodologies. The methodology used may be an important factor when determining the quality of the research and, therefore, to judging the weight or value of the results from any research study. Researchers should publish the details of their methods so that others can replicate the study (see the section on Issues). Being able to compare research methods, and to identify similarities and differences across different studies, is an important consideration when analysing and evaluating research in a literature review.

**Sampling**

Much research in health and social care involves obtaining information directly from individuals, especially when the information cannot be easily retrieved by any other means, for example measured directly using physical instruments or by observing the individual. Most research gathers information from a selected group of individuals who share some characteristic, for example people who have had a stroke, or experience such as people who have used services available in health centres. This group is known as the sample population. Sometimes the sample population may be only small, for example individuals affected by a rare disease. In these circumstances, the researcher may choose to survey everyone in the group. Alternatively, as is frequently the case, researchers may select a research methodology appropriate to investigating particularly small numbers, for example interviews or case studies. However, when the sample population is large, it is not practical for a researcher to include everyone in the sample population, so they select a smaller number of eligible individuals, the research sample.
random sampling, in which individuals are selected randomly; researchers may use random numbers selected by a computer, or from a table of random numbers

systematic sampling, which involves selection of the individual at a regular intervals, eg distributing a questionnaire to every other service user on an attendance list for a day centre, or every sixth service user with diabetes attending a GP practice

quota sampling, which requires the researcher to select a predetermined number of individuals from representative groups (eg according to age, area of the country, socio-economic profile, male and/or female etc); opinion pollsters use this method

opportunity sampling, which involves researchers handing out questionnaires to individuals who happen to be passing by at the time. For example, standing outside the entrance to a hospital on a particular day and handing out questionnaires to anyone who will take a copy would be opportunity sampling.

The sampling technique and sample size chosen for a research study affect the validity of the research and the conclusions that may be drawn from it.

Key terms

**Sample population** – group of individuals targeted for investigation on the basis that they share the characteristics being investigated.

**Survey** – systematic process of gathering information from several individuals, often using a questionnaire.

**Sample** – group of individuals selected to participate in a particular health and social care research investigation.

Defining the sample population and selecting the sample is an important aspect of the planning of research, because these two aspects of the survey influence what information can be obtained and the quality of the data collected. Selection of the research sample may involve complex statistical processes, which are not of concern for this unit, but you should understand some of the core methods of sample selection so that when reviewing, analysing and evaluating the research for your literature search you can consider the potential impact of the sampling process on the outcomes from the research. Researchers working with large sample populations take care to select a sample of individuals to be as representative of the whole group as possible including similar age group, gender mix and spread across different parts of the country.

**Questionnaires**

Questionnaires are a convenient way of obtaining information from many individuals in a survey. Individuals who respond and submit a completed questionnaire are known as **respondents**.

A questionnaire is a pre-set series of questions compiled by a researcher to gather information, usually from individuals, or an individual responding on behalf of an organisation.

- A question that expects the respondent to provide a free response is known as an **open question**.
- A question that provides a menu of possible responses from which the respondent selects the most appropriate response is known as a **closed question**.
- The menu of response options provided by the researcher is known as the **response frame**, which may use a variety of formats (but you are unlikely to be required to know the detail).
However, health and social care researchers using a questionnaire as a means of obtaining qualitative data should have a clear understanding of whether information relevant to their research can be obtained using this technique.

Other factors to consider when constructing a questionnaire include:

- whether to use open questions, closed questions or a combination of both
- the capabilities of the individuals in the sample frame, particularly their ability to follow the instructions, read and understand the questions and responses offered, so the responses they select are reliable
- questions need to be short and free from any ambiguous meaning
- response frames need careful construction so that there is an answer option available to every respondent
- questions on sensitive issues may need to be asked indirectly rather than directly, or use response frames that elicit less precise information such as age as a series of age ranges rather than expecting an exact age
- leading questions – any questions that indicate there is an expected response should be avoided
- the sequencing of questions within the questionnaire may influence the respondents responses
- information the researcher needs to know about the respondent that might affect the responses they make, eg their age, sex, employment or level of education.

Figure 4.12 shows an example of a structured question that might be included in a questionnaire.

<table>
<thead>
<tr>
<th>Question</th>
<th>How often do you engage in the following forms of exercise?</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Instructions:</strong> Enter one tick per line for each statement</td>
<td></td>
</tr>
<tr>
<td>Walk for 20 minutes continuously</td>
<td>Daily</td>
</tr>
<tr>
<td>Walk briskly without stopping for 1 hour or more</td>
<td></td>
</tr>
<tr>
<td>Practice yoga or similar gentle exercise for 1 hour</td>
<td></td>
</tr>
<tr>
<td>Participate in specific moderate exercise inducing mild sweating for at least an hour</td>
<td></td>
</tr>
<tr>
<td>Engage in organised strenuous activity eg aerobics, field sports, tennis etc</td>
<td></td>
</tr>
</tbody>
</table>

**Figure 4.12:** An example of a response frame that might be included in a questionnaire

The construction of a questionnaire requires careful consideration, if it is to generate reliable data. Inappropriately constructed questions and response frames can result in respondents failing to answer questions, becoming confused and so not providing answers that reflect their actual situation, deliberately giving a false answer, especially one they think the questioner may want to hear, or simply not returning the questionnaire. All of these eventualities will reduce the validity of the data generated from the survey.
Questionnaires may be distributed by hand, in the post or online, provided the researcher has appropriate contact details for all individuals in the sample. However, the researcher only benefits from any of the data provided by the participants if the questionnaire is returned. The response rate is an important indicator of the validity and reliability of the data generated by the survey. The method of distributing the questionnaires in a survey can affect the response rate, so opportunistic sampling of patients waiting in a hospital outpatients department might elicit a high return rate of, say 60–80 per cent, whereas when distributing questionnaires by post, a 30 per cent response rate would be considered good.

It is now relatively easy to construct a questionnaire using online software. However, in health and social care research, completing surveys online may still be a barrier for some participants. This could introduce a bias in the data generated from the survey as data from the non-respondents would be excluded.

Reports of research based on self-completed questionnaire surveys should always state the response rate. A low response rate may not fairly represent the sample population, for example older people may not have responded because the survey was online. In contrast, if some participants are highly motivated to respond, because they want to express a particular point of view, the data generated may also be unreliable. Either way, the data could be skewed or biased (see page xxx) and, therefore, reduce the validity of the conclusions drawn from the data. These issues may mean that it is better to adopt a different methodology for the research. A smaller number of good quality interviews, or a well-conducted focus group (see page xxx) could generate more reliable data and increase the validity of the conclusions, even though the number of participants was lower.

**Key terms**

**Participant** – an individual who contributes data to research, for example by submitting responses to a questionnaire, taking part in an interview or focus group or by agreeing that their personal data can be used by researchers for a particular research project.

**Response rate** – percentage representing the proportion of completed questionnaires returned to the researcher relative to the total number of questionnaires distributed. A high response rate increases the reliability and validity of the data gathered from the questionnaire.

**Interviews**

An interview involves an interviewer interacting directly with an individual to obtain information about that person, which will be included in the analysis of all data gathered in the research, to draw conclusions. Interviews can sometimes involve more than one interviewer, or two or three interviewees interviewed together. Interviews may take place:

- face-to-face
- over the telephone/voice over the internet enabled
- using text messaging
- online
- using video-enabled software, so those involved can see each other even though they are in different locations
- via social networking websites
- in a focus group of several interviewees.
An interview is a useful research method when, for example:

- detailed information is required
- knowledge and understanding are being sought from a specialist
- the sample population is very small
- participants may have difficulties completing a questionnaire
- a wide range of experience is being investigated
- the information being sought is not sufficiently predictable to be gathered using a structured questionnaire
- the information to be elicited from the interview is complex.

Interviews may be structured, semi-structured or unstructured (see Table 4.4). Whatever the form of the interview, the detail of what was said in the interview needs to be converted into a format that makes it readily accessible to the researcher when they are analysing it to draw conclusions from their research. The entire interview can be audio recorded, but it is usual to convert the spoken words to a text format to produce a transcript. Software is now available that can convert recorded sound into text, which can then be saved as a written document.

### Key term

**Transcript** – exact, word-for-word written record (‘ums’ and ‘ers’ are included) of what is said by both the interviewee and the interviewer, usually taken from an audio or video recording.

### Table 4.4: Features of different types of interview

<table>
<thead>
<tr>
<th>Type of interview</th>
<th>Characteristics of each type</th>
</tr>
</thead>
</table>
| Unstructured      | ● Particularly used to obtain in-depth and holistic information about the interviewee’s experiences.  
                  | ● Open questions are carefully constructed to encourage the interviewee to respond freely, often at length.  
                  | ● Open questioning from the interviewer is used to elicit detailed information, often by adapting the questioning according to the information revealed in the interviewee’s responses to preceding questions.  
                  | ● Follow-up questions may be used to probe detail from the interviewee’s narrative, or to keep the interviewee on track for the information being sought by the interviewer.  
                  | ● Requires the interviewer to establish a good rapport with the interviewee, to build trust so that the information revealed in the interview is reliable, and as accurate as possible.  
                  | ● Several interviews with the same interviewee may be necessary to obtain all the information being sought by the researcher.  
                  | ● Data obtained is purely qualitative, may be difficult to analyse and requires considerable interviewing skills to ensure the interview remains focused. |
| Semi-structured   | ● Interviews are structured by an interview schedule, with a list of predetermined, questions about a specific issue or experience being researched.  
                  | ● Each interview generates qualitative data. If the research involves interviewing many individuals, then analysis of qualitative responses across the sample may generate quantitative data.  
                  | ● The interview schedule enables greater reproducibility, so that the schedule can be used with several individuals, better enabling comparisons between the responses from all interviewees. |
| Structured        | ● Usually involves a questionnaire.  
                  | ● The interviewer poses questions orally, reads out the predetermined menu of possible responses and then ticks the response selected by the interviewee.  
                  | ● May be completed face-to-face, by telephone or online.  
                  | ● Often used for market research interviews surveys and customer satisfaction surveys. |
**Focus groups**

A focus group involves interviewing a group of individuals, usually no more than 20. It is a special sort of interview technique. Similar to a semi-structured format, an interviewer poses questions and facilitates discussion among the participants, to gather the different opinions and perspectives of the participants. The participants are usually selected to be representative of the sample population. The qualitative data gathered from the discussion is recorded by a note-taker, ideally someone who is neither the chairperson nor a participant in the discussion.

**Case studies**

A case study is a real example, explored in some depth, relevant to the issue being researched. To be worthy of specific study, a case study should relate to a clearly defined issue that can be studied independently of its context. When reporting on health and social care research based on case studies, it is important to define the boundaries of the study and its time context, so that the data generated can be reviewed and analysed within the context of the appropriate social policy environment. Case studies are useful for exploring complex situations such as issues relating to a family encountering difficulties, the dynamics of how a group of professionals work together or new approaches to supporting individuals with mental health issues.

Case study research may involve gathering specific data, which would not normally be obtained. It may also involve analysing data gathered routinely as part of an individual’s care, or of an organisation’s procedures, provided the participants were informed and had given their consent. New research could involve interviews, perhaps with an individual, their relatives and carers, and the professionals involved in their support. Records of quantitative data, for example clinical laboratory reports or case notes held on file, could contribute to the case study, provided the data are relevant to the research (see page xxx).

The value of a case study in research is that it can enable a wide range of data, which may only be considered separately – for example by different specialists, to be collated together. This provides a more holistic perspective that could be valuable to improving practice and policy. A case study generates qualitative data, which may be highly detailed but is specific only to the particular case studied. Preparing the data for a case study is time consuming, so only a small number of case studies are likely to be involved in any piece of research. This may limit the usefulness of the understanding gained, but useful insights may be generalised to wider contexts and can be valuable on a ‘lessons learned’ basis, especially if they relate to unforeseen or unusual events or situations. When reporting case study research, the report should always identify the context of place, time and other key information relevant to understanding the case study and its role in the research. If contextual information is not provided within the research report, then any insights gained from analysing the case study will be limited.

Your literature search may include case study data as it is a frequently used methodology, particularly in social care research.

**Scientific experiments**

The scientific method is used to investigate different physical phenomena in the natural world. Much scientific research takes place in laboratory conditions and often involves a large team of scientists and technicians, each contributing a specific expertise. For example, a doctor of emergency medicine may work with dermatologists, biochemists, physiologists, cytologists and chemists to develop a technique for lessening the lasting damage to skin following a burn injury.
However, research based on scientific methodology is not always carried out in laboratories. Most health research is conducted in clinical settings, using scientific principles. For example, the clinicians (doctors and nurses) involved in the example of burns injury research given above, will apply scientific methodology to their part of the research as much as the biochemists and cytologists culturing tissues for skin grafts in laboratory surroundings.

The scientific method involves testing a hypothesis, a statement about a phenomenon. The statement is based on prior knowledge and is an ‘educated guess’ about the relationship between factors influencing the observed phenomenon. Factors that influence a phenomenon are called variables.

Scientific research involves ‘testing’ the hypothesis by carrying out a series of carefully designed experiments to test the effect of each variable on the phenomenon. The results from the experiments may either prove or disprove the hypothesis, but either outcome is equally valuable. If an experiment proves a hypothesis, scientists can apply the hypothesis to new situations and contexts, to advance their understanding of the phenomenon. If a hypothesis is disproved, scientists will analyse and evaluate the results and construct a modified hypothesis based on their analysis, and then conduct further experiments to test it.

Scientists involved in medical research, for example developing new drugs or the better understanding of specific diseases, need to explore a large number of different hypotheses around the multiple variables affecting human physiology. Scientists break down the main hypothesis into individual hypotheses, investigating a single pair of variables for each of these in turn, so that the main hypothesis is not fully tested until a series of experiments is completed. A single report of scientific research can be very technical, exploring only a tiny detail of physiology. While this is not the focus of this unit, the principles of scientific method underpin much research in the health and social care sector, so an overall understanding of the methodology is important.

In a single scientific experiment meeting ‘fair test’ rules, only two variables are investigated at a time. The experiment is specifically designed to measure the influence of the independent variable on the dependent variable. The results will show how the dependent variable changes when exposed to the independent variable. However, it is important in scientific methodology to include a control test in the experiment in order to confirm that neither variable on its own can bring about the changes observed. Each variable needs to be measurable, preferably using instrumentation that provides an objective, quantitative reading.

Key terms

**Phenomenon** (plural is *phenomena*) – event or observation in relation to the physical world.

**Hypothesis** – statement that predicts the relationship between two variables.

**Variable** – entity or factor that can have a range of measurable values, a factor that will affect the results.
However, human beings are complex organisms and their behavioural and physiological responses are influenced by many variables, which cannot be easily controlled or investigated individually within living animal or human bodies. Application of scientific principles to health and social care research tends to be restricted by ethical issues. While it is usually acceptable to investigate the behaviour of chemicals and non-animal tissues by systematically controlling each variable in a laboratory, similar investigation of human and animal tissue, and the involvement of live animals in research, is governed by codes of ethics (see page xxx).

Research into specific diseases and treatments eventually needs to involve testing of physiological and psychological responses in patients and individuals, thus involving clinicians and care professionals as well as scientists. In healthcare research investigating the impact of a healthcare intervention such as a new drug or a wound dressing routine, it is usual to have a control group. Participants are randomly allocated to one of two groups and only one of the groups receives the intervention, the other group becomes the control group. Data will be collected and analysed in exactly the same way from both groups to identify the extent to which the results obtained are sufficiently different, which will demonstrate a benefit of the intervention. Participants should know that they may be allocated to a group that may or may not receive the intervention before giving consent to participate in the research. Although the focus of this unit is on health and social care policy, practice and needs, your literature search may involve you reading reports about scientific research.

The social science methodologies already explored are likely, for ethical reasons, to be more acceptable. Sometimes the research strategy mixes scientific method and social research. For example, an investigation into the effect of an exercise routine on individuals’ health could measure some physical aspects of health (for example, changes in pulse rate, respiration rate and blood pressure) under scientific conditions, but would then need to adopt a social science methodology, such as a questionnaire, to investigate how the exercise made the individuals feel about their health.

**Key term**

**Control group** – group of individuals participating in research, but who are not exposed to the health or care intervention being investigated.

**Reflect**

In small groups, review experiments you have carried out. Select two or three and answer the following questions:

What was the hypothesis? What were the variables investigated and which was the independent variable?

What control tests were included? Why? What type of data was generated in the experiment? Was it qualitative or quantitative? What conclusions did you draw from the experiment?

**Checklists**

A checklist consists of a list of predetermined statements or features against which the presence or absence of the feature is recorded. The items in the checklist may be used to:

- monitor that each stage of a complex or important procedure is being followed, for example when preparing an organ and the patient for transplant surgery
- demonstrate the frequency of a given feature of behaviour taking place, for example in event sampling observations (see page xxx)
- check that particular items are present or in the correct location, for example an operating department practitioner counts the number of clean swabs issued to surgeons during an operation, and counts back the number of used swabs received to ensure that no swabs are left inside the patient at the end of the operation
record the time or day when a repeated action took place, for example the temperature of a fridge in a care home kitchen is measured and recorded every four hours

routinely check on emergency equipment, for example testing fire alarms weekly.

The design of a checklist needs careful thought, to ensure the statements generate data that is relevant and sufficient for the overall aim of the research. However, once finalised, it can be a relatively quick and convenient technique to use when observing behaviours in a busy working environment, such as a hospital ward or a children’s nursery, where the priority must always be the needs of the individuals being cared for rather than the research.

Observation

In the context of health and social care, an observation is probably primarily thought of as a technique for observing the behaviour of people and individuals. However observation is also important in relation to physical objects and spaces, for example:

- careful scrutiny, in effect close observation, of, for example, X-ray, CAT and MRI scan images by a radiologist and other experts is a critical part of diagnosis and health care
- assessing the extent to which a day room in a residential care home provides an environment that will encourage residents to relax and enjoy the company of others, and so contribute to maintaining their social wellbeing
- assessing features of a particular environment that have the potential to be hazards for those with health and social care needs
- analysing reasons why, when using a particular piece of health and social care equipment, the operators experience discomfort or find the equipment does not perform the intended task as well as it should.

Observations may be carried out with the observer as a participant observer or as a non-participant observer. The relationship between the observer and the situation and individuals being observed is an important factor to consider when judging the reliability and objectivity of any interpretation made of the data gathered from the observation.

Techniques for making formal observations include narrative, time sampling, checklists, event sampling and sociograms. Which observation method is adopted for a research study will depend on the overall objectives of the research and the contribution the observation inquiry is making towards these.

Key terms

**Participant observer** – an observer who actively engages in the activity context of the observation, alongside the individual or individuals who are being observed, for example a play therapist stimulating play in order to observe the behaviour of an emotionally disturbed child.

**Non-participant observer** – an observer removed from the context of the activity in which the participant behaviour is being observed. The observer is an onlooker only, for example an early years practitioner observing how a group of 3 year olds play with each other.

**Narrative** – verbal description (written or oral) of events in the order in which they happen, for example recording the details where the events occurred, who was involved, what was said, what happened.

**Time sampling** – series of observations made at a regular, predetermined time interval for a predetermined fixed amount of time, for example every hour, for the duration of a particular finite activity.

**Event sampling** – recording behaviours at a specific moment in time, for example the key features of a child’s behaviour during their first week attending a nursery.

**Sociogram** – record the interactions one individual makes with other people, for example they are used in childcare to document a child’s social development as they learn to play with other children and interact with adults. Sociograms are often recorded as a chart.
A behavioural observation involves recording what is happening, as it occurs, so it is very important to record the date of the observation. Contextual details that may affect the behaviours being observed include, for example:

- the time of day, which could influence the observed behaviour of a young child or an elderly adult
- what has happened immediately preceding the observation, such as an event that might have disturbed or distracted the individual being observed
- who else, apart from the participant(s) being observed, is present during the observation
- the extent to which the physical needs of the individuals being observed have been met, for example hunger, fear or needing to use the toilet could result in distracting behaviours.

Observations generate qualitative data, so there is potential for considerable variation arising from, for example different perceptions, attention to different detail or differences in how the each observation is recorded. Variation in using a particular observation technique may be less if every observation is being carried out by the same observer, or the observer is very experienced. Even so, there is still potential for each observation to vary according to the actual context of each observation. Radiographers and doctors are trained in reading radiographic and scanner images, but still confer about scans before making a diagnosis.

To minimise variations in the data that could arise from using the methodology itself, observers should be **standardised** in using the methodology before carrying out the observations. In health and social care research incorporating observations, the observation method will be carefully selected and the observations will be carried out according to a planned protocol to fit the contribution the observations are making to the research outcomes. If the research involves a team of observers, there is greater potential for variation. In the best quality research, the observers will have been trained and standardised for using the observation protocol. The research report should indicate what standardisation of the observation method has taken place. Standardisation processes would also be expected for interview and focus group methodologies when there is more than one interviewer or chairperson involved, for example because they are taking place in different locations.

**Key term**

**Standardisation** – formal process to ensure that individuals performing the same qualitative task in different situations do so as far as is possible in exactly the same way. Standardisation involves the individuals being trained for the task then completing an identical task under the same controlled conditions. A standardisation process should be repeated regularly if the task is being performed repeatedly over a long period of time.

Informal observations are a routine aspect of health and social care practice and could be a trigger for a more formal investigation using action research. Under safeguarding requirements, all carers and practitioners have a duty to be watchful of the wellbeing of individuals in their care, and also of their colleagues. For instance, a person might be uncharacteristically aggressive, or quiet and not participating in a group activity, or look pale and unwell. Ignoring these signs could be regarded as negligence. Informal observation is often the only means of gathering information about unplanned events or critical incidents, such as a violent outburst or a service user collapsing.
Observation is routinely used by those working in early years childcare environments, because it is an important tool for assessing a child’s learning and development. It enables the early years practitioner to plan activities to promote the next stage of development for a child. The recording method used, when working with the spontaneity and fleeting nature of a young child’s actions, needs to be straightforward in order to capture the moment where the child suddenly demonstrates a newly acquired skill. In a research report, informal observation may be referred to as ‘anecdotal’ evidence or as ‘personal experience’. The data from such evidence has less value than that generated from research based on a planned observation protocol, because of the lack of standardisation. However, it could still have validity, especially if the person making the observation is a health or social care professional as their experience of using observation techniques makes the data more reliable.

Reflect

Think about the occasions where you have been observed by a professional. When did the observations take place? You may or may not have been aware of them at the time, for example when you were a baby. What was their purpose? What (in general terms) do you think was learned from the observation; what was the outcome? What was the consequence of the outcome for you at the time of the observation? Has the outcome had a longer-term impact for your development, health and wellbeing?

If you have had a work placement in an early years environment, you will be aware that observation is an important aspect of assessing a young child’s development. It is a routine task for an early years practitioner, which informs the planning of activities to stimulate further development of the children. Those working with adults will routinely use observation to detect discomfort or emotional change.

PAUSE POINT

With your book closed, list each of the research methods explored in this section. Identify one advantage and one disadvantage of each method.

Hint

Think of examples of research methods you have experienced, not necessarily in a health and social care context.

Extend

What methods might be appropriate when researching the anxieties of older adults about their care when they are no longer able to care from themselves without assistance?

Analysis of data

So far, you have explored the different methodologies available to researchers carrying out primary research. It is increasingly easy and relatively quick, using digital devices and the internet, to collect data through automatic monitoring of activity. Generating data because it can be done is not a reason on its own to collect data. (Given that research is a planned process and is also subject to ethical considerations (see page xxx) there must be a valid rationale to justify the gathering the data.)

Raw data, such as that captured on or in observation records, interview transcripts or schedules, returned questionnaires or experimental results, are unwieldy, making it difficult to identify what has been/could be learned from it. Therefore, researchers organise raw data by collating it systematically, perhaps using spreadsheets, tables, graphs and charts; enabling the data to be analysed in relation to the original purpose of the research.
Analysis may identify trends, which may be small but consistent changes, for example the small but steady increase in the percentage of primary school children affected by obesity and being overweight revealed over several years of data from the NCMP (see the case study on the National Child Measurement Programme).

Health and care interventions to support patients and service users may not produce sudden and dramatic benefits that are easily observed and identified. Instead, changes may be imperceptible on a daily basis but may become apparent over a longer period of time. Monitoring these changes and analysis of the data generated is essential to reveal the full impact of the treatment or intervention. For example, psychological therapies, treatments for depression, chronic pain or dietary and insulin regimes for regulation of blood glucose in diabetics may all only produce detectable change over a long period of time.

**Local authority data**

Local authorities are responsible for provision of health and social care services for vulnerable individuals including:
- all children and young people under the age of 18
- adults with learning disabilities
- older people in need of assistance with personal care.

In order to ensure its services are in place and sufficient for the local population it serves, a local authority needs to know its local population well in terms of, for example:
- the number of people requiring the services
- where the people needing services are located within the local authority area
- how the needs of the population may change over the next few years
- whether the nature of the needs of the local population is changing.

**Research**

Explore the website of your local authority and retrieve data relating to health and social care provision in your local area. How does the data in your local area compare with the equivalent national data available? (You should note the URLs and access date, so that you can return to the data, if necessary, when carrying out your literature search.)

As indicated earlier (page xx), local authorities have statutory obligations to make certain data available to members of the public. They usually do this on their websites and also in public consultation meetings, so that members of the public can express their views. Some aspects of their activities must involve members of the public more closely, through having appointed representatives of the community who are not already elected councillors, for example, Health and Wellbeing Boards.

**Data from GP practices**

In England, GPs are required by law to inform the local Health Protection Team (HPT) when they see an individual whom they suspect may be infected with any one of the 39 communicable (infectious) diseases. The process is called Notification of Infectious Diseases (NOIDs). Notification must be made within 24 or 48 hours of the person being seen. The HPT reports each case of suspected infection to Public Health England (PHE). Doctors in other parts of the UK are similarly obliged to report suspected cases of infection to their own health authorities. PHE publishes the statistics weekly.
by region and also by local authority. Trends in the incidence of these diseases are important indicators of potential epidemics. Monitoring their incidence helps to prompt appropriate precautions to reduce the risk of spread in communities.

Table 4.5 shows how other sources of information regarding health and social care in localities can be accessed.

**National data**

In the UK, national data is primarily published by the ONS (see the section on Office for National Statistics (ONS)). However, when conducting a literature search, you may find it useful to access more specialist data. Table 4.5 shows useful sources of information that may be relevant to research in the health and social care sector.

> **Table 4.5:** Sources of national data

<table>
<thead>
<tr>
<th>Organisation</th>
<th>Website link</th>
<th>Examples of data available</th>
</tr>
</thead>
</table>
| Health and Social Care Information Centre (HSCIC) | www.hscic.gov.uk                                  | • Clinical Commissioning Groups (CCG), eg allocation of funding to community and secondary care in an area.  
 • Adult social care outcomes framework (ASCOF), provides information on outcomes for people using social care services, and for their carers. |
| Health and Wellbeing Boards (HWB)                | www.local.gov.uk/health                           | • Admissions to hospital  
 • Serious case review reports                                                             |
| Public Health England (PHE)                      | www.gov.uk/government/organisations/public-health-england | • Health improvement and public health issues, including infectious diseases  
 • Publishes statistics regularly (weekly/monthly/quarterly/annually) depending on the data |
| Health Research Agency (HRA)                     | www.hra.nhs.uk                                    | • Health and social care research ethics                                                  |

National data is useful to compare with local data, which may be very local, such as a local authority area or the area covered by a single Clinical Commissioning Group, or may be available for each region of the country. Comparisons between national and more local data are valuable and might be a line of enquiry to follow in your literature search depending on the health and social care issue you are investigating.

**Conducting effective literature searches**

In the twenty-first century, the quantity of text-based and visual information available is colossal, mainly because of the internet and online access. The problem for researchers is finding the sources that are relevant, and that have verifiable origins, from among the far greater number of sources that do not meet these criteria. A *literature search* is a systematic process in which a range of published material relevant to a specific issue is analysed, to extend knowledge and understanding of the issue, but not necessarily accessing all there is to know about the issue. A literature search is a useful preliminary step to any advanced study or research. It tells you the kind of sources available on the chosen issue and what the key issues may be. For this course, at least some of the sources accessed in a literature review should include references to enable you to extend your research into the issue further, if appropriate and if there is sufficient time. In contrast, a *literature review* is a more substantial process that involves a comprehensive and evaluative scrutiny of all sources relevant to a specific issue.

All learners need to learn the skills associated with a literature search, as this technique is essential for successful study at further and higher education. A literature review is usually carried out by specialist and experts researching for professional purposes. Systematic literature reviews make a valuable contribution in health and social care and may be influential in effecting changes in policy and practices.
Literature searches are an essential aspect of the work of professionals in the health and social care sector to enable them to keep up to date with new developments in the sector, which appear continually across the very wide range of specialisms carrying out research relevant to the sector. The more systematic and critically evaluative processes associated with a literature review are useful for generating an overview of an issue. This can be useful to a wider audience of professionals so that they can adapt their practice to take account of the research. The advantage of a literature search, or a literature review, is that they enable researchers to bring together, or collate, into a single source, a wide body of published research. This research has probably been carried out in several different locations by researchers working independently of each other, and it may otherwise not have been brought together.

No primary research is carried out in either a literature search or a literature review. Therefore, some of the ethical issues associated with primary research involving patients, service users, their families or other professionals are avoided. It is now considered inappropriate for those without professional training and status, such as learners studying a BTEC Nationals in Health and Social Care course, to interview or use data retrieved directly from such individuals. However, you will still need to consider ethical issues when carrying out a literature search.

A feature of a literature search is that it includes a wide range of sources. Table 4.6 shows some of the sources you might access in your literature search.

### Table 4.6: Secondary sources

<table>
<thead>
<tr>
<th>Secondary source</th>
<th>Examples, topics</th>
<th>Focus, key features</th>
</tr>
</thead>
<tbody>
<tr>
<td>Textbooks</td>
<td>Health and social care</td>
<td>Should be Level 3 equivalent standard; often include lists for wider reading useful for more detail. Academic textbooks will include references, but assume advanced literacy skills of the reader.</td>
</tr>
<tr>
<td></td>
<td>Early years</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Human physiology</td>
<td></td>
</tr>
<tr>
<td>Specialist books</td>
<td>Learning disability</td>
<td>Written for care workers, professionals and academics.</td>
</tr>
<tr>
<td></td>
<td>Mental health</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Dementia</td>
<td></td>
</tr>
<tr>
<td>Journals</td>
<td>Health Service Journal</td>
<td>May only be accessible via an academic search engine.</td>
</tr>
<tr>
<td></td>
<td>The Lancet</td>
<td>May require login to access information.</td>
</tr>
<tr>
<td>Sector magazines</td>
<td>Community Care</td>
<td>Published regularly and available at some newsagents or from a college library; online versions may include extra content, but there may be a charge for access.</td>
</tr>
<tr>
<td></td>
<td>Nursing Times</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Early Years Educator</td>
<td></td>
</tr>
<tr>
<td></td>
<td>New Scientist</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Nursery World</td>
<td></td>
</tr>
<tr>
<td>Commissioned reports</td>
<td>Francis Report 2013</td>
<td>Often commissioned by government for a specific purpose, e.g. to investigate failings, to update, to improve, assess impact of new technologies.</td>
</tr>
<tr>
<td></td>
<td>Cavendish Review 2013</td>
<td></td>
</tr>
<tr>
<td>Regulator reports</td>
<td>Ofsted</td>
<td>Inspection reports on service provider organisations, each publishes an annual report.</td>
</tr>
<tr>
<td></td>
<td>Care Quality Commission (CQC)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>NICE</td>
<td></td>
</tr>
<tr>
<td>Government organisation websites</td>
<td>Food Standards Agency</td>
<td>Nutritional information, food safety.</td>
</tr>
<tr>
<td></td>
<td>PHE</td>
<td>Data on immunisations, screening programmes, health and wellbeing.</td>
</tr>
<tr>
<td></td>
<td>ONS</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Local authorities</td>
<td></td>
</tr>
<tr>
<td>Google Scholar search engine</td>
<td>Abstracts of academic papers published in large number of academic journals</td>
<td>All sources are from peer-reviewed journals but you may have to pay to access the full research report; fewer recent sources, many are old (10+ years) which limits currency of information.</td>
</tr>
</tbody>
</table>
This unit aims to develop your own literature search skills in the context of exploring an issue of current interest in health or social care. Developing literature search skills will assist you to be more effective in the research you carry out for other units in your BTEC National Health and Social Care studies. Additionally, developing these skills will be valuable when studying at higher levels, or if you intend to work in a supervisory role.

However, a literature search is only one method of carrying out research, even if it is likely to be used as part of every piece of research you do. Understanding the advantages and limitations of each research method is essential, to enable you to assess the extent to which the research methods used in the sources you include in your research affect the reliability or validity of the data they generated.

A focused form of literature search is usually carried out at the start of any primary research project to establish what is already known about the topic being researched. The findings from this type of literature search help establish the rationale for the primary research being undertaken. These are usually presented in the introduction section of a report of research, although they may also be referred to again in the discussion section. As a preliminary step in conducting primary research, a literature search can help researchers to avoid the problems encountered by others in their methodology, replicate findings to confirm them, or trigger new lines of enquiry.

For the literature search that you must carry out for this unit, the choice of issue will be limited. Additionally, you will only have a short time in which to complete it, so you will also be limited in the number of sources that you can access and analyse in the time available. However, the skills you develop in this unit should increase your ability to:

- find secondary sources relevant to a particular issue
- manage your literature search through keeping records appropriately, so that your sources can be accessed reliably and repeatedly, as required, and fully acknowledged formally
analyse and evaluate the data within each source in relation to your issue, using identified lines of enquiry
synthesise new thinking about the issue, using evidence from your sources based on your lines of enquiry
draw conclusions relevant to your lines of enquiry regarding the issue, which you justify from your analysis of the evidence selected from your sources
outline ways, based on your conclusions, in which the knowledge and understanding acquired from your own literature search could benefit health and social care, particularly in relation to one of more of the four purposes explored earlier (see page xxx).

**Step by step: Creating projects in the IDE**

1. **Draw up a plan** for the search, with timescales.
2. **Analyse** the article that triggered your search thoroughly, to ensure you understand it fully.
3. **Identify possible lines of enquiry** for your literature search that will extend the research presented in the article.
4. **Select two to three initial lines of enquiry**, to establish an overall aim for your search.
5. **Search**, using *key words*, for secondary sources, and select those that seem most relevant to your lines of enquiry.
6. **Analyse** each source individually, evaluating the reliability and validity of the date presented in each to *develop* your own *lines of reasoning* in relation to your search.
7. **Synthesise** new *arguments*, developed from your lines of reasoning based on evidence from several of the sources (you must use at least two sources).
8. **Evaluate** your arguments in the context of the reliability the data in the sources you use, taking into account any limitations your own methodology used to conduct your literature search.
9. **Draw conclusions** from the arguments you present.
10. **Make recommendations** for further research.

For the unit assessment, you should make notes of the data, lines of reasoning, arguments and conclusions that you have drawn from your literature search.

You might find it useful to refer back to Figure 4.5 at this stage. You are not be expected to produce an overall report of your literature review for this unit, but should look at questions such as the following.

- What was the *process* you undertook in your literature search? What did you do and in what sequence?
- What was your *thinking* in selecting and developing your lines of enquiry? How did you use the sources you accessed as evidence to support, or counter argue, these lines of enquiry?

The step-by-step process outlined is the same for any literature search, and could be applied to research you undertake for any unit of your BTEC National course, or whenever you need to research information when undertaking higher-level study or as part of a future job role.
Identifying, analysing and evaluating source material

Identifying source material

As a well-recognized method of research, a literature search is a planned activity. Finding relevant source material relating to the topic or issue you are researching is an early step in the search process. However, you should be aware that you may need to find additional sources later in your literature search. This may be to find further specific evidence to support the arguments you develop based on the data from the sources you examined at the start of your search and to strengthen the validity of the conclusions you draw from the research.

Table 4.6 indicates a range of secondary sources that you could access for your literature search. There are vast numbers of sources available online on a wide range of health and social care issues. You may be very used to using a smartphone, notepad or computer to search for the information you want for your personal life – instantly and when you want it. However, a literature search needs to be planned and systematic, and not spontaneous or haphazard.

Almost all sources you access for your literature search are likely to be available in digital form, so retrievable online from government, local authority and charity websites, and those of other organizations. Data from these sources is usually freely available to the public. Textbooks are probably the sources you are most likely to access as printed copy. Journals, periodicals, newspapers and the content of broadcast media can be downloaded, although they may be subject to specialist access on a subscription basis. Your school or college may provide access to journals through specialist academic search engines, and you are expected to be aware of these and how they operate, but access to academic journals is not mandatory for your literature search for this unit. You should be able to access some of the most widely used health and social care magazines, such as those listed in Table 4.6.

An important starting point for any literature search is to identify a few **key words** that are specific to the subject you are researching. Key words will help you identify potential sources that may be relevant. However, given the large number of sources published relating to health and social care, you will almost certainly need to search using phrases or search filters, to narrow down the number of sources to a manageable number. Ideally, you will want to narrow down your initial search to perhaps 10–15 sources.

**Key term**

**Key words** – a single word, or a short string of words (a phrase) that indicate the content of a piece of text, for example ‘health and social care’

As an example, Figure 4.14 illustrates possible lines of enquiry for a literature search about a specific health and social care issue.
Figure 4.14: Possible lines of enquiry that might be explored in relation to mental health in children and young people (CYP)

Research

Research one of the lines of enquiry suggested in Figure 4.14, experimenting with suitable key words to help you narrow down your search. Identify two sources to explore in more detail.

Analysing source material

An important influence on the quality of your findings from a literature search will be the quality of the sources you find. A researcher is likely to select a source because its subject matter or content seems relevant to their research issue. However, an essential aspect of a literature search is that the researcher takes into account any information available about the source of the accessed literature. Information gathered from a source that indicates who has written it and whether the authors are likely to have been guided by core principles of integrity, honesty, professionalism and objectivity, has greater worth than information gained from a source that you know nothing about. You may have no means of verifying that the information from such a source is truthful, free from bias, is accurate or has errors, is reliable or has not caused individuals to be harmed or exploited.

In this digital era, it is all too easy to deceive; for example by copying text from others or inventing or falsifying data, including falsified visual images by altering them digitally. Such practices would be regarded as unacceptable malpractice and unethical. In most health and social care professional organisations, and in UK universities, such malpractice could result in disciplinary action, including withdrawal of professional registration, and thus the legal licence to practice as a professional.
A schema to help you analyse a secondary source is shown in Figure 4.15.

**Figure 4.15 Schema for analysing a secondary source**

When studying this unit in particular, you will be expected to access a range of sources and not to rely solely on those you can access via the internet. Examples of other sources that could be relevant to your literature search may be a policy developed by your work placement, or information available from a local special-interest charity.
Sources written for an academic or specialist audience, such as teachers and researchers working in universities, may contain continuous and complex prose, with long sentences. However, complex texts can be read with greater ease by following a few simple steps:

▸ ask yourself what the heading tells you
▸ skim read to identify the type of text – whether it is a research report, a critical analysis, a review article – and its structure, such as headings, in-text signposting, referencing and sources
▸ scan-read for any key words you have already identified, to enable a preliminary judgement about the relevance of the source for your literature search
▸ target more detailed reading on the abstract/summary (if there is one, it may be in a feature box or sub-heading), conclusions (at the end), discussion (towards the end), introduction (start of main text), results and method, in that order
▸ make notes
▸ record all details of the source that you will need for referencing purposes.

**Evaluating source material**

Evaluation requires making a reasoned judgement regarding worth or value. You will only need to evaluate each source that you access for your literature search. An evaluation involves critically examining all aspects of the source (Figure 4.15). The critical examination, or assessment, of each source will involve you searching the source to:

▸ identify the authors
▸ identify the source organisation and country of origin (health and social care policy differs in different parts of the UK, as well as between the UK and other countries, so sources from other countries exploring health and care issues may be considerably less relevant
▸ identify the currency of the source, by identifying the date it was first published – many sources may be citing the research of others that was done years ago; for example, many learners cite Maslow's theory of the hierarchy of needs, but rarely from the original description written by Maslow and published in 1943
▸ identify whether the source relates to health and social care provision, diagnosis or treatment, delivering care, the same or different, groups of individuals using health and social care services
▸ gain an overview of the key messages the source is communicating
▸ decide whether, in relation to your literature search – the issue you are investigating and your lines of enquiry – the source is relevant, irrelevant, or possibly relevant.

This evaluation is an essential part of a literature search because the critical review of each source will enable you to recognise the extent to which the evidence it provides is reliable, valid and has been gathered with full respect for ethical principles. In addition you will need to form an opinion about the relevance of the sources to your search.

**Pause Point**

Review this section in relation to the following health issue: provision of prescribed treatment programmes for obese patients who have received a medical referral for weight reduction.

**Hint**

Define obesity appropriately. This question is about provision, not obesity.

**Extend**

Under what circumstances will weight reduction treatment be prescribed? Find secondary sources to support your answer.
Planning Research

Planning is a key feature of research and takes place before any research project starts. The planning makes the research a deliberate and formal process. The care and thoroughness of planning a research project is a critical factor for its success in meeting the intended research outcomes. In the UK, it is also essential to comply with the ethical frameworks, legislation and codes of conduct that govern research. Results from research conducted without compliance to the ethical frameworks are immediately invalidated and are, therefore, worthless. They could not be used to justify changes to health and social care practices or provision.

Rationale for research

All valid research is undertaken for a reason or purpose, otherwise it would be unethical (see the section on Ethical issues). You have already looked at the possible purposes for research in the health and social care sector and the importance of defining a clear aim for research (see the section on Issues).

The **rationale** provides the reason for the aim of the research and justifies the research (see also the section on The purpose of research). The aim might be in the form of a research question or a hypothesis that can be tested. Research always takes place in the context of what is already known and understood about an issue from previous research and/or established knowledge. Professional researchers justify their rationale by placing it in the context of what is already known about the issue they are researching. They carry out a literature search and summarise their findings, usually in the introductory section of their published report of the research. You will need to be able to explain the reasons why you have chosen to focus on a specific aspect of health and social care when you carry out your literature search. The main rationale should be based on the data presented in the article but the specific lines of enquiry you chose to pursue could be influenced by for example, a job role, a work placement experience, personal experience or interests, or some other factor. Once you complete your literature search, you should be able to support your rationale by referring to some secondary data that you found.

You could chose to explore how the data in a source from your literature search might be relevant to, for example:

- a different health and social care environment, such as home care or residential care
- a different group using the same services, such as elderly people or young adults
- a similar group but a sub-group within it, such as young people and young people with mental disabilities.

Deciding objectives

An **objective** is what you aim to achieve as a consequence of deliberate, planned action or actions. In order to make your literature search manageable, so that you can meet the requirements of this unit, you will need to establish clear boundaries for your study. This will require you to define what aspect you will investigate and this, in turn, will be determined by two main factors:

- the time you have available
- the accessibility of relevant secondary sources.

An objective is a specific statement that relates to the overall aim, but which defines how you will achieve the aim. Objectives are set at the start of a project. Often a single aim involves setting several objectives. The actual achievements from the project may differ from the intended aims set at the start – ranging from complete
non-achievement of the aim, partial achievement, full achievement and possibly, to achievement of unforeseen objectives. The actual achievements are known as outcomes or findings. Research outcomes will be based on the evidence gathered, such as the results from experiments or surveys or relevant statistical data, but they also take account of data gathered from secondary sources, such as ideas, concepts, arguments and conclusions.

Key terms

Objective – a statement of the intended outcome from an action. An objective should relate to an overall aim but be more specific.

Outcome – the actual outcome from an activity.

Findings – the knowledge and understanding gained from a piece of research, or a research study.

Objectives should always be SMART (specific, measurable, achievable, relevant and timely), as indicated in Table 4.7.

Table 4.7: SMART objectives

<table>
<thead>
<tr>
<th>S</th>
<th>Specific</th>
<th>Each action is identified as a short, clear statement of what is to be done,</th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td>Measureable</td>
<td>The outcome or result of each action can be measured in some way.</td>
</tr>
<tr>
<td>A</td>
<td>Achievable</td>
<td>Each action can be put into practice (any one action may require breaking down into several smaller actions to enable achievement of the main action).</td>
</tr>
<tr>
<td>R</td>
<td>Relevant</td>
<td>Each action should be contributing to the overall objective.</td>
</tr>
<tr>
<td>T</td>
<td>Timely</td>
<td>A deadline is set for each action and sub-action, so that the objective can be attained by the overall deadline set.</td>
</tr>
</tbody>
</table>

Clear definition of the boundaries of research early on, at the planning stage, will make it much easier to maintain the focus required. As with any research study, clearly defined objectives provide a clear focus for the research, which makes it more likely to be successful in contributing positively to knowledge and understanding in relation to people using services, informing policies and practice or identifying gaps in provision. The success of any research is measured against the objectives for it set at the beginning. Objectives that lack clear definition are unlikely to generate meaningful results that will meet those objectives.

Sometimes, considering what you cannot investigate can help you consider what will be feasible for you to research through your literature search. Fewer, smaller and less ambitious targets could well advance knowledge and understanding faster overall than larger, less clearly defined objectives. Less defined objectives are likely to generate data that only relates vaguely to the objectives, making analysis and evaluation of the data much more difficult.

Selecting appropriate research methods

Verifiable empirical data generated from observation, scientific experiments and from measurable experiences is likely to generate data that is more reliable and so generate research findings that have greater validity. Research data generated through primary research, therefore, tends to be held in high regard, provided it is carried out ethically and all steps possible have been taken to minimise the risk of errors and bias. As indicated earlier (page xxx), the data generated from empirical research is more likely to be quantitative and health research tends, therefore, to use empirical or scientific methodology.
In contrast, social care research methodologies such as interviews, generate qualitative data. This time-consuming methodology usually only involves a small sample size, limiting the extent to which any findings can be generalised to the wider population. Only when it is feasible to gather quantitative data from a large number of participants, perhaps through a survey involving participant-completed questionnaires, can social care research generate reliable quantitative data that could be meaningfully applied more widely, for example to develop social policy, or improve services. Government statistics are usually gathered at a regional level. They tend to be reliable because they are based on a large population and, therefore, can be valuable in providing data against which smaller-scale research can be compared, increasing the validity of arguments developed in the research and the conclusions drawn.

In contrast to empirical data generated from primary research, a literature search or a literature review in which all data is gathered only from secondary sources, can be useful to develop abstract concepts and theories by bringing together published data from a variety of sources. It may subsequently be feasible to design appropriate tests for such theories and concepts using more empirical methods.

Other determinants of the choice of research methods can include the following.

▸ The research objectives – for the results to be valid, the methods used must be appropriate for the data that is being sought from the research. Table 4.8 suggests potential methods for researching topics in health and social care.

▸ Access to appropriate sources of data – these may be secondary sources, such as access to academic journals or to appropriate participants, for example a GP interested in the early diagnosis of motor neurone disease may see only a handful of patients with this condition in decades of working in a GP practice.

▸ Time available for research – there is a cost for time. Research by health and social care professionals and clinical scientists working in the UK may be carried out as action research within their main job, where the main priority must always be to the needs of the patients and individuals using the service they provide. Time for conducting the research and writing it up for publication is, therefore, likely to be very limited. Research conducted in association with a university is often dependent on specific grants from, for example the NHS, charities or other not-for-profit organisations. Such funding is usually time-limited, for example for up to five years. A postgraduate student studying for a PhD research degree is only likely to receive an income to do so, including time for writing their thesis, for three to four years.

▸ Funding for research – required to meet the costs of the researchers’ time and any other costs involved in carrying out the research, such as specialist equipment or expenses involved in travelling to meet participants. Research methods that depend on highly sophisticated equipment that is expensive to develop or purchase are likely to require very generous research grants. Exploration of some of the research charity websites such as Diabetes UK or Cancer Research UK will give you some idea of the costs associated with research in health and social care.

Reflect

What factors affect the choice of research methods available for you to use as a learner on a BTEC Level 3 National course?
Table 4.8: Possible research methods to use in health and social care research

<table>
<thead>
<tr>
<th>Research question/topic</th>
<th>Possible research methods</th>
</tr>
</thead>
</table>
| What are patients’ preferences for support when being discharged from hospital following a stroke? | • Literature search to investigate the different approaches to support being used in different areas.  
• Interviews with patients and their families.  
• A survey of community-based occupational therapists and rehabilitation teams working with patients recovering from stroke. |
| What policy initiatives are required to reduce the rate of ‘bed blocking’ by patients no longer requiring hospital care or treatment following a stroke, but who require care and support to be able to return to their own home? | • Review of data from all hospital trusts where there is a dedicated hospital stroke unit.  
• Interviews with clinical managers of stroke units.  
• Interviews with hospital administrators.  
• Survey of local authority directors of adult social services.  
• Focus group meetings with patient representatives. |
| Investigating treatments to reduce the brain damage and, therefore, impairment of body functions caused by stroke. | • Laboratory experiments exploring the biochemical and physiological effects of potential pharmacologically active interventions for strokes.  
• Microscopic observations of cellular changes in tissues exposed to a simulated stroke.  
• Literature search to identify possible known pharmacological agents that might be predicted to have an appropriate mitigating effect on potential brain damage following a stroke.  
• Observation of radiographic scans, to ascertain how the stroke has affected the physiology of an individual’s brain.  
• Eventual double-blind trial of any new drug developed. |
| Why are so few individuals affected by stroke accessing specialist support services? | • Literature search of statistics to ascertain the extent of the problem.  
• Interviews with those affected by strokes and their families.  
• Survey of the quality of the services currently available. |

Selecting a target group and sample

The concept of sampling has already been discussed (see the section on Sampling). In health or social care research, the target group may be self-selecting, for example in Table 4.8 the target group is formed of individuals who have had a stroke. Within that there may be sub-groups, for example those whose stroke has left them well enough to be rehabilitated to an independent life in their own home, and another group whose stroke has left them with disabilities that mean they can no longer live independently.

However, even within a sub-group, a researcher may need to make decisions as to who would be appropriate to participate in the research. Individuals may be excluded for practical/logistic reasons such as they live a long distance from the research base and this should be made explicit in the research report as it may bias results because the group is less representative than it could be. Research groups may include:

- children and young people, for example children in their early years, adolescents, looked after children
- those with disabilities, for example learning/intellectual, physical, acquired brain injury
- adults, for example of working age, in old age
- those affected by specific disorders, for example diabetes, mental health issues, strokes
- workers in health and social care, for example health professionals, care workers.

Within each of these groups, a researcher might identify sub-groups, which will often distinguish between male and females and age (perhaps using an age range 0–5 years, 11–18 years or over 65 years). Other ways in which it may be important to differentiate sub-groups of participants might relate to their past experience or professional knowledge.
In a research project investigating knowledge and understanding, perhaps of how to deliver first person on scene assistance (first aid), it could be relevant to know whether the participant’s background meant they would be likely to have greater knowledge than usual. In this scenario, it could be relevant for the researcher to gather information regarding whether the participant was a health professional or was a trained first responder/first aider. If the research focus were on perceptions of health or care workers, then defining the specialism of the worker more closely could be appropriate, for example speech and language therapists working with language delay in young children, a counsellor for mental health or nurses working in the community or in hospital provision.

Once a researcher has identified the target population on which to base their research, they will need to decide which individuals in the target group they will actually invite to be participants in the research. They can then select an appropriate method for selecting their sample.

**Deciding realistic timescales**

Most research projects are time-limited. This may be because there is urgency to obtain the outcomes from the research, so that patients and service users can benefit as soon as possible. Or maybe because a professional has been seconded from care responsibilities or a job role in order to carry out a piece of research, but has to return to their role within a defined time scale. The cost of research will always be a factor that defines when a project needs to be completed.

You will be very familiar with deadlines. Just as managing your time is a key aspect of managing your life, so it is critical to the success of a research study. If an end date has been defined for you, then you have to work backwards from that date. This involves:

- the **action plan** – identifying in detail all the activities/tasks that need to be done before the deadline, including preparing any research instruments, such as questionnaires, interview schedules or ordering laboratory materials
- the **time planning** – identifying how much time will be required to complete each activity task
- creating a **schedule of activities** – recognising how the tasks need to be sequenced, which tasks need to be done first or where one task requires another task to be completed before it can commence
- **scheduling** – considering the extent to which longer tasks could be ongoing in parallel to shorter tasks, for example an interviewer could not be in two different locations on the same day
- being aware of and apportioning the **total time available** to all the tasks and presenting the time plan/schedule on an easily understood grid or template.

A Gantt chart, similar to that shown in Figure 4.16, is an example of a planning template that could be used for planning your literature search. For complex research projects, there may be a series of different plans over different timescales, one for each of the different professionals involved in the research study. In your literature search, if just one of the activities you have identified in your plan takes longer to complete than you predicted, then the scheduling of all the other activities will be affected. The more detailed the breakdown of tasks you put into your plan/Gantt chart, the lower the likelihood that your planning schedule will be put off track. A possible strategy for planning your literature search might include time allocated for the following activities:
<table>
<thead>
<tr>
<th>Tasks</th>
<th>Weeks</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Read article 1 and 2</td>
<td></td>
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<td></td>
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<tr>
<td>Brief analysis of both articles</td>
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<td></td>
</tr>
<tr>
<td>Identify possible lines of inquiry for each article</td>
<td></td>
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<tr>
<td>Preliminary search for sources</td>
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<tr>
<td>Choose article and detailed analysis of it</td>
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<tr>
<td>Decide lines of inquiry</td>
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<tr>
<td>Keep records of all sources accessed</td>
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<tr>
<td>Search for further sources for chosen lines of inquiry</td>
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<tr>
<td>Evaluation of sources for reliability, relevance</td>
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<td></td>
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<tr>
<td>Analysis of source to develop lines of reasoning</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Establish clear focus of lines of reasoning</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Synthesise arguments relating to health and social care (individuals/policy/practice/new knowledge)</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prepare notes for Part B</td>
<td></td>
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<tr>
<td>Prepare reference list</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Print notes and reference it</td>
<td></td>
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</tbody>
</table>

**Figure 4.16** Gantt chart, used for planning and scheduling tasks in a project

- reading, re-reading and annotating your source, so that you understand it fully
- drawing up a time plan that includes all the activities in this list
- drawing a mind map of possible aspects of the issue to explore
- deciding which aspects of the issue will hold your interest and enable you to meet your objectives
- setting two to three objectives and allowing further time later in your schedule, in case you need to modify these as your search progresses
- deciding your measures of success (see page xxx)
- following up secondary sources
- searching for other sources on the aspect(s) of the issue you select from your mind map
- reading and re-reading to understand the new sources fully
- keeping records of your literature search.

You will note that this list is more detailed and specific than the overall literature search process given in the Step-by-step process featured in the section on Conducting effective literature searcher.

**Deciding how research will be monitored and modified**

An important aspect of any research project is to monitor your progress continually against your original research plan. There are two reasons for this:

- to keep focused on the purpose of the research as stated in the research question or hypothesis
- to monitor your progress against your action plan, so that you complete the different stages of the project by the deadlines set.
The range of secondary sources and their use in a literature search have already been discussed (see page xxx). As you read more sources in your literature search, so you will gain a better understanding of the issue and whether the lines of enquiry you chose will enable you to answer your original question. Re-reading your sources will enhance your understanding and help you assimilate more of the detail and, therefore, will probably result in you adjusting your interpretation of it. This process may also lead to you returning to sources that you judged to be less relevant initially but which you now realise are indeed relevant to the lines of enquiry you have explored, or support the lines of reasoning you develop. Other sources that you initially perceived as relevant may similarly end up as less relevant. If you have time, you may wish to find new sources to support the lines of reasoning you developed from your research of the issue.

**Monitoring**

Research rarely proceeds exactly as planned, so monitoring the progress made against the time scale available for your literature search will be important. Professional researchers will monitor their progress regularly, possibly by providing a progress report to their managers, or publishing it more widely in a journal. Although you might make some adjustments to your plan two or three weeks into your literature search, perhaps by adjusting your lines of inquiry, it would be unwise to make any significant changes to your lines of enquiry much later than this. Regular monitoring of your progress against your literature search plan should enable you to identify whether you are on target to complete this within your original time frame (by the end of studying this unit). Another important function of monitoring your progress is to check that you are maintaining an appropriate focus to enable you to meet the objectives you have set for your literature search.

**Modification**

Even when researchers set very clear objectives for their research and develop detailed plans, the nature of research is such that they cannot take account of all eventualities. Their objectives and planning are based on their knowledge and understanding of their issue before they started the research study. Once the research study is underway, the new data they generate as a consequence may make it appropriate to modify their initial objectives and plan. Some of the reasons why you may need to modify your objectives for your literature search might include:

- revising the order/sequencing of tasks
- adjusting the timescales for individual tasks (although you do not have scope to extend the overall time)
- adding new tasks, probably reading of new/different sources, to gather more data to support your objectives
- modifying/adjusting the exact focus of your objectives
- amending the scope of your literature search to make it more manageable within your time frame (deadline date).

**Deciding measures for success**

All research projects need to define what they aim to achieve with the resources at their disposal. Professionals involved in action research, which is very much based on their practice in their day-to-day job role, may decide on measures for success that seem very small, but which may make a difference for their service users. Some projects may have their measures for success defined for them in written terms of reference or broad goals, such as doing things more efficiently, so they are less costly or more effective. Measures of success in primary research may simply be the empirical data obtained and its interpretation in the context of the aims of the research.
Ethical considerations for carrying out research

All research in the UK and EU is governed by ethical principles, and all health and social care professions are governed by these principles. Throughout your literature search, you should be mindful of the ethical issues that might arise and take active steps to avoid any activity that could be considered unethical.

PAUSE POINT

How will you apportion your time during your literature search?

<table>
<thead>
<tr>
<th>Hint</th>
<th>What activities will you need to allocate time for and in what sequence/order will you need to do them?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extend</td>
<td>What extra activities might you need to undertake in this time? How much time, and when, do you think you should allocate for these activities?</td>
</tr>
</tbody>
</table>

Ethical Issues

Ethical considerations are an essential underpinning of all research carried out in a large number of countries around the world. Ethics are written statements, often referred to as ethical codes, which reflect the morals of a society. Both morals and ethics relate to what a society considers to be acceptable or unacceptable behaviours. Morals tend to be modified over time, so ethical codes also tend to evolve over time to reflect the changes in society’s morals.

Maintaining confidentiality

Researchers must ensure that data from participants is stored securely and cannot be traced back to specific individuals. Personal data that can be directly, or indirectly, linked to an individual or can be accessed by those who do not have formal permission to view the data, could result in the data being misused and the participants being harmed in some way. In order to protect participants, researchers in health and social care need to establish appropriate systems to ensure the confidentiality of all the data about individuals that they collect in their research.

For many participants, the concept of anonymity is also important, because they want to be sure that any intimate data about themselves, which they may be prepared to share with a professional researcher in a health or social care context, is not going to be seen by others who are not subject to an ethical code of conduct.

Maintaining confidentiality and anonymity of data protects participants and guards against data about individuals being accessed by unauthorised people, meaning those who do not have formally agreed permission to view the data. You should be mindful that maintaining confidentiality and anonymity in research is not confined to the individuals who are participants in the research. It also applies to any health or social care providers, other organisations associated with the participants, and those involved in other ways in any research. This means the researchers should not name the setting or provider; instead only a general description of the size, type of organisation or provider, age group of users and similar non-specific data is provided. Only information relevant to the context of the research should ever be documented as part of a research project (see also the section on Data protection).

However, maintaining anonymity is about more than just not identifying an individual or organisation by name. It also means that you cannot provide information that might enable an individual or organisation to be identified indirectly, for example from a description that enables others to deduce the names.

Key terms

**Ethics** – written statements, relating to what is acceptable and unacceptable, that reflect the morals of a society.

**Morals** – unwritten codes of what a society considers to be acceptable or unacceptable behaviours.

**Confidentiality** – ensuring that personal information relating to any individual, including all data collected for in a research study, is shared only with those whom the individual has consented to being informed.

**Anonymity** – ensuring that any data associated with an individual collected for research purposes is documented and stored in such a way that it cannot be traced back to the individual by name.
Any research report should explain how the confidentiality of the participants was maintained. One way of maintaining anonymity is to establish a system for collection, processing and storage of data gathered for research purposes that does not reveal the identity of the participants, yet enables all the data from any one participant to be linked. Usually, this involves representing each participant by a unique reference number, rather than by name, so ensuring all data relating to that individual is anonymous. Various techniques can be used, such as representing individuals by a name that is not their actual name, or coding the participants for example as Patient A or Service User 5.

Electronically stored data can be transferred easily and unintentionally. However, digital data can be stored more securely than paper-based data if it is correctly protected by robust firewall software, and secure logins and passwords are issued only on a selective basis to those in the research team with formal authorisation to access it.

Maintaining anonymity is important for maintaining the integrity of a research study, because it helps to reduce the risk of bias (see page xxx). If data were linked to specific individuals if could result in the analysis and interpretation of the data from the project being less objective, and so affect the validity and reliability of any conclusions drawn from that research.

**Gaining consent from participants in research**

Under human rights conventions and legislation, all participants in a research project should expect to have the opportunity to give their formal consent to being a participant. Consent is always required from research participants being observed as well as from the organisation on whose property the observation is being made. Observations made in public spaces may not need consent, on the grounds that anyone can observe others as a passer-by. However, recording events and activities for research purposes (for example, on mobile phones or video cameras) would require explicit consent from participants.

Researchers are required to provide every potential participant with sufficient information **before** they agree to participate. The information given to participants will include:

- the overall purpose of the research
- what is expected of the participants if they take part in the research
- what, if any, risks are involved in participating, such as possible side-effects, how severe these might be, and how data generated from participation will contribute to the research
- the entitlement to withdraw from the research at any time.

Researchers should tell potential participants explicitly about their rights. It is important that the necessary information is made available to every participant in a form that each can understand it fully. Participants should be free to use their personal judgement about whether to participate, according to their own perception of the risks associated with participation. Once an individual agrees to participate, they will be required to provide formal consent to become a participant, usually by signing a form to this effect. This is known as **informed consent**. Participants may withdraw from the research while the research study is in progress, or request that their own data is withdrawn from any report of the study.

Occasionally, it may be necessary to withhold some information from participants, in order to avoid knowledge about the research affecting how participants respond. This is particularly the case in behavioural studies, when knowledge of what behaviour is being studied might affect how participants respond in the research. Another example

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**Reflect**

Have you, a member of your family or a friend ever been involved as a participant in any kind of research? If so, what information were you/they given before participating? Did you/they have the opportunity to ask questions about the research? Did the information provided by the researcher influence your/their decision to participate, or not?
would be the double-blind trials (see page xxx) that are used to test the effectiveness of new drugs. Neither the doctors administering the test nor the patients receiving the drug know whether it is the new drug or a placebo. This ensures that the doctor remains totally objective when monitoring the patient’s progress in response to the new drug being tested. It also ensures that the patient is more likely to report actual rather than perceived effects or side effects.

**Consent from vulnerable individuals**

Extra precautions are required when gaining consent from vulnerable individuals to participate in research and additional considerations are likely to be needed to ensure that safeguarding requirements are maintained. The needs of vulnerable individuals may be such that factors giving rise to their vulnerability are a barrier to them giving informed consent independently. In this situation, a researcher would need to consider an alternative means of obtaining data from these individuals. Vulnerable individuals include:

- all children and young people under the age of 18, even if they are fully healthy and free from disability and are not using health and social care services
- adults who lack capacity, for example individuals with intellectual impairments, individuals who are confused, individuals with dementia or any individual who is unable to understand what is going on around them, perhaps because they have additional language needs.

Other adults may also be vulnerable, for example if they:

- have a disability or they are infirm
- are using health and social care services
- have recently been affected by bereavement
- are affected by a disease or a long-term health conditions, including mental health issues or addictions
- are involved with the criminal justice system.

**Research**

Investigate the factors a researcher would need to consider when seeking informed consent from potential participants in each of these circumstances:

- participation in a drug trial of older adults with moderate dementia
- testing the use of an anaesthetic specifically for use in children under 10 years old undergoing major operations
- a young adult with moderate learning disability, who has a domineering relative with power of attorney from the Office of the Public Guardian for the individual's health
- participation of a recently bereaved adult in research about care of the terminally ill.

How might barriers to gaining informed consent in each of these circumstances be overcome?
Safeguarding considerations affecting participants in research might include:

▸ whether the individual can understand the nature of the research itself, and so understand what they are agreeing to when giving consent to participate

▸ the individual’s intellectual capacity to understand the concept of risk, and any risks involved in participating in a particular research project

▸ whether the individual has the capacity to be a reliable participant, if the research involves qualitative methods

▸ any potential consequences of the research for a vulnerable individual, which might not be an issue, or might potentially have different consequences, for less vulnerable participants.

The Mental Health Act 2005 requires that research involving those who lack capacity has to be approved under the conditions set by the act. In the UK, the National Social Care Research Ethics Committee is delegated to grant approval for research involving adult social care. Ethical approval for a research project should always consider the possibility that the research process could make all participants vulnerable, and that the research protocols ensure that this risk is minimised. However, particular care would be needed if the research specifically involved those already recognised as vulnerable before the start of the project. For children and young people, consent is required from a parent or their legal guardian. In your placements, particularly in early years environments, you would probably need to follow a specific procedure should you need to observe one of the service users as part of your BTEC course.

**Research**

In your placement or workplace, investigate the policy and procedures relating to gaining consent to participate in any activity that involves observing a service user, or discussing the care of a service user.

In what way does the policy and procedure protect the vulnerable individual?

**Research conduct**

All professional bodies associated with health and social care will have codes of practice that govern the behaviour of their individual members. Each of the professions (currently 16) that are represented on the Health and Care Professions Council (HCPC) are governed by the Standards of Conduct, Performance and Ethics of the HCPC, which were published in January 2016. The Nursing and Midwifery Council Code was updated in 2015. Any researcher in health and social care is expected to comply with the code of practice of their professional body.

These professional codes of conduct expect individual professionals to respect the code whenever and wherever they are carrying out their professional duties, which includes involvement in conducting research. Carrying out research in health and social care may require professionals to spend more time with individuals using services, or to access more information about an individual than they would in their day-to-day role. However, respecting and abiding by their professional code of conduct means they must maintain a distinct boundary between themselves and the participants in their research. This is usually referred to as maintaining a professional distance.

A professional who exploits their position as a researcher to manipulate or take advantage of a participant, or who acts in an unethical way when conducting their research, could be struck off their professional register and barred from practice.
Organisations that regularly undertake research in health and social care, such as universities, will have their own ethical codes for the conduct of research carried out within, or in association with, their organisation.

Ethical codes for research are only guidelines, they are not legislation. Research ethics committees (RECs) exist to approve research proposals. In England, ethical approval for health research, and all research involving the NHS, is the responsibility of Health RECs, which consider proposals at a regional level. From April 2015, the National Social Care REC has been the responsibility of the Health Research Agency (HRA).

While it may be straightforward to make a judgement about what is or is not acceptable for much research in health and social care, the ethical judgement for other areas of research may be less clear. Sometimes it is a matter of balancing one risk against another. When faced with this situation, there is an ethical dilemma. For example, researchers develop a powerful new treatment for people with a type of cancer that does not respond to other treatments. Human trials are required. However, the researchers suspect, from the evidence of earlier animal trials, that there could be serious and unpleasant side-effects for humans. The researchers will have to balance the likelihood that people may die from this type of cancer and that there is a possibility of a cure against that of inflicting harm to patients in the trial.

Over time, the boundaries of medical knowledge and the ever-advancing range of techniques that become available tend to expand society’s understanding of what is acceptable. However, balancing the potential of new technological advances with existing boundaries of knowledge, also creates an ethical dilemma.

Examples of dilemmas relating to research that have arisen in recent years include:

- using stem cells in research, to better understand certain diseases
- investigating genetically modified crops, as a way of increasing food production to support the increasing human population
- gene therapy, where specific genes are modified in order to reduce the harm arising from an inherited condition.

Dilemmas such as these make news headlines, because they affect society. Resolution of the dilemma may involve changes in the law, and in the interpretation of the ethical codes governing research.

**Data protection**

Any information held about an individual, by other individuals or organisations, is subject to the Data Protection Act (DPA) 1998. There are greater restrictions about holding sensitive information, such as about ethnicity, beliefs, health or sexual life. Organisations that hold personal information about individuals, such as employers, have to register with the Information Commissioner’s Office, the public body that enforces the DPA. The DPA means that if information is held, it can only be used for specific, declared purposes; and the information can only be held for a specified period of time. For a researcher, this means that under the DPA:

- only data relevant to the project can be collected
the data can only be processed according to the stated purpose, so a researcher could not use the data collected for one project in another project, unless specific consent for the second project had also been obtained from each participant.

- it would be illegal to alter the information, so that it is no longer accurate.

- information must be processed in such a way that it does not breach an individual's legal rights, or cause them harm or distress – this would include revealing the person's identity either directly or indirectly and thus it would contravene the DPA if, in a case study using a pseudonym, the information given still enabled the individual to be identified.

- all information gathered from participants should be kept securely.

- after the data is analysed, each individual's personal records must be destroyed.

- individual data cannot be taken outside the UK, unless it is protected (for example, encrypted).

Any participant in research has the right to see the data collected from them, under the principle of 'right of subject access' laid out in the DPA. All organisations collecting and using personal information are legally required to comply with these principles. Participants are also entitled to request that their data be excluded from the analysis of the data.

**Human rights and research**

Research involving vulnerable individuals is important, if health and social care services and practice are to meet their needs. Vulnerability may arise due to an individual being affected by a learning disability or an acquired cognitive impairment, such as a brain injury, stroke or dementia. As participants in research, such individuals may find it difficult to understand the information given about the research, to ask questions about it or to answer questions in a questionnaire, for example, without help. There is a risk that anyone helping the participant to answer such questions could deliberately or unintentionally influence the responses given, or change them. Also, researchers could exploit the vulnerability of the participants by omitting to check that the participant has understood the information they have been given, or possibly by not being truthful about the research. Omitting individuals from a sample because they are vulnerable is also not ethical. Researchers should make provision to avoid exploitation or abuse of vulnerable people when they participate in research.

After the Second World War, the Nuremberg trials of Nazi medical accomplices who had conducted cruel and often fatal experiments on inmates of the concentration camps, led to the development of the Nuremburg Code of 1947 regarding human experimentation. The Universal Declaration of Human Rights (UDHR) was approved by the United Nations General Assembly in 1948 and, in 1953, all 47 members of The European Council (which involves many more countries than the European Union) signed The European Convention on Human Rights (ECHR). Since 1947, the ethical considerations relating to research and other aspects of human endeavour have led to further development of some aspects of the original Nuremberg Code. The UK enshrined the ECHR into British law in the Human Rights Act 1998. Ethical principles embedded in these conventions and the Human Rights Act govern the conduct of research in the present day and include:

- protecting individuals

- ensuring that individuals only participate voluntarily

- ensuring that any personal information gathered in the course of the research is treated confidentially

- requiring that the plan for any research project is subject to external scrutiny by subject experts who are independent of the research project.
Because a society’s morals and, therefore, its codes of ethics change over time, research studies carried out many years ago may now be considered unacceptable. You could critique some of the studies carried out many years ago by considering changes in societal attitudes, and the ethical codes that govern current research practice.

Organisations such as governments, universities, health authorities, businesses and pharmaceutical companies developing new medical treatments are likely to be involved in one or more research projects at any one time. Any organisation involved in research must gain approval to conduct their research from an appropriate ethical committee. These committees are made up of individuals with considerable appropriate experience in research, with knowledge of the relevant areas of law, the subject area of the research and so on. They also include representatives of participant groups, for example patients or advocates.

As you are aware from earlier in this unit (page xxx), research is a planned activity. One aspect of the planning of a research project is for the researcher(s) to submit a research proposal to the ethical committee for its approval. The committee scrutinises the proposal and may ask for further information, or set certain conditions, before agreeing that the research project may proceed. An ethical committee might also require regular reports on the progress of the research throughout the project.

When reading secondary sources, you should always pay attention to the steps the researchers have taken to comply with the relevant ethical codes. Data from sources that are not likely to be underpinned by these principles should be regarded with great caution in the context of health and social care research.

Use and misuse of results

It is not ethical to use data gathered from research in any way other than that for which it was intended when the research commenced and consent was obtained from the research participants. To use the data in a different way, such as in another piece
of research, would be to misuse the data. If the data was considered valuable for later research, then new consent would have to be obtained from the original participants for its use.

As already mentioned, statistical data is gathered routinely by the government and by local authorities, to monitor changes that could affect their activities and the communities they are responsible for. Most data is gathered as part of the routine activities of all public services, to help ensure that taxes paid by the public and businesses are being used wisely and for the benefit of individuals, communities and the population as a whole. Most statistical data is not linked to a specific individual and in health and social care it could relate to numbers of people living in an area, or with a recognised specific need such as a disability or the waiting times for treatment. Additional personal data may be collected by the government only if it is authorised by legislation, for example GPs being required to notify Public Health England when they suspect an individual has a specified infectious disease such as measles or meningitis.

It is only by gathering such statistics that the government and local authorities can plan health and social care services, which in the UK are still largely public sector services. Within the NHS, statistics are invaluable to inform managers and clinicians about the effectiveness of the health care provided. By revealing differences in outcomes for patients in relation to, perhaps, how long they spend in hospital, whether their illness recurs and they need to be readmitted, how soon they are well enough to return to work and so on it is possible for professionals to identify the practices that result in the best outcomes for patients and individuals using services.

All research in the developed world is carried out in accordance with the Nuremburg Code. There are ten core principles to the code.

1. Every individual participating must give, voluntary, well-informed consent.
2. Any experiment must have a beneficial aim, which cannot be measured in any other way.
3. Research should be based on previous knowledge.
4. The design of the research should avoid all unnecessary physical or mental suffering for participants.
5. Research that might result in the death or disability of participants should not be carried out.
6. The risks associated with the research should not be greater than the potential benefits.
7. The researchers must plan and prepare to ensure that all participants are protected from risks.
8. The researchers must be trained and scientifically qualified.
9. Any participant should be free to withdraw from the research at any time that they feel unable to carry on.
10. The researcher must cease their research project immediately there is any evidence to indicate that it has become dangerous for participants.

Researchers have a duty not only to protect participants from harm but also to ensure that the project is carried out with integrity. Integrity in research involves:

- carefully considering the methods used to carry out the research
- ensuring the accuracy of the data
- ensuring the accuracy of any generalisations derived from the results and the analysis
ensuring that the contributions of participants are not wasted because the research is of poor quality due to flawed methodology. (This is not the same as research that does not prove its underlying hypothesis or does not provide an answer to the question posed by the research.)

The case study is about fraudulent research that has had major implications for the incidence of childhood infectious diseases, particularly measles, in recent years (see also Figure 4.10).

**Fraudulent research – the Andrew Wakefield case**

In 1998, a research paper was published in the highly reputable medical journal, *The Lancet*, written by Andrew Wakefield, at that time a surgeon and researcher. In the article, Wakefield claimed that there was a link between the measles, mumps and rubella (MMR) vaccine and autism and bowel disorders in children. The report received a great deal of attention in the press and broadcast media and, as a consequence, many parents of young children refused to let their children receive the MMR vaccine.

Andrew Wakefield’s co-researchers were so unhappy about the interpretations put on the data in the published report that they publically withdrew their support for the report. Also, other independent researchers were unable to reproduce the research data, so other doctors doubted the validity and reliability of the data and the conclusions that Wakefield had drawn from it.

In 2007, the General Medical Council (GMC) began an investigation of the research. The GMC is the professional organisation with which all doctors working in the UK must register. They must also comply with its professional code of conduct. This investigation led to Andrew Wakefield being charged on 30 counts of unethical research practice. In 2010, *The Lancet* published a statement from the editors retracting the report. Later in the same year, the GMC barred Andrew Wakefield from practising as a doctor in the UK. The many improprieties associated with the research he had published included falsifying results, inflicting invasive investigative procedures on young children that were unnecessary, and conflicts of financial interest.

The uptake of MMR vaccinations plummeted after 1998, when Wakefield report was published. By 2005, the number of incidents of measles in children had risen dramatically. In 2013, there was a major measles epidemic in Wales, more than 1400 cases of the disease reported – of which over 600 were in Swansea, and one person died.

Despite considerable publicity being given to the fact that Wakefield’s research conclusions were invalid, some parents still refuse to have their children vaccinated with MMR. However, the main consequence is that the low MMR vaccination rates since 1998 have increased the risks to the population as a whole of contracting measles and of individuals, particularly children, being affected by the lifelong damage that can result from measles infection.

**Check your knowledge**

1. Explain how the Wakefield research case exposed individuals to harm.
2. In what ways were the results of this study misused?
3. How might the misuse have been avoided?

**Conflicts of interest**

It is important to understand the nature of an organisation’s involvement in a research project, in order to judge whether the research undertaken may have been influenced...
unduly by its involvement. For example, an organisation may be seeking a specific outcome from the research to suit its own purposes, rather than to obtain evidence that is totally objective and free of bias.

Research carried out by professionals, such as clinical staff, scientists and social scientists, is an expensive process and it is usual for researchers to seek sponsorship, or funding, to support their research. In the UK, much research takes place in university departments, often supported by grants from the government’s own research organisations (currently the Research Councils), charities such as Cancer Research UK, the British Heart Foundation and many others.

Research in health and social care often involves a multidisciplinary team, with each member contributing their professional expertise to the research. For example, a research project on diabetes may involve physicians, endocrinologists, dieticians, community nurses, GPs, ophthalmologists and others. In addition, smaller organisations may sponsor others to undertake research on their behalf. Competition between organisations, research teams, and the need to produce successful outcomes from research in order to sustain the flow of research funding, may influence the research carried out and the interpretation of the research data. Research carried out by, or paid for by, an organisation is likely to reflect that organisation’s interests. This could influence the research in several ways, including by:

▸ setting up the research methodology so that it deliberately only investigates a selected aspect of the subject, which will show the organisation in a favourable light, or benefit the market for the products it makes/sells
▸ only comparing findings with those from other research projects that also support the arguments in favour of the organisation’s interests, but ignores any contradictory evidence
▸ suppressing, by not making public, any research findings that are against the organisation’s interests in promoting its activities.

Commercial companies sponsoring research may only be interested in the findings of the research if they promote the company positively, for example if they boost sales or enhance the public’s perception of the organisation. Many commercial companies are dependent on their shareholders. Shareholders invest their money in the company in anticipation that the profits the company makes will reward them (the shareholder) by paying a dividend on their investment. This may mean a commercial company makes decision based on wishing to please its shareholders rather than on meeting the needs of its customers. In health and social care, the customer purchasing the drugs or equipment produced from the research may be the NHS (so the tax payer) or individuals paying for their social care.

Research by private companies is essential for some types of health and social care research, particularly for developing the new, increasingly complex and expensive diagnostic equipment, and also in developing new drugs. Pharmaceutical companies may develop many drugs, but few may be successful and approved for clinical use by NICE. The companies use the profits they make from these few successful drugs to pay for the expensive research involved in developing more, potentially beneficial pharmaceutical substances. In the UK, testing a new drug involves regulated protocols, specified by NICE. The test protocols may take a decade or more to gather sufficient research evidence to ensure the new drugs are safe to use with patients. Some patients’ groups now want protocols for safety testing of new drugs for human use to be speeded up, so that patients with life-threatening illnesses can benefit from them sooner.
Other examples where the role of organisations in sponsoring research can give rise to ethical concerns include:

- the food industry, which is expert in promoting sales of many food products, even when they are known to be unhealthy and perhaps increase the risk of dental decay or diabetes
- campaigning groups, which may be not-for-profit organisations, but may wish to overemphasise research that supports their particular agenda for change, and underplay any research data that contradicts their agenda. For example, the drinks industry using their own research to argue against the health benefits of taxing alcoholic or sugary drinks, or tobacco companies denying that smoking bans and warnings on cigarette packaging affect people’s smoking habits.

Much research carried out by private companies and by non-governmental organisations is of a high quality. However, when reading secondary sources, you should consider the extent to which the research might have been influenced by its sponsors. Assessing this potential source of bias in research is one of the reasons why, when conducting a literature search, you should always seek to access two or more sources that have researched the same issue. You should then compare the extent to which the conclusions drawn about the issue are similar or different in each source. Several processes can reduce the influence of potential conflicts of interest in research.

- **Disclosure** is a process whereby a participant is invited to declare any potential conflict of interest **before** participating in the research. The researchers may then make a judgement as to whether it is appropriate for that individual to be a participant in the research.
- **Peer review** of a research report prior to it being published in a journal. A peer-reviewed research report has greater credibility than a research report that has not been peer-reviewed. Peer review involves an expert in the same field of research, who is completely independent of any member of the research team, scrutinising the report closely, to check that the research complies with ethical guidelines, that conclusions drawn are justified by the results presented and so on. The peer reviewer may recommend minor amendments to the report, or if there are serious weaknesses in any aspect of the research, they may recommend that the journal rejects the research report and does not publish it.
- **Participant review** enables the participants who have contributed data to review or comment on the research report. Under Health Research Authority guidelines, an individual could request that their data is excluded from any analysis included in the report, or request that statements relating to their data are withdrawn. Organisational participants may comment on any statements pertaining to their organisation in the report that are inaccurate.
- **Mentoring**, where an individual, either a researcher or a participant, is supported by another expert to discuss any difficulties that engagement with the research may cause, and thus help them to maintain their objectivity.
- **Professional distance** is a means of ensuring that personal influences on the researcher do not lead to a loss of objectivity when conducting the research.
- **Whistle-blowing** procedures are available in public organisations in the UK, and in some other organisations. They enable any single individual who has concerns about ethical matters relating to health or social care research to report them to a neutral third party. These concerns can then be investigated by others, who are neither participants nor researchers, nor from the organisations in which they work.
- **Research misconduct** includes failure to reveal any form of conflict of interest and issues such as making up results, falsifying results and plagiarism. (See the case study: Fraudulent research – the Andrew Wakefield case.)
Role of organisations
In the UK and Europe, the ethics of research is influenced by key organisations, which have responsibility for ensuring that research in health and social care is carried out in accordance with the Nuremberg Code. Some of the organisations that govern health and social care research in the UK include:

- Health Research Authority (HRA)
- National Research Ethics Advisors Panel (NREAP)
- National Institute for Health Research (NIHR)
- Human Fertilisation and Embryology Authority (HFEA)
- Human Tissue Authority (HTA)

The professional bodies such as the General Medical Council (GMC), the Nursing and Midwifery Council (NMC) and the Health and Care Professionals Council (HCPC) are organisations that also influence research through their professional codes of conduct, as already discussed.

![Members of an ethics committee discussing approval of a research proposal](image)

**Figure 4.17** Members of an ethics committee discussing approval of a research proposal

**PAUSE POINT**
Create a spidergram that shows the ethical issues you should consider when reviewing a source as part of your literature search.

**Hint**
Think about what is meant by ethical issues in relation to research in health and social care.

**Extend**
In a research report, what clues would indicate how the researchers had taken account of the potential ethical issues associated with their research?

Research skills
Organisational skills and time management
As you have already seen (page xxx) individuals carrying out research need to be organised. They need to know what they need to do, how they will do it, keep accurate records of what they actually do (so they can refer back to them later) and plan their time to achieve the necessary outcomes in the time available.
Research is almost always time-limited. In health and social care, staff may be conducting the research on a fixed period of secondment from their usual professional role. Research project financing is usually allocated for a defined period of time, or there may be urgency to obtain results so that individuals at risk can benefit from the outcomes from the research sooner, for example developing vaccines for controlling the 2014–15 outbreak of Ebola in West Africa, or for the outbreak in Brazil of the Zika virus in 2016.

A third-year undergraduate may have a period of six to eight months to complete their undergraduate project, whereas a PhD (doctoral) student will usually have three to four years to complete their research, and write up their thesis. However long the period of time allowed for the research, the researcher needs to plan their time. As already discussed (page xxx), this will usually involve:

- an action plan identifying key activities
- time planning to estimate how long each activity will take to complete
- creating a schedule of activities to sequence the activities appropriately, so that an activity is not held up because another activity that must be completed first has not been carried out
- building in some time to allow for unforeseen delays or interruptions
- being aware of the total time available, allowing enough time to prepare the formal research report.

One way of organising your time for your literature research period would be to use project management software or perhaps more practically, a time plan such as the Gantt chart illustrated in Figure 4.16.

An important discipline when carrying out any form of research, including a literature search, is to keep detailed records. You should keep your notes in one place so that you can access them easily and at any time. You might choose to use a small, perhaps A5-sized, notebook that you can keep in a pocket or bag. Alternatively, you could use the notes facility on your e-notebook or smart phone.

All entries you make should:

- be dated (the advantage of using e-notes is that every entry you make would be automatically dated)
- record the details of what you did and the data you obtained
- include the full reference details for every source you access, for example the broadcast programme, channel, date and time.

**Non-judgemental practice**

Non-judgemental practice is a key value underpinning health and social care. Being non-judgemental in research means that you should not allow any of your personal perceptions, prejudices, beliefs, political opinions and so on to influence the methods you adopt in your research, or the way in which you analyse the data or the conclusions you draw from evaluation of that analysis. Being non-judgemental also means that you should not be critical of an individual because of their actions, their thoughts or beliefs, or the attitudes you may encounter when conducting research. A researcher in health and social care should always maintain **objectivity**, both in relation to gathering the data and in analysing and evaluating it.

**Connections between sources**

As indicated in previous sections, interpreting the data you gather from your literature search should be based on rigorous analysis and evaluation of each source. However, some of the sources you use may be less relevant to the aspect of the issue you have
chosen to investigate for your literature search. One skill you will need to develop is to identify potential links between the sources you access. Doing so could enable you to identify evidence that corroborates other findings from another source, so providing additional support for any conclusions you may draw.

Comparing sources for similarities and differences in a process known as **triangulation**; it strengthens any arguments you present in your literature search. An example of triangulation to support a study examining a new treatment for a disease might be to relate the risk of the new treatment to the possible side effects, issues associated with a similar treatment but for a different disease and statistics regarding the incidence of the disease.

**Key terms**

**Triangulation** – the circumstance where two or more sources agree with regard to trends in data gathered and/or conclusions drawn.

**Collation** – the process of systematically organising data from research, in preparation for analysis and evaluation of the data.

**Methods of analysis and drawing conclusions**

**Collating** data gathered from your literature search will help you to organise the data you have obtained from the individual sources you accessed. It should enable you to identify:

- similarities and differences between findings, such as between different service user groups
- agreements and disagreements between conclusions drawn from otherwise similar studies
- where a source not directly related to your line of inquiry includes data that is relevant/useful for the arguments you are developing
- where there are gaps or weaknesses in your data that you could address in the time you have available, for example demographic statistics, knowledge of a key report or policy document.

Collectively, your organised and collated data forms the results from your literature search. After analysing each source separately for relevance, reliability and validity, you can discuss all the data together, by developing lines of reasoning that integrate data and concepts from any or all of the sources, to synthesise arguments from which you draw your conclusions from the overall study. Your conclusions will form the outcome from the research and should relate back to the original aims and objectives you set for the search.

The process of developing lines of reasoning and synthesising arguments is an essential part of the research process in which you assess the extent to which your research has, or has not (a negative argument can be valid), extended understanding against the success criteria and purpose of the research defined at the start of the research. The researcher discusses, or analyses, all the evidence by comparing and contrasting their own data with that published by others, noting the extent to which the data is similar or differs from other evidence. In a technical report, such as might be used to present health or scientific research, there may be an explicit discussion section. In social research reports, discussion should be included; however, it may be less obvious because such research tends to be presented as continuous prose with few, if any, sub-headings.
In a literature search, when arguments are being synthesised, it is almost always necessary for the researcher to re-examine the secondary sources they have already accessed to seek specific data to add stronger support to their arguments. It may also be necessary to search for new sources for this purpose. This triangulation phase is important. If the researcher is unable to find other sources that triangulate the arguments being proposed in their findings, then the conclusions drawn may need to be more tentative than if the arguments could have been triangulated with other sources. However, the fact that the arguments cannot be triangulated will also signify the way in which the research is contributing new data (knowledge, understanding, concepts etc) that makes the research unique. In primary research, this triangulation phase will involve the researchers comparing the empirical data they have gathered from their experiments, observations interviews and so on, and relevant secondary sources.

The conclusions are more powerful and have greater validity if they are drawn up only after thorough exploration of all the available evidence. It is the responsibility of a professional researcher to ensure they do this. In primary research, the available evidence will be a combination of the unique empirical data the researchers have gathered. In secondary research, such as a literature search, data is only secondary data resulting from the researcher’s investigation of an issue. However, it is the lines of reasoning and arguments that the researcher develops from these secondary sources that will form the ‘new’ or unique contribution to knowledge and understanding, which is necessary to make it a piece of meaningful research with well-validated conclusions.

**Potential sources of bias and error**

In the UK, research conduct expectations are that researchers have a duty of care to ensure that they avoid errors in their methodology, the presentation of their data, its analysis and the conclusions then drawn.

Researchers should plan their methodology to minimise the risk of errors. Ethical committee approval for research should be vigilant regarding critically evaluating the methodology being proposed to ensure that there is a minimal risk of potential errors. Peer review prior to publication of the research report can help remove many errors in the content of the report, including weaknesses in the analysis of the data or the conclusions being presented. Wakefield’s colleagues (who were to be named as co-researchers) reviewed the research report and disassociated themselves from the report before it was published (see the case study in the section on Use and misuse of results).

**Sources of bias**

Another way in which research data can be distorted is through bias, where a particular perspective is explored to the exclusion of other perspectives. Examples of how research may be biased include:

- ignoring rogue data (data that does not fit the pattern evident from the rest of the data)
- designing the research methodology so that it intentionally, or unintentionally, favours a particular outcome, for example by asking leading questions, or the profile of the sample studied not being representative of the sample population
- only considering a limited number of interpretations of the data in the conclusions.

This list is not exhaustive, and you may encounter other sources of bias in sources you access in your literature search.
Source of error
Sources of error in research can arise for a variety of reasons, for example through limitations in the equipment or the research tools used, from a poorly thought through research plan design or through insufficient standardisation. As part of the analysis of any research, all researchers should always acknowledge potential sources of bias or error in their own methodology, as well as any in the sources they use. In scientific experiments, equipment is calibrated for errors. In social science research, it is usual to carry out a small scale, preliminary pilot study to test that any interview schedule or questionnaire is likely to yield reliable data.

Bias and error may be an unintended consequence of the research design, which only becomes apparent when the research is in progress, or when the data is analysed. If bias or error is recognised at an early stage of the research, the researchers may be able to adapt their methodology to minimise the impact on their results, or to quantify the influence.

Key term
Pilot study – small scale, preliminary study used prior to undertaking a research project, to evaluate whether the proposed study will be feasible, and also to improve its design.

The extent to which bias or error may have influenced the results is an important determinant of the validity and reliability (see page xxx) of the research findings. A researcher failing to consider possible sources of bias or error in their data analysis would be unethical. When you are carrying out your literature search, if you only have time to focus your analysis on one aspect of the data collected, you should make this explicit in your research report. Otherwise, you could be vulnerable to the accusation that you are introducing bias into your search by ignoring some of the data you have searched. In primary research in health and social care involving participants, it would be unethical not to analyse all the data collected, because it would mean you had collected personal data from participants unnecessarily, and you would be contravening the Data Protection Act.

Distinguishing between fact and opinion
In the UK, decisions about health and social care are expected to be evidence-based. As explored earlier, the focus of all research in health and social care is to provide the evidence on which to base health and social care policy, practice and provision, as well as to acquire new knowledge and understanding. Health and social care research aims to establish factual information through the application of rigorous research principles.

Key terms
Evidence-based practice (EBP) – in health and social care, practice that is informed by reliable research data that enables the most appropriate care to be provided in the specific context of the circumstances.
Fact – a phenomenon that is known, for example children grow into adults; or can be proven to be true, for example people affected by dementia lose aspects of their memory.

As already stated, research is a planned process and in order to plan, researchers need to have a clear understanding of the purpose of their research and what they are going to investigate. To do this, they define specific lines of enquiry, or the themes they will investigate. Their lines of enquiry will influence what their sample population
will be, how they select their participants, what methodology they will use, what questions they may ask in interviews and/or questionnaires etc. There may be several possible lines of enquiry but for research to remain focused, a researcher in health and social care will probably investigate more than one, but probably no more than five, in any one study or project. Other lines of enquiry could be included in the recommendations for further research made at the end of the project.

When carrying out a literature search or review, where the researcher is only looking at secondary sources, you have to be careful to distinguish between the evidence in each source, which is based on fact, and the evidence which may only be a matter of opinion.

In health and social care research that has been well planned and structured, the researcher explores each of their lines of enquiry into the issue they are investigating by systematically analysing the data presented in each source. Then, based on logical reasoning, the researchers bring together, or synthesise, their own unique arguments based on the evidence from each of their sources to develop new, original thinking about the issue, and to draw conclusions as to how that new knowledge and understanding benefits health and social care. All conclusions drawn from the literature search should take into account any sources of error and bias in their methods, and any uncertainties not proven by their evidence. Research rarely results in absolute certainty, so researchers often use tentative language such as 'supports the concept', or the evidence 'suggests' that X has a beneficial effect on Y, rather than stating it 'proves the concept'. Conclusions should relate back to the original aims of the research but sometimes research can reveal unforeseen benefits that were not identified at the research planning stage.

In health and social care research, because of the difficulties associated with multiple variables – only some of which can be controlled – aspects of the conclusions drawn may incorporate opinion as well as fact.

The issue about practice, however, is that every individual is different and unique – both biologically and because of their past experiences and current circumstances. This means that evidence from even the best health and social care research is not necessarily going to provide the perfect care solution for any single individual. Evidence-based practice should blend the knowledge and understanding gained from good quality research with the unique circumstances of the individual, to derive the most appropriate care for that individual.

Interpreting graphs and tables produced by others

Tables are a useful way of organising data systematically. There are several examples in this unit. Each table should have a heading, and each column within it should have a suitable heading, indicating the units of measurement if appropriate, for example height in metres or weight in kilograms.

Graphs and charts can take a variety of different forms (see Table 4.9) and when exploring secondary sources in a literature search, you need to ensure that you have accurately understood the data in each graph and chart and used it effectively to develop lines of reasoning, arguments and your conclusions.
Table 4.9: Features of different formats for presenting numerical data

<table>
<thead>
<tr>
<th>Format</th>
<th>Features of the format</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tables</td>
<td>• Suitable for quantitative and qualitative data.</td>
</tr>
<tr>
<td></td>
<td>• Enables systematic and compact presentation of data.</td>
</tr>
<tr>
<td></td>
<td>• Enables sequencing in ascending or descending order, especially if entered on a spreadsheet.</td>
</tr>
<tr>
<td></td>
<td>• Useful for recording measurements as they are made, or presenting several different measures in a systematic and compact format.</td>
</tr>
<tr>
<td>Line graphs</td>
<td>• Only suitable for plotting continuous data. Plot the dependent variable (e.g., weight) on the y axis against the independent variable (e.g., time) on the x axis. Each point on the graph can be joined by a straight line.</td>
</tr>
<tr>
<td></td>
<td>• Useful for identifying trends (change over time).</td>
</tr>
<tr>
<td>Bar charts</td>
<td>• Used for discrete data. Each bar is separate from other bars, bars have identical widths, varying only in height (or length if horizontal bars). Complex bar charts, e.g., Figure 4.11, can represent sub-categories within the same bar.</td>
</tr>
<tr>
<td></td>
<td>• Useful for presenting data relating to different categories, e.g., age groups.</td>
</tr>
<tr>
<td>Pie charts</td>
<td>• Used to present proportions of a whole, e.g., a population and its sub-groups. The size of each segment is proportionate to the percentage of a 360° circle, the pie.</td>
</tr>
<tr>
<td></td>
<td>• The size of each sub-group in the data is presented very clearly, but does not represent absolute values unless these are stated separately.</td>
</tr>
<tr>
<td>Histograms and</td>
<td>• Histograms are only useful for plotting continuous data. Plots a frequency distribution, where each measure is categorised into a class representing a specified range of measures. Each class covers an identical range, e.g., 0–4.9, 5.0–9.9, 10.0–14.9 etc. Each bar is presented with no gaps (unless none of the measures fall into one of the classes). Frequency is shown on the y axis and the classes on the x axis.</td>
</tr>
<tr>
<td>distribution curves</td>
<td>• In a distribution curve, the frequency values are represented by a curved line. A normal distribution will have a ‘bell’ shape.</td>
</tr>
<tr>
<td></td>
<td>• Both provide a visual presentation of an ‘average’ value, showing the range or spread of values in a data set.</td>
</tr>
</tbody>
</table>

When reading and interpreting graphs and tables, the important points to focus on include:

▸ the title of each chart, table or graph, which should tell you in words what it is illustrating, such as the two variables being measured against each other
▸ the units of measurement of each variable that are used on the x and y axes
▸ the scale used on each axis, particularly noting whether the scale starts at zero
▸ any patterns evident in the chart or graph, for example erratic/consistent trends in a line graph or bar chart, even/uneven split between different segments of a pie chart, normal/skewed distribution of data
▸ any specific notes that might indicate variations recognised by the authors of the article.

You will be expected to analyse some quantitative data and to interpret tables, graphs and charts. Where data is presented in a tabulated format, you could convert it to a suitable graph or chart – and this would make it unique to your search. You can also develop your graph electronically. Figure 4.18 shows ways of presenting large data sets, which can have any value, such as measures of height and weight.

Key term

Data set – a large number of values of the same measure from different individuals/tests.
Selecting relevant numerical data

Understanding a research report will involve interpretation of the numerical data it is likely to contain. You should expect to locate and select appropriate numerical data as part of your literature search. As you have seen, visual formats for presenting data help to reveal patterns in the data, which may be difficult to identify just by looking at the tables of the numerical data collected in the research.

Analysis of results

Analysis involves a detailed examination of the data you collect from all your sources and, in addition, being able to make links between the different data from all the sources.

Compilation of data

As part of your literature search, you will probably look at several sources before you find maybe between three and five that are the most relevant to your lines of enquiry. Some articles may contain more qualitative data, while others will have more quantitative data, and some may include both. Some may be more relevant and some less so. You may find one source that includes specific data that is useful evidence to support the arguments you might want to develop. You will need to analyse each article carefully and separately in the first instance, identifying the methodology used in each and the lines of enquiry investigated, the results obtained and the conclusions the researchers drew from their research results.

Your lines of enquiry will help you structure your analysis so that you can interrogate each source for each line of enquiry in turn. You will explore where there are similarities and differences regarding the data each contains about the issue you are investigating. Similarities will enable you to triangulate the data from two or more sources. The differences may reveal interesting points to discuss.
Once you have analysed each source for each line of enquiry separately, you can then start to develop your own arguments, bringing together relevant strands of data and opinion to develop a new understanding, or a different perspective on the issue.

**Results and findings**

When carrying out primary research, a researcher may be measuring large quantities of data or collecting data over a long period of time. It is, therefore, essential that the measurements made are recorded systematically and clearly, so there is no uncertainty later regarding what was being measured and the actual values measured. Digital devices are helpful but the researcher must be disciplined in keeping records of all the raw data gathered during experiments and observations.

In your literature search, the quantitative data you will be processing is likely to be from published statistical data. You will need to keep full records of the source of each piece of statistical data you find because you will need to list the source in your reference list for the written assessment. However, if you are collating quantitative data from your secondary sources, you still need to take care that you note what the source was actually measuring. For example, the data included in the National Child Measurement Programme case study (see the case study on the National Child Measurement Programme), relates to the incidence of overweight and obesity, which means the number of children with a BMI that indicated they were overweight or obese; the published report includes data separately for overweight and for obesity.

Collating qualitative data also requires discipline and care. You might find it useful to develop a mind map for each source to capture key features of the source, such as the methods used. Alternatively, you might develop a mind map for each line of enquiry that you are investigating, and use colour coding to differentiate the source of the entries you make on each mind map. Mind maps are particularly useful because they enable you to bring together a considerable quantity of qualitative data on a single page.

**Methods of analysis valid for the data collected**

Sequencing data in numerical order can be helpful, for example statistics relating to different years. Tables can be useful for organising data so it is easier to make comparisons to highlight similarities or differences, perhaps to contrast statistical data local to your area with the equivalent national data. Tables are also useful at a preliminary stage, before presenting quantitative data as a chart or graph; using spreadsheet software will aid this process. One way of avoiding plagiarism is to present data from a source in a different format. For example, if it was presented in the text, create a table, or convert data presented in a table to a chart or graph.

**Use of percentages**

A percentage enables you to consider numerical data as a proportion of a larger whole. The whole has a numerical value of 100, and sub-sets within that total are expressed as a proportion of 100. Many statistics are expressed as a percentage of the total population, or as a percentage of a smaller population, such as pupils aged 11–15 years old.

> **Table 4.10:** Selected statistics regarding smoking habits in England, as a percentage (source: Health & Social Care Information Centre, Statistics on Smoking, England 2015)

<table>
<thead>
<tr>
<th>Percentage</th>
<th>2013</th>
<th>2003</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smokers among all individuals aged 16 and over</td>
<td>19</td>
<td>26</td>
</tr>
<tr>
<td>Pupils aged 11–15 years who have tried smoking</td>
<td>22</td>
<td>42</td>
</tr>
</tbody>
</table>
Table 4.10 illustrates the usefulness of using percentages. The concept of a smaller number is easier to understand than the much larger number of smokers in each of the two categories. Also it enables comparisons to be made between the figures for 2003 and 2013, even though the number of individuals in each group is different.

**Use of statistical averages**

‘Average’ is a valuable concept that to understand in the context of both health and social care research. In statistical contexts, there are three different measures of average: mean, median and mode. Each provides useful information about a data set, but in combination they describe the data set more fully.

The mean is calculated from all the individual values, but it does not provide an indication of the spread of the individual values. If one of the values is much larger or much smaller than the majority of other values, then the mean will be distorted because it will be raised, or lowered, by the one rogue value. In contrast, the median value gives a clearer idea of the spread of individual values, because it means that half the values are bigger and half the values are smaller than the median. The mode, or modal value, provides information about the size of the most commonly found value.

If the values in the data set follow a normal distribution when plotted, then the mean, median and mode have the same value – however deep or shallow the bell curve (see Figure 4.18). The difference between the highest and lowest value in a data set is the range of values. Data generated from individuals is likely to show a considerable range because every individual is different.

In health research, the data collected is more likely to be measurable through using instrumentation and chemical analysis, for example analysis of blood or urine samples, so variations in the methodology are likely to be lower. However, in social care research, where the social science methodologies used are less easily controlled and standardised, there may be more variation. The different measures of average then become useful tools to describe the data generated more accurately. For example, if the value of the mode and median is lower than the mean, it suggests that the majority of the values lie towards the lower end of the range. Conversely, if the median and mode are larger than the mean, the majority of the values are higher so there must be some very low values reducing the value of the mean. The researcher might then investigate why their data did not fit.

**Making notes and keeping records from source material**

Keeping detailed records of all activities carried out in a research project is essential, especially as a formal research project may continue for many years. Your literature search will be completed in a relatively short time, but it is still essential to keep full records of the research you undertake during that period. Unless you keep full records, you are likely to forget the details you need to return to sources that you accessed early on, or thought processes sparked by a discussion about another unit in your study programme. Your record keeping should include:

- dates of all actions
- reading and thinking relevant to your literature search
- notes about the information, concepts, data and so on that you consider might be useful – whether written as text or as visuals, such as mind maps
- full details of every source you access, (see page xxx) so that if you need to you can return to the same source later.
You will probably access many of your sources electronically. Those that you may want to scrutinise closely might be worth saving, or bookmarking for ease of later access. It will be essential to store any sources you access systematically, so you that you can access them again at a later date. For example, you might use a Word folder to file e-documents or, if you are working from print copies, you will need to file them safely.

**Reading techniques**

Reading many pages of dense text with few headings, which use sophisticated jargon and are written in an academic style, may contrast considerably with the format of text you are used to reading in this textbook, for example. Additionally, many people have become used to reading just short snippets of text online or on a mobile device, for example social media messages. When searching for sources, you will want to ascertain fairly quickly whether a source is relevant to your search or not. You will need to develop reading techniques, which are valuable in research to ensure that you are accessing the sources you need without wasting time on irrelevant sources. When used in combination, they can speed up a literature search by enabling judgements about the relevance of a source and whether it is worth closer scrutiny.

**Searching for key words**

Key words (see the section on Identifying, analysing and evaluating source material) are very useful for research purposes, and can help you narrow down your literature search more quickly, to locate relevant sources more effectively. As a starting point when scrutinising the research reports or articles you are going to use for your literature search, you could look for suitable key words.

**Scan reading**

Once you have identified a few key words, and have started to search for secondary sources, you will then need to scan read each source to see whether it includes the key words you have selected. Scan reading involves passing your eyes over the text quickly, and only for the purpose of locating the key words you are looking for.

**Skim reading**

If the text includes the key words you are seeking, then you can proceed to skim read it as a quick means of gaining an overview of the information in the text. Skim reading involves passing your eyes quickly, from left to right and top to bottom, over a piece of text to gain an overview of what the whole text is saying.

**Scrutiny of text**

If after scanning and skimming you consider the text could be relevant and useful to your literature search, then you may choose to scrutinise the text more closely. Scrutiny is a slower process, involving detailed reading of the text to examine the full meaning of its content. You could possibly delay your close scrutiny until you are collating the data from your search and preparing for analysis and evaluation.

- **Scan reading** – Passing your eyes over the text only for the purpose of locating key words.
- **Skim reading** – Passing your eyes quickly from left to right and top to bottom over a piece of text so that you gain an overview of what the whole text is saying.
- **Scrutiny** – A slower process involving detailed reading of a text to examine the full meaning of its content.

These reading techniques are valuable in research because used in combination, they can speed up a literature search by enabling judgements to be made quickly about the relevance of a source and whether it is worth closer scrutiny.
Referencing conventions

By now, you should be aware that you should acknowledge the sources of information you have used when researching for your assignment tasks.

Creating a bibliography

For assignment work, it is sufficient to list the sources you use in a bibliography (see Table 4.11). However, in the context of formal research, whether primary or secondary research, acknowledgement of sources is particularly important, because it enables all who are interested in the research reports to know what informed the decisions behind doing the research.

Creating a reference list

A reference to a source, to a specific article or data, must be precise. Acknowledgement of your reference source is required whenever you quote facts, knowledge, opinions, new terminology, statistics or use visual images that you have taken specifically from a particular source. This process is known as citation.

Key terms

Bibliography – a list of published sources relevant to a topic that have been read to increase knowledge and understanding, but which are not necessarily specifically referred to in an essay or research paper.

Reference – a source referred to in an essay or research paper.

Citation – the process of quoting evidence from other sources.

When citing material, you must first acknowledge this within your own text, immediately after you have cited the information from the source, for example:

‘It has been said that research is a planned process in which information is collected systematically for a specific purpose, analysed and reported. (Stretch and Whitehouse, 2010)’

In this example, the book has two authors, but if your source has three or more authors, then the convention is that you provide the name of only the first author followed by et al. (Et al. is a Latin term (et alia) meaning ‘and others’) You should then provide a reference list at the end of the text in which you give the full details of all the authors of the sources cited, for example:


Ways of acknowledging sources used in research have been established over time, and the conventions usually adopted are based on those prevalent in academic communities. The referencing technique most used in health and social care research is known as Harvard referencing, which you may already have been introduced to. Although there are some variations of detail, the key information you should provide for some of the most common types of source is presented in Table 4.11, which shows only a small selection of sources. Universities publish very detailed instructions regarding how they expect learners to present their reference list for a large number of different types of source, including social media.

Research

Use the internet to find out what guidance different universities give to their learners about acknowledging sources in their written work.
### Table 4.11: Conventions for presenting the details of sources used in a research report or in academic writing

<table>
<thead>
<tr>
<th>Type of source</th>
<th>Details you should provide and the order in which they should be presented</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Book</td>
<td>Author 1, Author 2, Author 3 [or Author 1 followed by ‘et al. if there are many], (Year of publication), Title of book, Publisher.</td>
<td>Stretch, B. and Whitehouse, M. (2010) <em>Health and Social Care, Book 1</em>, Pearson Education Ltd.</td>
</tr>
<tr>
<td>Journal article</td>
<td>Author 1, Author 2, Author 3 [all authors even if there are many], (Year of publication), Title of article, Title of journal, Volume, (Issue number), Page number(s)</td>
<td>Scobie, L. Duncan, E.A. Brady, M.C and Wyke, S. (2014) Goal Setting in services delivering community-based stroke rehabilitation: a United Kingdom (UK) wide survey. <em>Disability and Rehabilitation</em> 37 (14), 1291–8</td>
</tr>
<tr>
<td>Newspaper</td>
<td>Author(s) of article being cited, (year) Title of article, Name of newspaper, date of edition as DD/MM/YYYY</td>
<td>Broomfield, M. (2016) ‘Cancer sufferers should lose weight to beat disease, Harvard scientists believe’, <a href="http://www.independent.co.uk">www.independent.co.uk</a>, accessed 6 June 2016</td>
</tr>
<tr>
<td>Internet source</td>
<td>Author 1, Author 2, Author 3 [if stated], Title of article, full URL, access date DD/MM/YYYY</td>
<td>HSCISC (2015) National Child Measurement Programme, England 2014/15 (accessed online at <a href="http://www.hscic.gov.uk/searchcatalogue?productid=19405&amp;q=title%3a%22national+child+measurement+programme">http://www.hscic.gov.uk/searchcatalogue?productid=19405&amp;q=title%3a%22national+child+measurement+programme</a>)</td>
</tr>
</tbody>
</table>

If you have accessed sources to acquire general knowledge and understanding, but you are not using specific pieces of information from that source, then you do not need to mention these sources within the text itself. Instead, you should provide a bibliography at the end of the text, listing these sources using the same technique used in your reference list. In both a bibliography and a reference list, sources are usually listed in alphabetical order of the surname of the first author of each source. The exact sequencing and font styling of the other details will depend on the publisher of the article, but the key details are usually the same.

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**Assessment practice 4.2**

In 2015, the World Health Organization reported on the increasing concern regarding the global phenomenon of antimicrobial resistance (AMR). Infections caused by viruses, bacteria, fungi and parasites have been found to be untreatable, which could mean that in the near future people may die of infections that have become rare since the introduction of antibiotics in the 1950s. Evidence indicates that the treatment of tuberculosis, pneumonia, gonorrhea and hospital-acquired infections, such as methicillin-resistant *Staphylococcus aureus* (MRSA) and *Clostridium difficile*, is being affected. In 2015, Public Health England reported that antibiotic use in England had increased by 6.5 per cent over four years, and that there were marked differences in the number of antibiotic prescriptions issued in different parts of the country.

Find a minimum of two sources relating to AMR and analyse them.

1. Identify five possible lines of enquiry for a literature search relating to AMR and prepare a formal reference list.
2. Explain the causes of AMR, referring to the sources you have accessed.
3. Based initially on the two sources you have accessed relating to AMR, discuss the difficulties in restricting the use of antibiotics in the UK health and social care sector.
4. Evaluate the effectiveness of possible strategies for limiting the further development of AMR in the UK population.  

(15 marks)
Carrying out and reviewing relevant secondary research into a contemporary health and social care issue

For this unit, you will be required to carry out a small research project in the form of a literature search. You will be using secondary sources only. However, you need to be fully aware of a range of research methodologies used to generate primary data, so that you can take these into account when analysing and evaluating any research reports of carried out by others.

Your literature search will involve you posing a research question relating to a contemporary issue. Figure 4.4 shows some of the issues that are of public interest and have made recent news headlines. The issues identified are not exhaustive and new issues of similar interest are likely to emerge in the future.

Selecting appropriate secondary sources

You will need to find sources that publish reports of reliable research. You will be seeking to locate and effectively use sources that are authoritative, objective, factual or based on measurable evidence. There are many such sources but the following types of source will probably be most useful for your literature search.

Professional journals

Professional journals publish full reports of original research for an audience of academics and health and social care professionals. Readers are usually also researchers, who may wish to replicate the methods to test the reliability of the results reported. These reports will be written in an academic style. They will give considerable detail about methodology and sophisticated analyses, often using statistical methods to calculate the statistical significance of the results reported. You should be aware of such journals but you are not expected to include such advanced sources in your literature search.

Professional bodies

Professional bodies in health and social care include organisations such as the Health and Care Professions Council (HCPC) and the Nursing and Midwifery Council (NMC). Professional bodies can be a potentially useful source, especially if you are exploring the role of professionals in your literature search. Their websites will include useful information about the professions they regulate or represent, and some interesting reports that particularly relating to the work done by their members.

Textbooks

Textbooks are specialist texts written to support individuals studying, for example for a GCSE or a BTEC, or for a higher level medical specialism. Textbooks published in the last ten years are likely to be available in both print and digital formats. A textbook appropriate for BTEC Level 3 National learners is likely to focus on factual information about a specific subject area, such as health and social care or children's play, learning and development.

Textbooks written for specific qualifications, such as this book, provide information focused for that qualification. Some textbooks are written more generally. Textbooks on specific topics that relate to undergraduate modules of study, perhaps for a nursing or social work degree, may provide more detailed information than a BTEC Level 3 National textbook. They may be useful as sources for this unit.
Factual texts written for the general public can also include valid and useful data. Topics such as dementia care, ageing or living with mental health issues may produce texts that fall into both of these categories.

Academic textbooks tend to be more expensive to purchase than books written for a wider audience so the price may be an indicator of how sophisticated and advanced the text is. It is possible to read sample pages of textbooks online before purchasing them, to check whether the text is understandable at your level of study and experience.

With all secondary sources, the authorship and publishing details are important because they may indicate a particular bias or opinion that would reduce a text's objectivity or its content. Another indicator of the objectivity of a book may be the extent to which it includes references to other sources of information, either in specific references (usual in academic texts at level 4 and above) or in a suggested reading lists, which is more usual for lower level study and for wider reading by non-specialist members of the public.

**Periodicals**
Periodicals are magazines published on a regular basis, usually monthly. Examples might be *Community Care, Nursing Times, The Health Service Journal, Early Years Practitioner*. These publications provide reports and opinion that is highly vocational in nature. They may also advertise jobs in the vocational area in which they specialise, which can provide a clue as to the vocational specialism they represent. Articles in periodicals may consider the impact of new or pending legislation or policy changes on their vocational context, reports of action research and more substantial research projects, or they may review new textbooks or equipment. Most periodicals now have social media facilities where subscribers can contribute their own point of view to ongoing debates.

**Websites**
The internet can be a valuable source of information about a wide range of issues (see the section on Conducting electronic searches). Information about current and past research can be found on many charity websites, for example Diabetes UK or Cancer Research UK and from the websites of government agencies such as the Food Standards Agency or the Care Quality Commission. There are millions of websites. However, when you are doing a literature search, you will be expected to use only the websites of organisations that are likely to be reliable. For example, an 'ac.uk’ ending to the organisation’s domain name indicates that it is a UK university, or a related academic institution, so the research undertaken and the results produced will comply with UK ethical standards.

**Research organisations**
Specialised research organisations publish reports of research, for example:

- the Wellcome Trust is a leading promoter of medical research
- the Medical Research Council is a government funded organisation with a strong reputation in medical research.
- Whatever type of source you access, you should always be mindful of its relevance to health and social care in the UK, which is the focus of this unit.

The country of origin of the source, and the date of the research, can mean that the data it is reporting on may not relate well to health and social care provision and practice in the UK.
Country of origin of a source

- When using search engines to locate sources, you may encounter secondary sources that relate to countries other than the UK. If the article is about a disease or disorder that is common in the UK as well as in other countries, the content of the article may still be useful. However, health and social care services are often very specific to each country. Even within the UK, the health and social care systems are different across England, Wales, Northern Ireland and Scotland. Therefore, you should focus on data that relates to your own home country and how it makes a difference for health and social care provision in that country.

- A source that refers to American departments of government or the American health care system will have minimal relevance. Articles using American spellings and vocabulary should warn you that they will be written from an American perspective.

Date of publication of a source

Any data relating to health and social care that is more than a few years old is likely to be out of date for current health and social care provision, services and practice, as they are continuously changing. Even if researching a specific health disorder, an article that was published ten years ago is unlikely to be providing the most up-to-date data.

Conducting electronic searches

You will be familiar with using electronic search engines in your everyday lives to retrieve information quickly. In contrast to this type of spontaneous use of a search engine, as a form of research, your literature search should be a planned process and a part of the planning will be to adopt a systematic procedure for conducting any electronic searches you undertake for this unit.

Using a search engine

The first step in using a search engine is to select appropriate key words from the article you have chosen to research. Entering the selected key word into a search engine will produce a list of sources that use that key word. If the word chosen is part of everyday vocabulary, this may produce millions of ‘hits’.

Refining search data to manageable size

You will need to change (refine) your key words to narrow down the number of hits to a more manageable number, say 20–30. There are various techniques to help you, such as those shown in Table 4.12.

<table>
<thead>
<tr>
<th>Technique</th>
<th>Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Key word 1</td>
<td>A large number of hits because the search will include every text that uses the key word.</td>
</tr>
<tr>
<td>Key word 1 + Keyword 2</td>
<td>A smaller number of hits because the text will need to contain both words.</td>
</tr>
<tr>
<td>Key word 1 + Keyword 2 + Keyword 3</td>
<td>A smaller number of hits.</td>
</tr>
<tr>
<td>(Key phrase of 4–6 words)</td>
<td>An even smaller number of hits because the brackets will mean the search will only include sources that use the full phrase.</td>
</tr>
</tbody>
</table>

Unfortunately in terms of narrowing an electronic search, the very large number of sources on the internet about all topics related to health and social care may mean that you will need to experiment with finding key phrases that will reduce the number of hits to a manageable number for your purposes.
Using advanced search tools

The lines of enquiry you select for researching an issue will be the first stage of planning for your literature search. Each line of enquiry should enable you to narrow down your search more specifically, and also to identify more specific key words and phrases. Apart from using key words, in more advanced searches such as those available through academic databases, you may have options to narrow the search more precisely. Examples of criteria that can be used include:

- sources only published after a certain date, for example from 2010 onwards
- sources relating to the UK only
- sources that relate only to a specific aspect of the issue, for example children and young people might be defined more narrowly to 16–18 year olds.

Apart from considering the aspects of the issue you do want to search for, more advanced search tools enable you to set exclusion criteria (aspects you actively do not want to explore). You will not have time to explore many sources for your literature search for this unit. However, if you are using advanced tools, you should be aware of the impact that setting inclusion or exclusion criteria may have on the validity of your literature search, in relation to the aims and success criteria that you set for your search.

When you get to the triangulation phase of your literature search and are seeking specific data to support the arguments you develop, then you may need to modify your selection criteria. However, at this stage, your preliminary reading should have equipped you with better knowledge, understanding and some useful key terminology to use in refining your literature search.

Consideration of the suitability of sources

Not all the sources that an electronic search produces will be appropriate for your literature search. Academic reading techniques (see the section on Reading techniques) are useful to ascertain quickly where a source is likely to be reliable and relevant to the lines of enquiry and arguments that you are developing. It might also help you to classify sources into categories, for example:

- very relevant
- possibly relevant
- marginally relevant/useful single statistic, argument or recommendation.

This will help you to prioritise your reading. You should prioritise those sources that are reliable and draw valid conclusions over those that may be based on personal opinion or that could be biased. You should always consider the extent to which the source is likely to be writing objectively, with due regard to confidentiality or participants, has reported conflicts of interest, whether it is a research report, and whether measures were taken to ensure ethical codes were followed.

Free software is available to download that enables you to keep a record of the sources you have accessed, and some will also automatically generate a reference list. Although you may access a large number of sources, you will only have time to analyse a few of them, so you will not have time to enter a long list, nor can you make use of a large number of sources.

Selecting relevant numerical data [to include graphs, tables and statistics]

You should ensure that you access at least one source that includes numerical data. You will need to demonstrate your ability to describe and analyse quantitative data, and to support your line of enquiry and the conclusions you draw from your analysis of all your sources. You may be able to locate data that helps you identify the scale of the issue, and where and how to incorporate it in your analysis of the issue.

Reflect

Consider how each of the selection criteria for secondary sources might impact on the outcomes of a literature search. How might the impact inform the conclusions you could draw and any recommendations you might make regarding an issue explored in a literature search?
Examining and interpreting graphs [and tables produced by others]
You should refer back to the section on Interpreting graphs and tables produced by others to refresh your understanding of how to examine and interpret graphs.

Recognising bias
Again, this has been explored already in the section on Potential sources of bias and error. Remember that potential sources of bias in presenting graphs, tables and statistics may arise from:

▸ an extended scale on an axis, so it exaggerates a difference that may be very small
▸ a small scale on an axis, so a difference is made to appear smaller than it really is
▸ omission of data, so that unexpected or ‘outlying’ values (ones that distort the mean/median/mode) are ignored, because the value reduces the size of a difference that would otherwise be more marked, or establishes a difference that does not fit with the conclusions that could otherwise be drawn
▸ only selecting sets of quantitative data that support the arguments and conclusions you want to draw from the study, and ignoring other data that is contrary to that position.

You should consider any of these possibilities when analysing visual representations of quantitative data.

Evaluation of research
Examining the content of secondary materials [including introduction, body of text, conclusion.]
To read this and any other source you will need to analyse the text of each source you access in detail.

▸ Use academic reading skills as outlined in the section on Reading techniques.
▸ Assess the advantages and disadvantages of the research methodologies used in the article and each source.
▸ Make links between the recommendations made in each source and ways in which the research could be used to benefit people who use health and social care services.

Many of these points have been covered in detail earlier in this unit so brief summaries only are provided here.

Academic reading [to include surveying structure of source materials]
Academic reading differs from reading for pleasure, in that you do not necessarily start reading the source at the beginning and continue until you have reached the end. Generally, you will use your key words to start to look for the information of interest to you.

You can then select the chapter of the book, the article in the journal or the section of the government report that seems most relevant to your literature search. In a book, you can use the chapter titles listed in the contents page for broad topics, and the index at the back of the book to locate information relating to your key words. For a government report, there may be an executive summary at the start of the document, which provides some detail and an overview of the conclusions and any recommendations.
Advantages and limitations of research sources and methodologies [e.g. access to data]

For your literature search, a source that is investigating the same phenomenon in the same sample population as your line of interest will be of particular interest to you. No single source will provide all the information available, and in your literature search you should aim to triangulate (see the section on Methods of analysis and drawing conclusions) aspects of the data in one source with data in another source. If you are unable to find another source that presents similar results and conclusions, then you will need to make a judgement about the reliability and validity of the data and the arguments developed in the source. Any weakness in the reliability of a source should be recognised explicitly when writing about your literature search. Arguments presented in the source may still be useful, but they will be based on less secure evidence, so any conclusions you draw can be less certain and will need to be stated more tentatively/cautiously.

Validity and reliability of data researched

All researchers should take into account the reliability and validity of each their sources be it secondary data from published sources or their data gathered from primary research. Researchers should explicitly recognise any limitations of their methodology in their analysis and evaluation so that the conclusions and recommendations they make are as valid as possible. For example, a source that you consider to be reliable and which contains a well-argued analysis, based on empirical evidence or thoroughly researched secondary sources, should carry more weight when you develop your own arguments than a source for which these characteristics are less clearly present.

Validity depends on what claims are made about a piece of research and how well the claims are supported by the evidence or results from the research. Validity should be considered in relation to various aspects of research. You might use the questions in Table 4.13 when you are analysing your own method/approach to your literature search and to any secondary sources that you use.

<table>
<thead>
<tr>
<th>Validity in the context of different aspects of the research</th>
<th>Possible questions to interrogate a source to test its validity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research methodology used</td>
<td>• Are the methods appropriate for the purpose of the research?</td>
</tr>
<tr>
<td></td>
<td>• Do the methods actually measure what is being claimed they are measuring?</td>
</tr>
<tr>
<td></td>
<td>• What steps were taken to ensure their methods were reliable results? Where these sufficient?</td>
</tr>
<tr>
<td></td>
<td>• How did the researchers take account of ethical considerations in designing the research?</td>
</tr>
<tr>
<td>Results from research</td>
<td>• Is the data presented based on measurable evidence?</td>
</tr>
<tr>
<td></td>
<td>• Have the results been presented objectively?</td>
</tr>
<tr>
<td></td>
<td>• To what extent have the researchers presented arguments that are based on the evidence in their results?</td>
</tr>
<tr>
<td></td>
<td>• Have the researchers considered all the results from their research?</td>
</tr>
<tr>
<td></td>
<td>• Are their arguments logical?</td>
</tr>
<tr>
<td>Recommendations from the research</td>
<td>• To what extent are the recommendations related to the original stated purpose of the research?</td>
</tr>
<tr>
<td></td>
<td>• Have the researchers considered all their evidence in making their recommendations?</td>
</tr>
<tr>
<td></td>
<td>• Have the researchers taken account of any potential bias or errors in their data when making their recommendations?</td>
</tr>
</tbody>
</table>

A secondary source or a literature search that does not consider the extent to which the methods adopted are appropriate, or bases any recommendations that do not take account of all the data available from the research, will have limited validity.
Reliability is about the extent to which the research can be reproduced. Reliable research should produce the same results when repeated by another researcher using exactly the same methods. In a scientific experiment, the scientist must test the reliability of their equipment so they can be sure it is operating consistently, before they commence experiments.

Scientific methods and social science methods involve controls to check that the variable being investigated is not caused by the research itself. In an experiment, results may be carried out in duplicate or triplicate with an average value calculated, in order to eliminate unavoidable variations in each test. If a large number of measurements are taken of the same variable, it is possible to apply statistical analysis to assess the degree of probability of the accuracy of their results. See Figure 4.19.

**Figure 4.19:** Evaluating a source for reliability and validity and for relevance to your own research
Recommendations

An important outcome of any piece of research into health and social care is that the researchers make recommendations, which should relate to the original purpose of the research, taking into account any limitations associated with your research methodology, such as what criteria you selected to narrow your search at the start. When making recommendations, you should always state clearly the extent to which they apply to a specific context – to, for example, 16–18 year olds – or can be generalised more widely – to, for example, all children and young people.

In a small scale project, such as your literature search, you would make perhaps be no more than four or five recommendations. In more substantial formal research projects, there may be many more recommendations. An extreme example is The Francis Report (2013), which made 290 recommendations because there was so much amiss at the Mid Staffordshire Foundation Hospital Trust. Its recommendations led to the Health and Social Care Act 2014, thus effecting significant social policy change, underpinned by law. In turn, this has affected working practices for managers and carers in services provided in hospitals, residential care and in the community. The impact of these changes will no doubt be monitored in research reports over the coming years. However, the steps taken as a consequence of the Francis recommendations will greatly reduce or eliminate a repeat of the poor standards of care associated with the Mid Staffordshire Hospital Trust.

Potential for further development of a research area

You should be able to state two or three recommendations to develop your literature search further. Possibilities that you might consider could include:

- exploring one of your lines of enquiry in more depth
- increasing the breadth of your lines of enquiry, for example to compare different service user groups or areas of provision
- carrying out a piece of primary research, perhaps suggesting a small action research project to ‘test’ a hypothesis that you have developed as a conclusion from your literature search.

Useful perspectives to consider with regards to developing your own research are the extent to which your literature search enables you to generalise your conclusions from the specific; or conversely, the extent to which your conclusions might be narrowed down and applicable to a more specific aspect of health and social care.

Potential for development of working practice and provision of services

This is your opportunity to relate your research to health and social care specifically rather than to the methods you have used. You should have completed the scrutiny of at least two articles and discussed, analysed and evaluated the data they contain thoroughly, so that you have a clear understanding of them. You should also have developed two to three lines of enquiry that enable you to link the different sources you have used, and to draw your own conclusions that are unique to your literature search. Your new conclusions should lead to a different understanding, one that you did not know before you started your literature search. The combination of conclusions you draw should also be different from the separate conclusions already published in the sources you have used.

You should also have thought about how your literature search could lead to improvements in health and social care, remembering the themes regarding the purpose of research in this unit are:
Improving outcomes for people using services
informing policy and practice
extending knowledge and understanding
identifying gaps in provision.

You should be able to assess the extent to which the data might suggest possible developments that could be made into working practices and the provision of services. Possible developments relating to working practices are suggested in Figure 4.20.

When commenting on the potential for further development of your research, you might refer back to the mind map you developed earlier (page xxx) and consider the lines of enquiry that you chose not to develop, due to lack of time. However, whatever you use to help you with this aspect of your literature search, you should ensure that you:

▸ provide at least two suggestions for each of working practices and provision, even if they are remote from the immediate focus of your literature search
▸ justify your suggestions, giving reasons for each
▸ briefly indicate what methodology might be appropriate
▸ outline the benefit to individuals using health and social care services.

The potential development you indicate might be a very direct consequence of your conclusions, or may be more removed – so you would need to be able to explain the links. For example, you may suggest that more research is carried out on the most effective means of improving support for children and young people affected by mental health issues, without necessarily specifying exactly what form this support should take.

**PAUSE POINT**

Review this section to ensure you understand each key term. Can you use them confidently and accurately?

**Hint**

Use the correct terms when making notes from the sources you access for your studies. Examine and evaluate a secondary source that you are using for another unit in your BTEC National Health and Social Care course. Why is it important to understand the concepts of reliability and validity when evaluating secondary sources?
Wider applications of research

Making recommendations for potential future areas of research
The outcomes, or conclusions, drawn from one research study may lead to even more possible lines of enquiry to investigate regarding an issue. Most reports of research in health and social care will include recommendations for future areas or research, which might include:

- investigating a local perspective to compare with a national one, or vice versa
- researching the impact of the issue on a different service user group from the one already studied
- comparing practices in one type of provision compared with another type of provision
- investigating the impact of a change in policy or procedure on a different group of health or social care workers
- measuring the impact of a change in health and social care over a longer timescale.

Recommendations of this sort, and others, should be evident in at least some of the secondary sources you use in your literature search. As indicated (page xxx), you should be able to make recommendations of how your research might be taken forward by others wishing to extend your study. Your recommendations could involve primary or secondary research methodologies or a combination of both.

Implications of research for health and social care practice
Research that is relevant to health and social care practice will relate to practical aspects of what individual health and social are workers are actually doing in their day-to-day work. Possible implications might relate to the following considerations.

- What is the practice activity that the research is providing data about, for example techniques for healing leg ulcers? Could this aspect of wound healing be applied to other types of wound?
- What equipment and so on is required? How will its cost be met?
- Who carries out a particular care, or care-related activity, for example is this a nurse, a care worker or an informal carer?
- Where does a local health or social care activity take place, is it in the patient's home, in a health centre or in a district general hospital?
- Which is the best way to carry out a process, is it perhaps Method 1 or Method 2?
- When is the best timing of the process for maximum benefit, for example after a meal or before eating?
- Why is a process carried out, is the process still necessary in the context of new technologies, for example?
- How is the process carried out, what are the stages and sequencing of the process?

In a small literature search, such as that required for this unit, you will not be able to address answers to so many questions. However, you should consider the extent to which your conclusions might lead to changes in health and social care practices.

Implications of research for health and social care service provision
As explained earlier, the planning and organisation of health and social care provision is an important factor influencing an individual's access to the service/services they need. Professional researchers working for government, local planners, medical experts and others commission research from other organisations, or establish a dedicated research team, to research future needs for health and social care services. You should ensure that you include some sources in your literature search that discuss provision of services, and which make recommendations for change or improvements to services.
Assessment practice 4.3

In 2016, the Stroke Association reported that 1.2 million people in the UK were living as stroke survivors. Further, that although strokes are the fourth most common cause of death in the UK, the incidence of strokes decreased by 19 per cent between 1990 and 2010. Approximately 150,000 strokes occur per year, and 1 in 4 will be fatal within a year of the stroke. The risk of having a stroke increases above the age of 55 years old – one in five women, and one in six men are likely to have had a stroke by the age of 75. However, over a quarter of all strokes occur in people under 65 years of age, and about one in 150 strokes affect people under 20 years old. There are differences in incidence in different regions, and across different ethnicities. Certain lifestyle factors increase the risk of stroke.

Selected data, from a 2014 report of a UK-wide online survey of health professionals providing community-based stroke rehabilitation, indicated that of the over 400 service providers who responded, 83 per cent of their service users received support in their own home; and 53 per cent of the services provided support for between 5 and 12 weeks, involving two to five sessions per week. Although the type of service varied, 82 per cent of the teams were multidisciplinary. The report stated that 85 per cent of all teams included a physiotherapist, 84 per cent an occupational therapist, 64 per cent a speech and language therapist and 70 per cent an assistant. Only 19 per cent of the teams included a doctor. Other professionals were also involved in some teams.

1 Present the data in the above scenario in a systematic format.
2 Describe two possible lines of enquiry that could be investigated in a literature search and justify your choice.
3 Locate and analyse two secondary sources related to one of these lines of enquiry and develop reasoned arguments regarding how community-based rehabilitation service provision can enable survivors of stroke to lead independent lives in their own home.
4 Evaluate the effectiveness of rehabilitation services for patients following a stroke. (15 marks)

Further reading and resources


Websites

Charities sponsoring health and social care research into specific diseases/disorders

- [www.cancerrresearchuk.org](http://www.cancerrresearchuk.org)
  Cancer Research UK: Information about all types of cancer, symptoms, treatments and prevention.
- [www.dementiauk.org](http://www.dementiauk.org)
  Dementia UK: Information about dementia, symptoms, treatments and prevention.
- [www.diabetes.org.uk](http://www.diabetes.org.uk)
  Diabetes UK: Information about diabetes, symptoms, treatments and prevention.
- [www.mentalhealth.org.uk](http://www.mentalhealth.org.uk)
  Mental Health Foundation: Research and support for people with mental health problems.
Websites

**Government agencies**

www.ons.gov.uk

www.gov.uk/government/organisations/public-health-england

www.hra.nhs.uk
Health Research Authority: regulates and protects the interests of the public in health research.

www.hscic.gov.uk
Health and Social Care Information Centre: Provides information, data and IT systems for health and social care.

www.cqc.org.uk
Care Quality Commission: Monitors, inspects and regulates health and social care in England.

www.england.nhs.uk
NHS England.

www.health-ni.gov.uk
Department of Health – Northern Ireland.

www.wales.nhs.uk
NHS Wales.

**Charities specialising in research into health and social care issues**

www.kingsfund.org.uk
The Kings Fund: Charity which aims to improve health and care in England.

www.nuffieldtrust.org.uk
Nuffield Trust: Charity which aims to improve health and care in the UK.

www.wellcome.ac.uk
Wellcome Trust: Charitable foundation supporting scientists and researchers.

www.jrct.org.uk
The Joseph Rowntree Trust: Makes funding available by application for investigation in root causes of conflict and injustice.

www.barnardos.org.uk
Barnado’s: Charity supporting children and young people.

www.actionforchildren.org.uk
Action for Children: Charity working to support children and young people.

**Professional organisations**

www.nmc.org.uk
Nursing and Midwifery Council: Regulates nurses and midwives in the UK.

www.hcpc-uk.org
Health and Care Professions Council (HCPC): Regulates and keeps a register of health and care professionals.

www.adass.org.uk
Association of Directors of Adult Social Services.

www.adcs.org.uk
Association of Directors of Children’s Services.
Focusing your skills

Extending your knowledge and understanding of health conditions affecting individuals using health and social care services

Your ability to meet the needs of individuals using health and social care services will be enhanced if you have a good understanding of the health conditions giving rise to their health and/or care needs.

- Use your literature search skills to access further information about depression, and in particular, the impact of lengthy stays in hospital on the wellbeing of elderly patients.
- Practice your skills of observation to assess the impact of care interventions in a clinical setting on the patients you care for by developing a simple observation checklist to document the frequency with which each patient demonstrates a positive behaviour.
- Triangulate what you have learned about what improves the morale of elderly patients on an orthopaedic ward with the information you have retrieved from your literature search, so that you can objectively evaluate the effectiveness of different care interventions.

Improving your practice skills

Developing self-awareness about the effectiveness of your own skills in delivering personal care should help you to strengthen your support for each patient. A good way of doing this is to maintain a reflective diary or log of specific situations and incidents as they occur in your working day.

- Make notes of those incidents which have been challenging for you in some way, or where you have gained a new insight into an aspect of your work. Record the date, key context details (what/who/when/where/why/how etc) and then make a note of your personal feelings and points of learning from the experience, so that you can refer back to it if a similar situation should arise.
- Develop your skills in asking reflective, open questions of your peer health care assistants, your supervisor and others who work with you regularly, to help you to enhance your practice skills.
Getting ready for assessment

This Assessment Outcome has been written to help you to do your best when you take the assessment test. Read through it carefully and ask your tutor if there is anything you are still not sure about.

About the test

Part A will be issued to you six weeks before the date of the Part B written assessment. Part A will consist of:

- **article 1** relating to research into a current health issue
- **article 2** relating to research into a current social care issue.

In the 18 hours of supervised time you are allocated for Part A, you will need to choose which of the two articles you will use as the basis of your own literature search relating to the issue explored in the article you have chosen. Once you have chosen the article, all your efforts in Part A should relate only to this one article. You will need to carry out your literature search, and allocate time towards the end of Part A to prepare the six pages of notes you will be allowed to take into the assessment room where you will sit the Part B written assessment. You will also need to prepare a formal list of the sources you have used to submit in your taskbook. You will work independently throughout Part A and will receive no feedback from your tutor.

The **Part B** controlled written assessment will last three hours, and there are a maximum of 65 marks available. The Part B paper has two sections, one relating to each of the two articles. The full text of each article is included in the Part B paper.

Each section has four questions, contextualised to the relevant article, so check to make sure you go to the correct section for the article you have chosen. Questions may have sub-questions identified as a), b) c) and so on. It is unlikely that a question will have more than three sub-questions. The questions will require you to demonstrate that you:

- can apply your learning from any aspect of the unit content and from your literature search by demonstrating analytical and evaluative skills to answer the questions.

You will write all your responses to the questions in the spaces provided in the taskbook. Marks will be allocated as follows:

- questions 1–3 will each be worth 15 marks
- question 4 will be worth 20 marks.

All four questions on your chosen article are compulsory, and you should provide an extended answer to each one. Marks are allocated using mark bands 0–4. Each question has its own mark band grid, presented at the end of Part B. Use the relevant mark band grid when writing your response to each question. To earn the marks awarded for the higher mark bands, you will need to demonstrate your ability to apply your knowledge and understanding of the current issue using analytical and evaluative skills in a way that is relevant to the question.

Other points relating to your activity during Part A include the following:

- Aim to ensure you can relate data from your own literature search, either directly or indirectly, through your lines of enquiry and arguments to the four purposes of health and social care detailed in Section A of the unit content. Also ensure you can link your search clearly to the Part A article.
- Make sure the sources you use are current – aim to select sources that have been published within the last five years.
- Prepare a formal reference list of your sources that you can print and bring to the Part B assessment room.
- Prepare the notes you will take in to the Part B assessment in good time, do not leave it to the last minute. The notes you take in to the Part B assessment are likely to be specially prepared and not the original notes you make about each source, though they may include key aspects of your original notes.
- The notes you take in should be presented systematically, in such a way that helps you recall details about the sources and your reasoning during Part A. Mind maps, flow charts, use of bold, highlighting and colour etc could help you navigate through your notes more quickly during the three hours of the Part B assessment.
Sitting the test

- Listen to, and read carefully, any instructions that you are given at the start of the three-hour Part B assessment.
- At the start of Part B, locate the section relating to your chosen article.
- Attach the list of sources you have used in your literature search in the space allocated in the taskbook.
- Allocate the first ten minutes of the assessment time to reading each of the four questions for your article carefully and ensure you understand the different focus of each question. You could annotate the Part B paper at this stage if you wish.
- Refer to the mark band grid for each question for further guidance regarding the focus expected. Re-read the question to ensure you understand fully what is required by the question.
- Take three to four minutes to plan your response to each question, using the Part A notes you have brought with you, checking you focus your response on meeting the Band 2 marks requirements; and then adding the features that will earn you marks for the higher mark bands. Pay full attention to the command verbs and defining phrases in the mark band descriptors. Revisit the question, to ensure you consider all parts of the question while you are preparing notes that plan for your answer.
- Decide the order or sequence in which you are going to present the points you make in your answer before writing up your response.
- If you get ‘stuck’ on a question and are not sure what is expected, move on to the next question and come back to this question at a later stage. Sometimes, a ‘block’ on your thinking on one question can be released by a trigger in the answer you are writing for a different question.
- Move to the next question and repeat the planning, sequencing and writing up process, again always referring carefully to the question and the mark band guidance.
- Allow 20 minutes at the end of Part B to check your responses to each question against the expectations defined by the mark bands, amending or adding to each response, if possible, to strengthen it so that it meets all aspects of a mark band more fully.
- Remember, you will only be awarded marks from the mark scheme if the points you make are included in your response to the relevant question. The points should be made in a way that is relevant to the question, so you should ensure that you address all aspects of the mark band. Marks cannot be transferred from one question to another, so you need to ensure that the points you make are included in your response to the question for which the marks about those points are allocated. It could be relevant to refer to a source or piece of data more than once across the four questions. However, to be relevant to the question it is likely that you will be using the data in a different way in each of the questions.
- Aim to refer to between three and five sources in the course of your four responses, or to demonstrate that you have read and fully understood the content of each source. However, referring to a source just for the sake of it, without demonstrating understanding of its content, is unlikely to add significantly to your marks.
- Make sure you refer to the impact of research on health and social care practice – on the individuals using services, the impact on informing policy and on developing knowledge and understanding.
- You cannot lose marks for a wrong answer; but blank spaces earn no marks and very short answers are likely to earn only a few marks.

Arrive in good time so you are calm and focused, making sure you have brought your pre-prepared notes with you.
<table>
<thead>
<tr>
<th>Command word</th>
<th>Definition – what it is asking you to do</th>
</tr>
</thead>
<tbody>
<tr>
<td>Describe</td>
<td>Provide a thorough account, drawing on data from the article and the sources you have researched as are relevant to the question asked in the assessment.</td>
</tr>
<tr>
<td>Explain</td>
<td>Provide possible reasons for the aspect of the issue required by the question.</td>
</tr>
<tr>
<td>Discuss</td>
<td>Consider the issue in detail, eg different lines of enquiry you have investigated and different arguments presented in your sources.</td>
</tr>
<tr>
<td>Assess</td>
<td>Consider the importance or significance of the evidence you have researched in relation to the question asked, lead to a reasoned judgement on the evidence, eg its characteristics, quality, extent or other feature relevant to the question asked.</td>
</tr>
<tr>
<td>Analyse</td>
<td>Detailed, systematic and reasoned exploration of the aspect of the issue required by the question based on 2–3 lines of enquiry.</td>
</tr>
<tr>
<td>Evaluate</td>
<td>Make a judgement, based on all the relevant information or data and arguments you have explored in your answer to the question.</td>
</tr>
<tr>
<td>Justify</td>
<td>Provide logical reasons based on the evidence (data and arguments you have presented) to the examiner to demonstrate you understand the issue thoroughly.</td>
</tr>
</tbody>
</table>

Remember, responses that are mostly descriptive will only earn a few marks whereas responses that include discussion, analysis and evaluation, consider several lines of enquiry, and reasoning that you developed from the secondary sources you accessed, analysed and evaluated in your literature search are likely to earn more marks. Presenting well-structured answers and drawing conclusions will also benefit your marks.

**Part A**

- Start work on the assessment immediately, in the first supervised session on your timetable.
- Read all the instructions provided carefully and ensure you fully understand what is required of you for Part A. Annotate the document if you find this helpful (but be mindful that you will receive only one copy of Part A, so avoid making the original text unreadable).
- Read both articles carefully, making a few notes, if this will be helpful to you.
- You must carry out your research independently, using a minimum of two secondary sources, in addition to the chosen article.
- Keep full records of all the sources you use – you may find it helpful to use software available to do this, so that the full titles and universal reference links (URLs) are automatically recorded, along with the access dates and other details, for your reference list.
- You should have chosen the article you are going to research by the end of Week 2 (at the latest) so that you allow sufficient time for the work involved in carrying out the research and condensing the six pages of notes that you can take into the examination room for Part B.
- Allocate time for each of the activities required to carry out your literature search, such as finding relevant sources to analyse and evaluate and developing potential lines of reasoning that will assist you in answering the questions in Part B of the assessment.
Part B

- For Part B, you should plan to spend 35 minutes writing your response to each question, and allow another five minutes to review your response and amend/add to it, before moving to the next question. With the ten minutes already spent at the beginning reading and understanding the differences between the four questions, you should have 20 minutes at the end to check all your responses and add any details that you may have overlooked.

- Start planning your response to each question by making brief notes in the taskbook under each question, as ideas/points occur to you when you read each question at the start. Add to these and organise the points you want to make before writing your actual response to each question. Make sure that you provide sufficient detail in your responses to demonstrate your ability to explain, analyse and evaluate. Providing just a description will limit your marks.

Remember you will not lose marks for incorrect or irrelevant points in your extended answers, but you should aim to provide a significant response to each of the four questions, making several points for each and in such a way that they are relevant responses to the question. Notes alone will not be sufficient to earn many marks. With so many marks allocated to each of only four questions, failing to supply a response, or only providing a weak response to one of the questions will very seriously affect the total number of marks you will earn for this unit, even if you earn good marks on the other three questions.

Sample answers

If you organised your time well, you will have had plenty of time to analyse and evaluate the Part A source that you selected six weeks before the Part B assessment. Although a minimum of two sources are specified for your literature search, you should aim to use between five and ten sources. The extra knowledge and understanding gained should better enable you to produce responses that earn marks from the higher mark bands. This number of sources should enable you to explore two to three lines of enquiry relating to the article you have chosen (either Article 1 or Article 2, not both). Your skill will be to use your learning from studying this unit, and the knowledge and understanding of the issue that you have acquired over the duration of Part A, to produce appropriate answers in the Part B assessment.

Look at the sample questions that follow and our tips on how to answer them well.
Answering extended answer questions

Example:

These examples are based on Is mental health care improving?, a research report published by The Health Foundation in March 2015. The report is available at www.health.org.uk/sites/default/files/IsMentalHealthCareImproving.pdf

**Question 1:** What research techniques have been used to collect and present the data in this report? In your answer you should consider the reliability of the results of the research and the validity of the conclusions drawn.

**Answer:** The article presents statistics about the quality of mental health care in England for adults affected by common mental health problems, adults with severe mental health problems and services for children and young people. All the data was obtained from secondary sources so the method used was a literature search. The article lists 79 references and includes lots of statistics about the number of people affected by mental illnesses. The article includes several line graphs which help to show how various factors associated with mental health problems have changed in recent years. The research results are presented as a report with lots of sub-headings which help to identify the different variables studied in the research. There were no ethical issues regarding the research because it was a literature search and did not involve participants.

In this answer, the overall research method has been described at a basic level and there is acknowledgement of the scale of the study from the number of references. The presentation of the data is described and some very limited evaluative comments are included. Overall, the answer is sufficient for Band 2 marks. Using more specialist language, such as differentiating between quantitative and qualitative data, and paying more attention to the full requirements of the question would have earned more marks. Commenting specifically on reliability of the data, for example that many of the statistics were published by government departments, so are likely to be reliable, which in turn adds validity to the conclusions, and mentioning that the research only relates to England, so the conclusions may not apply in Wales or Northern Ireland, could have earned some Band 3 marks.

**Question 2:** What are the implications of this research for individuals with mental health problems and for mental health care services? Refer to the article and to your secondary research in your answer.

**Answer:** The article identifies that about a fifth of people in England have a mental health problem. The charity Mind states that mental health problems are 25 per cent higher in Northern Ireland and identifies regional differences in England. The Health and Safety Executive reported a 60 per cent increase between 2011/12 and 2014/15 in the number of employees experiencing common mental health problems for the first time and taking time off work.
This means that mental health problems affect the economy and the article says that in 2009/10 mental health problems was estimated to cost £105 billion in a year. The article states that a higher proportion of prisoners are affected by mental health problems than in the general population. This could be because people develop mental health problems while in prison or that mental health problems are more likely to lead to behaviours that result in being sent to prison. Drug addiction is a major problem in prisons and is generally known to be linked to mental health problems. Mental health is therefore a serious problem for individuals and for the country.

The Mental Health Foundation claims that relationships people have with each other are important for their mental health and they say that anything which helps people to have a social life rather than live in isolation is good. Having a job helps because it means people have to interact with their workmates and the article says that more people with mental health problems are now getting jobs. The article reports that support for people with common mental health problems has improved since 2010 but that more people with mental health problems now need hospital residential care which usually means they have severe mental health problems. Recent news relating to Southern Health NHS Foundation Trust shows that service users may die because support is inadequate. However, the article says that one of the problems in assessing the quality of services for those with mental health problems is that there is insufficient information available about the services in some areas of the country. This is especially the case for services for children and young people and sometimes they are admitted to hospital a long distance from their homes which adds to their problems. Psychological therapies and antidepressants can be prescribed to help those with common mental health problems and the article says there are targets for 15 per cent to start such treatments each year. The target is for therapy to start within 28 days of being referred but this is not being achieved for everyone.

Overall, care services for people with mental health problems need to be both improved and expanded to cope with the increasing number of people needing the services and to ensure that the quality of the services improves. More information about services so the best practices could be identified to improve other provision would also help as would more data about the effectiveness of different treatments.