1

Health Needs Assessment

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Key points

- Health-care needs assessment is central to the planning process.
- Health needs should be distinguished from the need for health-care; the latter is nowadays defined in terms of the ability to benefit from care.
- There are three commonly contrasted approaches to needs assessment: corporate, comparative and epidemiological.
- Many toolkits and other resources have been developed to assist those undertaking health-care needs assessments.

1.1 Introduction

As is outlined in Figure 3 in the Introduction, the first element of understanding how to improve the health and well-being of a population relies on a thorough assessment of the needs of the specified population, be it a local population defined by geography, a specific age group or those with certain characteristics.

This chapter begins by considering how 'health need' can be conceptualised; the distinction between need, demand and supply; and the difference between health needs and the need for health-care. Secondly, the wider determinants of health are introduced and their relation to health needs discussed. Finally, the steps involved in a systematic assessment of the health needs of a defined population are explained, including tools and resources used to achieve this. Practical challenges are considered.

1.2 How Can Health 'Needs' of the Population Be Conceptualised?

Health professionals spend much time learning to assess the needs of individuals; many know less about defining the needs of a population. The need for health

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underlies, but does not wholly determine, the need for health-care. Health-care needs are often measured in terms of 'demand' – what patients ask for – but demand is to a great extent 'supply-induced' – determined by what care is on offer. For example, variations in general practice referral or consultation rates have less to do with the health status of the populations served than with differences between doctors, such as their skills or referral thresholds [1].

There is no generally accepted definition of 'need'. Last's notion of a 'clinical iceberg' of disease [2] whereby we see or identify only a small tip of what might be occurring in the population has been supported by various community studies indicating much illness is unknown to health professionals (see Figure 1.1). Public health specialists have responsibility for the whole population, and it is important to consider the needs of those who do not contact the health service with symptomatic disease, including those who are at risk of health problems, have early stages of disease or have opted not to seek treatment or advice – the submerged part of the disease 'iceberg'.

Needs can be classified in terms of diseases, priority groups, geographical areas, services or using a lifecycle approach (children/teenagers/adults/older people). Bradshaw's often-quoted taxonomy highlighted four types of need [3]:

- expressed needs (needs expressed by action, for instance visiting a doctor or seeking social care);
- normative needs (defined by 'experts');
- comparative needs (comparing one group of people with another);
- felt needs (those needs people say they have, for instance in a survey).

What might be expressed, normative, comparative and felt needs for an example such as diabetes care?

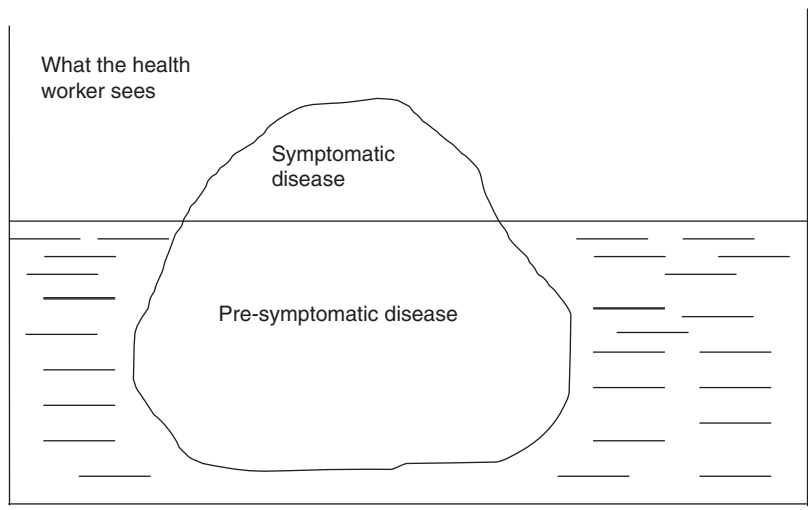

Figure 1.1 The iceberg of disease [2].

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1.2.1 Health or Health-care?

Health is famously difficult to define. The World Health Organization's definition of health embraces the physical, social and emotional well-being of an individual, group or community and emphasises health as a positive resource of life, not just the absence of disease [4]. Health needs accordingly encompass education, social services, housing, the environment and social policy.

The need for health-care is the population's ability to benefit from health-care, which is in turn the sum of many individuals' ability to benefit [5]. As well as treatment, health-care includes prevention, diagnosis, continuing care, rehabilitation and palliative care. The ability to benefit does not mean that all outcomes will be favourable, but implies outcomes that will, on average, be effective. Some benefits may be manifest in changes of clinical status; others, such as the benefits of reassurance or the support of carers, are difficult to measure. Diagnosis and reassurance form an important part of primary care when many people may require no more than a negative diagnosis. Health needs assessment thus requires knowledge of the incidence of the health or social problem (risk factor, disease, disability), its prevalence and the effectiveness of interventions to address it.

1.2.2 Individual or Population?

Health and social care services focus on the individual and need is defined in terms of what can be done for the patients, carers or families they see. However, this may neglect the health needs of people not receiving care (e.g. attending outpatient departments, attending a vaccination hub or known to social care services). Traditionally, the clinical view enshrined in such notions as 'clinical freedom' has taken little account of treatment cost. Services of doubtful efficacy may have been provided if they may be even remotely beneficial to patients. In contrast, the view of public health professionals who adopt a population approach seeks to prioritise within finite budgets. Individual clinical decisions may be made without considering the opportunity costs of treatment, while at a population level such opportunity costs must be minimised if the health of the population is to be maximised.

How could needs be assessed for those individuals 'underneath the clinical iceberg' or not accessing services?

The ethical conflicts raised are not easily resolved. Health professionals will only reluctantly withhold interventions of minor benefit for the greater good of potential patients. Tension between what is best for the individual and what may be best for society will always present a dilemma for clinicians. In reality, a complex range of considerations (of which cost-effectiveness is but one) will always determine both clinical and strategic decision-making. This is explored further in Chapter 5 on decision-making and priority setting.

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1.2.3 Need, Supply or Demand?

Health-care is never organised as a 'pure' market in economic terms. Its products are heavily subsidised and regulated in all countries. The main reason for this is asymmetry of information whereby patients lack knowledge of their own treatment needs and depend on health-care providers to make appropriate decisions. The clinician acts as the patient's 'agent' to translate demands into needs. However, the literature on variation in referrals, prescribing and other activity rates reveals that this agency relationship is complex.

Professional perceptions of need may differ from those of consumers [6]. The latter are more likely to be influenced by external factors such as media coverage and the opinions of relatives and friends. Consumers' priorities also vary with age, health status and previous experience of health-service use.

The health problems considered to constitute need may change over time. Much universal screening activity, for example in the field of child health surveillance, is no longer supported by research evidence. New needs accrue with the development of new technology. There is usually a time lag before lay demand (for health) reflects scientific evidence of need (for health-care). Unfortunately, an even longer time lag distorts the provision of health services. Their supply is affected by historical factors, and by public and political pressures. The closure of hospital beds is ever politically charged. Health services tend to be regarded as untouchable even when their usefulness has been outlived, while medical innovations are generally implemented before they have been fully evaluated. The pharmaceutical industry, the professions themselves and the media are among interested parties that can manipulate demand. (For instance, how would you assess the need for treatments for Pre-diabetes or Hypoactive Sexual Desire Disorder?)

The relationship between need, demand and supply is illustrated in Figure 1.2. It shows seven fields of services divided into those for which there is a need but no demand or supply (segment 1), those for which there is a demand but no need or supply (segment 2), those for which there is a supply but no need or demand (segment 3) and various other degrees of overlap. Any intervention can be fitted into one of these fields. For example, rehabilitation after myocardial infarction may be needed but not supplied or demanded. Antibiotics for upper-respiratory-tract infection may be demanded but not needed or supplied, and so on. Much effort is required on behalf of patients, providers and purchasers to make the three cycles more confluent. Much is known about how to change professional behaviour through financial incentives, protocols, education, audit and even contracts (see Chapter 6): the factors influencing patient preferences are less well understood.

From Figure 1.2, seven types of service can be identified.

1. Services where there is a need but no demand or supply – for example, family-planning and contraceptive services are needed in many parts of the developing world to improve women's reproductive health. They are frequently neither *demanded* nor *supplied*.

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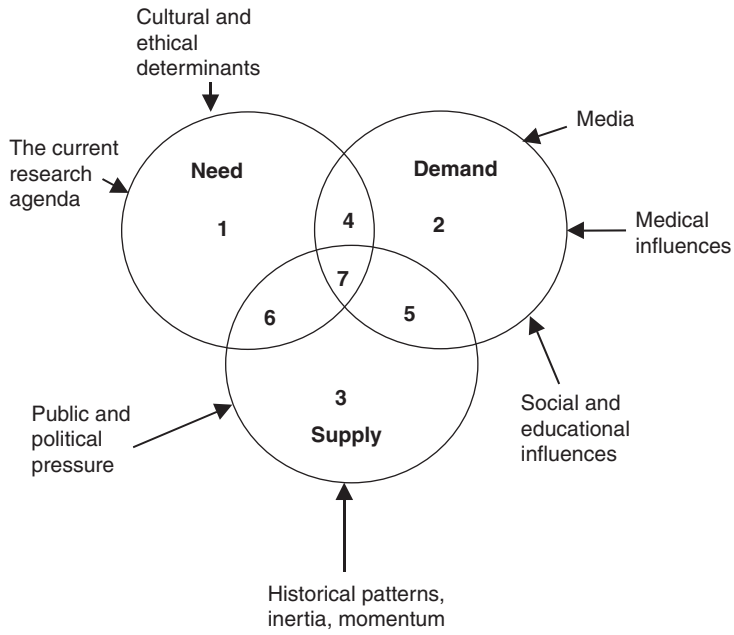

Figure 1.2 Need, demand and supply.

2. Services for which there is a demand but no need or supply – for example, patients may ask for (*demand*) expectorants for coughs and colds. However, cough mixtures are ineffective (no *need*) and seldom prescribed (no *supply*).
3. Services for which there is a supply but no need or demand – for example, with respect to the provision of routine health checks in people over 75 years of age, most people do not request these (no *demand*), but in some practices they are provided (*supply*). Research suggests that the benefits of such checks do not outweigh the costs (no *need*).
4. Services for which there is a need and demand but no supply – for example, substance misuse is a common and dangerous affliction. Methadone maintenance programmes can reduce the physical risks of heroin addiction (*demand*) and may increase the chances of drug misusers giving up (*need*), but they are not always available (no *supply*). Much social care is in short supply.
5. Services for which there is a demand and supply but no need – for example, people may request (*demand*) and be prescribed (*supply*) long-acting benzodiazepines for insomnia. In the long term, this is not effective (no *need*).
6. Services for which there is a need and supply but no demand – for example, even when it is offered, not all health-care staff take up the opportunity of hepatitis B immunisation (*supply* but no *demand*). Yet they are at risk of hepatitis B infection and immunisation is effective at preventing it (*need*).

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7. Services for which there is a need, demand and supply – for example, people with insulin-dependent diabetes ask for (*demand*) insulin, it is effective at maintaining their health (*need*) and the UK National Health Service, unlike many others, can afford to provide it (*supply*).

Can you identify other examples for these seven types of service?

1.3 Understanding Determinants of Health

Another important aspect of understanding health needs is to appreciate the factors and determinants which contribute to the health and well-being of the population. Health and care services must address not only health needs, but act to try to promote health and well-being, prevent ill health and tackle underlying causes of health and inequality (see Chapter 8 for further consideration of approaches to improve the health of the population and Chapter 14 for further detail on inequalities).

The 'rainbow' model of determinants of health created by Dahlgren and Whitehead is a useful and often-cited model to consider the wider determinants of health, which work at different levels (see Figure 1.3) [7]. These are:

- **Individual lifestyle factors**, which can be grouped into fixed factors such as age, sex and genetics, and modifiable factors such as diet, physical activity, cigarette smoking and alcohol consumption.
- **Social and community networks** (interactions between friends, family and other members of the community) play an important role in maintaining people's health and are particularly important in maintaining good mental health.

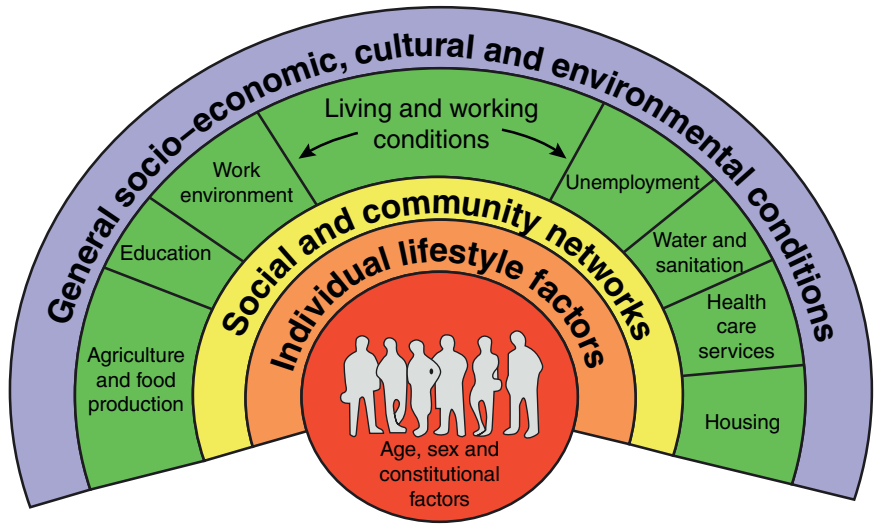

Figure 1.3 Determinants of health by Dahlgren and Whitehead [7]. Reproduced with permission.

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- **Living and working conditions** such as education, agriculture and food production, work environment, housing, water and sanitation, and unemployment also have a role.
- **General socioeconomic, cultural and environmental conditions** such as standard of living, mean income levels, the rights of women in society, employment rates, levels of deprivation and inequalities prevalent in society as a whole have an impact on adult health.

Pencheon and Bradley's model for the driving forces for health and well-being also broadens this to consider avenues for improving health and well-being (see Chapter 8).

1.3.1 Health Needs Assessment (HNA) in Practice

In the UK, after the so-called 'internal market' between health-care purchasers and providers was introduced in the early 1990s, purchasing decisions based on the needs of the population to achieve 'health gain' came into focus (see also Chapter 15). Commissioning organisations with the responsibility to purchase care have been required to assess the needs of their population and to use these needs to set priorities and improve health. Public health practitioners, with their training in epidemiology, disease control and health promotion, have developed a number of techniques to assess population needs. Clinicians are nowadays closer to the commissioning process, in order to incorporate their practical experience of service provision. At the same time, it is essential to involve the general public in shaping services and a number of techniques have been developed to assess health needs from the user's perspective.

Why is assessing needs and priorities important?

There is a gradual move towards integrated commissioning of health and social care, and integration across providers of services to generate greater efficiency and reduce duplication. At present, most health-care is commissioned by Integrated Care Boards, comprising health, social care and public health representatives, which place contracts with providers of care, such as acute hospital trusts, community services and the voluntary sector. Central to commissioning in the UK remain strategic needs assessments undertaken jointly between health and social care in local government to define the current and future health and social care needs of local populations. The information produces a shared view across local government, health services and other relevant organisations, and is used to jointly plan health and care services for those populations.

What additional information could be sourced to understand wider determinants of health needs?

The aim of a health needs assessment is therefore to describe health and well-being problems in a population and detect differences within and between different groups in order to determine health priorities and unmet need (see Box 1.1). It

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Box 1.1 Five objectives of a health-care needs assessment

1. **Planning**. This is the central objective of needs assessment; to help decide what services are required; for how many people; the effectiveness of these services; the benefits that will be expected; and at what cost.
2. **Intelligence**. Gathering information to get an overview and an increased understanding of the existing health or social care service, the population it serves and the population's health needs.
3. **Equity**. Improving the allocation of resources between and within different groups and reducing inequalities.
4. **Target efficiency**. Having assessed needs, measuring whether or not resources have been appropriately directed: i.e. Do those who need a service get it? Do those who get a service need it? This is related to audit.
5. **Involvement of stakeholders**. Carrying out a health needs assessment can stimulate the involvement and ownership of the various partners in the process, particularly patient and carer groups, to ensure commissioned services are fit for purpose.

should look at the wider factors that influence health, including health behaviours such as smoking and social determinants such as housing, transport and employment. It should also look at inequalities within the population and compare local populations with other areas to understand relative need. It should identify where people are able to benefit either from health-service care or from wider social and environmental change and balance any potential change against clinical, ethical and economic considerations: that is, what should be done, what can be done and what can be afforded [8]. Assessment of health-care provision should specify:

- the quantity of care activity required (e.g. numbers of operations, admissions, attendances at emergency departments, in-/outpatients, individual social care packages, supported discharge beds, etc.); and
- the quality of care required, by specifying and monitoring standards (with measures such as infections, readmissions within 30 days of discharge and measures of patient care and family satisfaction).

Health needs assessment is thus a method that:

- is objective, valid and takes a systematic approach;
- involves a number of professionals and the general public;
- involves using different sources and methods of collecting and analysing information, described further in Chapter 2;
- involves epidemiological analysis and qualitative and comparative methods, described further in Chapter 3;

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- seeks to identify needs, evidence-based treatments or services (see Chapter 4);
- recommends changes to optimise the delivery of health services (see Chapter 5); and
- identifies opportunities for quality improvement (see Chapter 6).

The NHS and health systems across the world face similar pressures. These include the rising cost of health-care due to continuing scientific advances, increasing life expectancy and rising public expectations. At the same time, most countries face similar dilemmas: health-service resources are limited and people face inequitable access to existing care. People whose health needs are greatest are least likely to have access to health-care (the 'inverse care law' referred to several times throughout this book). Finally, there are concerns about the appropriateness, effectiveness and quality of that care. The challenge is to make decisions that maximise the benefit for the population, taking into account the resources available. Needs assessment helps this decision-making and involves at least three steps.

1.3.1.1 Step 1: Identifying Health Priorities by Defining the Population under Scrutiny and Collecting and Analysing Routine Data – 'Comparative' Needs Assessment

Routine data indicate what it is that people are dying from, why they consult general practices, hospitals and social services or what care they may not be receiving that could improve their health, well-being and independence. This will help to prioritise topics for local discussion (Step 2) with a range of other local agencies and professionals. These data allow comparisons to be drawn between local services and those available in other geographical areas. It is also possible to compare these data with previously set standards. For example, one might compare hospital rates of health-care-acquired infections with government standards.

Much data are already available and provide information to 'start the ball rolling'.

Chapter 2 gives an indication of routinely available information, which may be accessed from health-care organisations. Discussions about the data will help lead to a consensus on what areas are priorities. It can also be a starting point to involve the public.

There are some disadvantages. The data may be quite old (it often takes up to two years for routine data to become available), some ill health may have been misdiagnosed or not reported, and hospital data may reflect different admission policies for the same condition. Nevertheless, data collection does help to start the process and is a means to approaching others who have a contribution to make.

1.3.1.2 Step 2: Agreeing Local Priorities by Involving Other Agencies, Users and the Public – Corporate Needs Assessment

There are a confusing number of terms for this process, including community appraisals, rapid appraisals and community surveys. Many of the techniques have been pioneered in developing countries by researchers using qualitative methods [9] – semi-structured interviews, for example. These approaches to understanding

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behaviours and beliefs may reduce the distorting effect of measuring needs through the eyes of health professionals.

Professionals from other agencies, including local government and the voluntary sector, may have differing ideas from health professionals and it is vital to take these ideas into account. It is important to be aware of the limitations of professional knowledge. In England, the Health and Social Care Act 2012 established 'Healthwatch', an independent organisation with branches in each locality to represent the views of service users. It is also important to directly seek and include the ideas of users and carers about what improves their health and well-being. These factors may include, for example, acceptable employment, adequate housing, better choice of food, access to green spaces or a bus route.

Can you find high-quality examples of including the views of individuals and communities in health needs assessment and commissioning processes?

There are a number of ways of getting the public involved, including:

- **Citizens' juries**. Representatives of the public or local opinion leaders are selected. Experts give evidence and jurors have an opportunity to ask questions and debate.
- **User consultation panels**. Local people are selected as representatives of the locality. Typically, members are rotated to include a broad range of views. Topics are considered in advance and members are presented with relevant information. A moderator facilitates the meeting.
- **Focus groups**. Semi-structured discussion groups of six to eight people led by a moderator.
- **Questionnaire surveys**. These can be postal, or distributed by hand or electronically. This is often most appropriate when the issues behind questions are well known.
- **Panels**. These are large sociologically representative samples (around 100) of a population in a primary care trust, a clinical commissioning group or a health board, which are surveyed at intervals.
- **Interviews**. For example, with patients after a clinic visit on the quality of care, or with health workers on what they know of people's perceptions of local needs.
- **Rapid appraisal**. This involves the public directly in the assessment and definition of local needs through a series of face-to-face interviews with local informants who have a knowledge of the community. From these interviews and from appraisal of local documents about the neighbourhood or community, a list of priorities is drawn up. This is then assessed collectively by means of a public meeting. Working groups develop action plans. The approach is 'bottom-up' and the key philosophy is not only of public involvement, but of a collective response to health needs.

1.3.1.3 Step 3: Undertaking an Epidemiological Needs Assessment

This stage involves examining specific priorities in more detail (Box 1.2). An epidemiological approach to assessing health needs involves three kinds of measurement. It measures:

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Box 1.2 Priorities for the purposes of HNA may comprise:

- a whole speciality, e.g. mental health;
- a disease, e.g. coronary heart disease or diabetes;
- a client group, e.g. substance misusers;
- groups waiting for interventions, e.g. those waiting for hip operations, families waiting for special educational needs and disabilities (SEND) assessment;
- potentially disadvantaged or vulnerable groups such as ethnic minorities;
- socially deprived groups, e.g. tenants of particular housing estates, isolated vulnerable older people.

1. **The size of the problem**. It looks at how much illness or ill health there is in the community by assessing the incidence and prevalence.
2. **The current services that exist to meet this burden**. It examines how local provision compares with other areas, whether the services meet the needs or whether they are over- or under-provided.
3. **Whether the services are effective**. If new services are required to meet unmet need, it looks at what is known about what works or will make a difference.

Resources for health-care are always finite, so the purpose of this type of needs assessment is to identify health improvements which can be achieved by reallocating resources to remedy over-provision (sometimes) and unmet need. Recommendations are then made on necessary service changes. Chapter 3 describes core principles of epidemiology to assist in the analysis of such data. Toolkits are also available to help undertake needs assessment at a local level [8].

1.3.1.4 Policy, Planning and Strategy Development

The cycle of planning for health-care delivery should originate in an assessment of needs: where are we now and where do we want to get to? The rest of the process is mostly concerned with how to get there (Figure 1.4). Comprehensive needs assessment will generate a bewildering array of possible needs. There are many ways of identifying priorities and this issue is discussed in Chapter 5. The assessment of health impact can help compare how different proposals affect health and inequity [10], a topic which is further explored in Chapter 14.

At whatever level in the system priorities are being agreed, the process should involve as many of the people who will be affected by the choice as reasonably possible (see Chapter 5). Teams need to take careful stock of their current workload when making a decision. In many important areas, work may already be on-going (e.g. falls prevention). There is little point in setting grandiose objectives that cannot realistically be attained. Audit and evaluation (to see whether we have got to where we want to go) is

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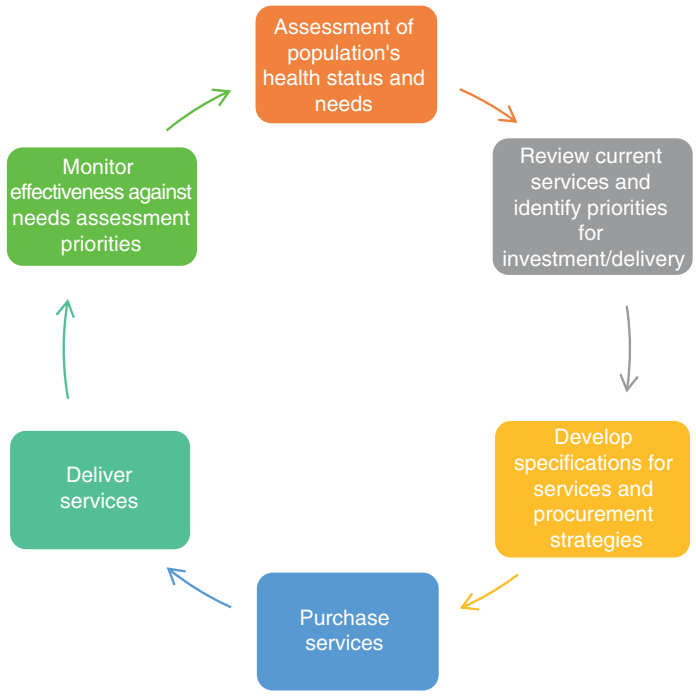
Figure 1.4 The planning cycle.



therefore integrally related to needs assessment (see Chapter 6). Indeed, the selection of topics for evaluation should be framed by systematic assessment of priority needs.

A description of the planning process may falsely imply an orderly sequence. Few practitioners with experience of policy-making will subscribe to this myth of rational planning (see Chapter 15). In real life, it is rarely possible to maintain forward progress around the cycle for long. The process is iterative rather than cyclical. The commonest causes of disruption, other than shortage of finance, are vague objectives, lack of information and changing circumstances, people and politics. The COVID-19 pandemic graphically illustrated the need to be able to plan coherently at pace – even with partial information. Public health advice must remain transparent and autonomous [11].

Use the stages in Figure 1.4 and the example in Table 1.1 to work through the planning cycle for another service or public health intervention.

An understanding of the contingent nature of much planning is important in effecting change. However, consideration of both the planning process and policy-making process as a cycle is helpful when working at a local level within the NHS or partner organisations such as local authorities or voluntary sector organisations. Devising services to reduce the harm caused by alcohol can be used as an example to consider how the planning cycle could work in practice (see Table 1.1). Alcohol

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Table 1.1 An example of local policy and planning

Stage	Possible local actions
Assessment of health status and need	Local needs assessment is carried out and identifies high levels of adolescent drinking and local 'hot spots' such as town-centre venues. Police enforcement activity levels are high in specific locations and public perception of street safety has been worsening. Local emergency departments report disorder issues and levels of alcohol-related admissions are higher than the national average. General practitioners are surveyed and low levels of awareness of the effectiveness of brief interventions to address excess alcohol use are found.
Review current services and prioritise	Stakeholder engagement takes account of the local context (e.g. local consumption levels, the ease of availability, views of local health professionals, views of local schools, the level of enforcements, local political imperatives, local commercial interests and the views of the public). This identifies a need to share information between health and the police, to provide additional capacity in emergency departments, to provide brief intervention training to GPs and support and education in secondary schools, and to adjust policing policies in certain locations.
Develop service specifications and procurement plans	A specification is drawn up for an alcohol specialist nurse to be based in the emergency department, an information system to enable data sharing and the provision of brief intervention training in general practice. A business case for an additional community safety officer capacity is drawn up. Key decision-making forums approve additional resources based on a cost-effectiveness analysis.
Purchase services	Local procurement guidance is followed and potential service providers assessed to determine which are the most appropriate.
Deliver services	Funding is provided, staff are employed, services commence delivery.
Monitor and evaluate services	Key performance indicators on which to assess outcomes have been specified to enable service monitoring and evaluation. These are collected on an on-going basis and any issues they highlight are reviewed.

harm reduction has been a UK government priority for several years and the local translation of this into action will depend on local needs.

1.4 Conclusions

Health needs assessment is the first and, arguably, most important step in planning and evaluating the delivery of care. It is not possible to tell how cost-effective care is if we do not know what our population needs, i.e. what services they will benefit from. Certainly in UK health policy this is increasingly recognised and assessment of both health needs (e.g. the needs of a specific minority population, not restricted simply to the need for NHS services) and health-care needs (e.g. the needs of a locality for mental health-care) are prerequisites for the assignment of resources.

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