Chapter 1

Introduction to pharmacology

Ian Peate

Aim

The aim of this chapter is to provide the reader with an introduction to therapeutic pharmacology and the key issues surrounding medicines management.

Learning outcomes

After reading this chapter, the reader will be able to:

1. Discuss the importance of patient assessment in association with medicines management
2. Understand the role of the Code and other professional duties
3. Appreciate the importance of the proficiencies of pre-registration nurse education related to medicines management
4. Acknowledge and respect patient preference

Test your knowledge

1. What is the nursing process?
2. Describe the keys skills that are associated with patient assessment.
3. Discuss the role and function of the Nursing and Midwifery Council.
4. What does medicines optimisation mean?
5. Discuss risk management strategies in medicines management.

Fundamentals of Pharmacology: For Nursing and Healthcare Students, First Edition. Edited by Ian Peate and Barry Hill.

Introduction

There has been a vast increase in the use of therapeutic agents for medical treatment. The administration of medicines is a common yet important clinical activity. The way in which a medicinal product is administered can determine whether the patient gains any therapeutic benefit or if they will experience any adverse effects from their medicines. The volume and complexity of medication administration contributes to the actual and potential risk of medication errors, which will have a negative impact on a person's health and wellbeing.

The key requirement of a healthcare provider is to 'do no harm', and this is particularly important when the nurse is working with people who have been prescribed medication. The administration of medicines is but one part of the nurse's role; an understanding of pharmacology is essential if the nurse is to provide care that is safe and effective. As well as an understanding of pharmacology, the nurse is also required to work with patients and their families in explaining how to administer the medication, explaining the anticipated effects, the action(s) of the medications and the potential adverse reactions or side effects.

Patient assessment

When a patient is admitted to a healthcare facility (regardless of the setting), an initial assessment must be undertaken which has to include a detailed medication history. Information must be obtained from the patient (and, if appropriate, the patient's family), and information may also be collected from the patient's pharmacy and/or the general practitioner with their permission. In addition, any medications that have been brought in by the patient must be documented and kept in a safe location. At all times, local policy and procedure must be adhered to.

Assessment is the first stage in the planning of care, it is associated with the process of gathering information in order to make decisions about appropriate interventions (Ballantyne, 2015). During the assessment stage, the patient's story is listened to and the nurse–patient relationship is strengthened, ensuring that the patient is truly at the heart of all that is done. The nursing process is a systematic, developing, dynamic approach, that is cyclical in nature, and as such assessment must not be seen as a one-off activity: it is not linear by nature; it is ongoing.

When assessing needs – and this also relates to assessing needs and the use of medications – data is gathered, analysed and organised, and the data is acted upon as critical thinking skills and the mobilisation of resources are used to achieve goals and outcomes that have been set, when possible, in partnership with the patient (Stonehouse, 2017).

Having undertaken patient assessment, a diagnosis is formulated, a plan of care is devised relating to the needs that have emerged following assessment, care is provided using a holistic approach, and finally all that has been done is evaluated to establish efficacy. See Figure 1.1: a systematic approach to care.

The safety and success of medicines administration is based on ongoing nursing assessment. All healthcare providers have a professional duty to ensure that they offer care that is safe and effective (Nursing and Midwifery Council (NMC), 2018a). As well as professional obligations, there are also requirements that must be given due diligence in order to ensure that patient safety is paramount. There is much legislation regarding medicines (see Chapter 3), and the nurse must also adhere to the laws of the country in which they are working.

The skills of assessment require the nurse to undertake a physical and psychological assessment of the person's needs. The nurse obtains a patient history and carries out a physical examination (if required) to identify needs. There are a number of components associated with assessment. Assessment requires the nurse to:

- observe the patient
- undertake a clinical examination
- gather data

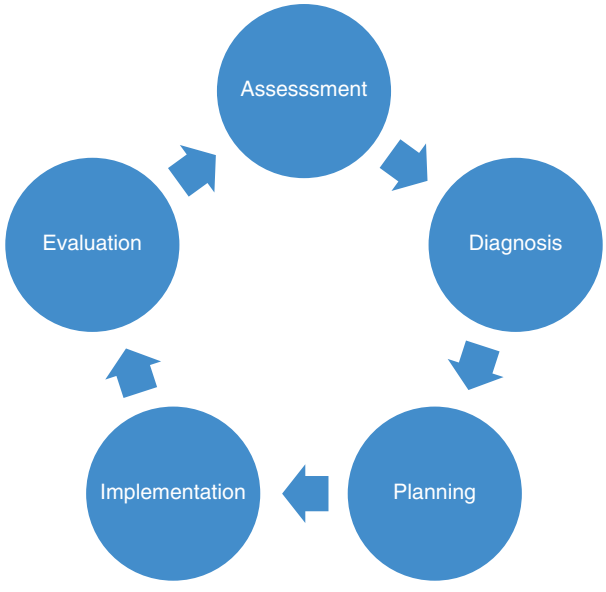

Figure 1.1 A systematic approach to care provision.

- communicate
- undertake various measurements.

Clinical judgment is used to determine the type of assessment required. It is important during the assessment phase to ensure the use of a framework to guide the process as this will help to provide structure and order.

The NMC has suggested that newly qualified nurses will be able to go on a prescribing course soon after their initial pre-registration education; in order to do this, there is a need to include more prescribing theory in undergraduate nursing programmes allowing nurses to prescribe from a limited formulary. It is important to note that nurses will not prescribe at the point of entry to the register (when their pre-registration nurse education is complete), but will complete a post-registration qualification in order to prescribe (NMC, 2018b).

All nursing professionals must practise in line with the requirements of The Code (NMC, 2018a), the professional standards of practice and behaviour that nurses, midwives and nursing associates are required to uphold.

The Code of Conduct

The NMC is the nursing and midwifery regulator for England, Wales, Scotland, Northern Ireland and the Islands. It exists to protect the public and it does this in a number of ways. The NMC sets the standards of education, training and conduct that nurses and midwives are required to adhere to so as to deliver high-quality healthcare. The NMC ensures that nurses and midwives keep their skills and knowledge up to date (through revalidation; NMC, 2017) and uphold the standards of the Code (NMC, 2018a). Where an allegation is made about a nurse's standard of practice or behaviour, the NMC have processes in place to investigate those allegation: they take action if concerns are raised about a nurse's fitness to practice.

The Code sets out in detail the professional standards that nurses must uphold and all nurses, regardless of setting, are required to align their practice and behaviour to the Code. The values and principles that are set out in the Code are not negotiable or discretionary.

All nurses will exercise professional judgment in their work as they offer care to people, including the care that is associated with medicines and medicines management: each nurse

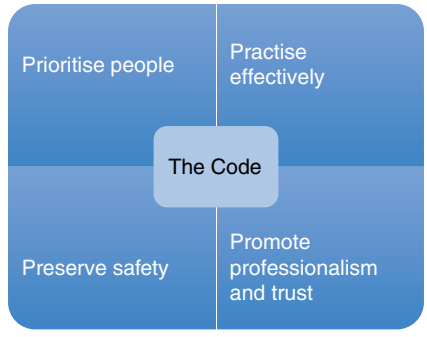

Figure 1.2 The Code. Source: Olympus America, Inc. With permission.

is accountable for their actions and omissions. Nurses are required to uphold the Code within the limits of their competence associated with the contribution they make to overall care provision. Practising within your sphere of competence and your scope of practice is key to the underpinning principle of the Code – to protect the public – and must be upheld at all times.

The Code is made up of a series of statements that taken together imply what good practice looks like. It makes clear that the interests of patients and service users come first, that care is safe and effective and that it promotes trust through professionalism (see Figure 1.2).

Clause 18 of the Code is specifically related to medicines. Nurses are required to advise on, prescribe, supply, dispense or administer medicines that are within the limits of their training and competence, the law, and in relation to NMC guidance and other relevant policies, guidance and regulations. In order to do this, the nurse must:

- Prescribe, advise on, or provide medicines or treatment, including repeat prescriptions (only if the nurse is suitably qualified) if the nurse has enough knowledge of that person's health and is satisfied that the medicines or treatment serve that person's health needs.
- Adhere to appropriate guidelines when providing advice on using controlled drugs and recording the prescribing, supply, dispensing or administration of controlled drugs.
- Ensure that the care or treatment that the nurse advises on, prescribes, supplies, dispenses or administers for each person is compatible with any other care or treatment that the person is receiving, including (where possible) over-the-counter medicines.
- Take all steps to keep medicines stored securely.
- Wherever possible, avoid prescribing for yourself or for anyone with whom you have a close personal relationship.

It should be noted that prescribing is not within the scope of practice of everyone on the NMC register. Nurses who have successfully completed a further qualification in prescribing and recorded it on the NMC's register are the only people on the register that can prescribe.

The Nursing and Midwifery Council's Standards of Proficiency

In 2018, the NMC published future nurse proficiencies for registered nurses (NMC, 2018b) and for nursing associates (NMC, 2018c) along with a range of other revised and updated standards. The standards of proficiency provide the education and training standards that underpin all aspects of nurse education delivery and management.

The standards make significant changes to proficiencies for nurses, introducing a new education framework. The standards of proficiency are designed to enable nurses to meet the changing health needs of the population, to provide them with more clinical autonomy

where appropriate, and to prepare them for leadership roles in the sphere of care provision ensuring the nurse is fit for purpose. The standards are based on the following requirements (platforms) to:

- be an accountable professional;
- promote health and prevent ill health;
- assess needs and plan care;
- provide and evaluate care;
- lead and manage nursing care and work in teams;
- improve safety and quality of care;
- coordinate care.

As well as understanding the principles of safe and effective administration and optimisation of medicines and adhering to local and national policies, the nurse must also demonstrate proficiency and accuracy when they are calculating dosages of prescribed medicines. The nurse has to demonstrate knowledge of pharmacology and the ability to recognise the effects of medicines, allergies, drug sensitivities, side effects, contraindications, incompatibilities, adverse reactions, prescribing errors and the impact of polypharmacy – and also over-the-counter medication usage. See Table 1.1 for the procedural competencies for nurses (registered and associate) that are essential for best practice, evidence-based medicines administration and efficacy.

Table 1.1 Registered nurse procedural competencies and the procedural competencies required by the nursing associate

The registered nurse	The nursing associate
• Undertake initial and continued assessments of people receiving care and their ability to self-administer their own medications. • Understand the various procedural routes under which medicines can be prescribed, supplied, dispensed and administered; and the laws, policies, regulations and guidance that underpin them. • Make use of the principles underpinning safe remote prescribing and directions for the administration of medicines. • Undertake accurate drug calculations for a variety of medications. • Undertake accurate checks, including transcription and titration, of any direction to supply or administer a medicinal product. • Apply professional accountability so as to ensure the safe administration of medicines to those who are receiving care. • Administer injections using intramuscular, subcutaneous, intradermal and intravenous routes and manage injection equipment. • Administer medications using a range of routes. • Administer and monitor medications using vascular access devices and enteral equipment. • Recognise and respond to adverse or abnormal reactions to medications. • Undertake safe storage, transportation and disposal of medicinal products.	• Continually assess people who are receiving care and their ongoing ability to self-administer their own medications. • Know when and how to escalate any concerns. • Perform accurate drug calculations for a variety of medications. • Use professional accountability in order to ensure the safe administration of medicines to those receiving care. • Administer medication via oral, topical and inhalation routes. • Administer injections using subcutaneous and intramuscular routes and manage injection equipment. • Administer and monitor medications using enteral equipment. • Administer enemas and suppositories. • Manage and monitor effectiveness of symptom relief of medications. • Recognise and respond to adverse or abnormal reactions to medications and know when and how to escalate any concerns. • Undertake safe storage, transportation and disposal of medicinal products.

Source: Adapted, NMC (2018b and c).

Medicine management and standards

Nurses and health and social care staff often manage medicines on behalf of those people who use their services. It is a requirement of care providers to promote the safe and effective use of medicines. If healthcare organisations fail to do this, the Care Quality Commission (CQC) (2018) suggest that this poses real risks to people who may be vulnerable, including:

- older people;
- people with reduced mental capacity, reduced mobility or a sensory impairment;
- people who rely on help to take their medicines.

Medicine management standards provide nurses with a framework for safe practice. All nurses must read and comply with these standards, and undergraduate students must also be familiar with them. The requirements laid out in the various standards consider issues essential for the safe management of all medications and also include controlled drugs.

Episode of care: Mental health

Mr. Murphy, an 80-year-old man, has vascular dementia and lives in a care home; he relies on the care home staff to manage his medicines safely.

Mr. Murphy was admitted to hospital after he had displayed signs of a venous thromboembolism and he was discharged four days later; he was prescribed and was taking anticoagulant therapy. When he was discharged from hospital, he was discharged with an 18-day supply of medicine. The care home staff failed to order a new prescription for Mr. Murphy after the 18 days lapsed. The systems within the care home had failed to identify that the medication was not given for between 30 and 33 days.

Mr. Murphy was taken back into hospital with a pulmonary thromboembolism and deep vein thrombosis. He was in hospital for over three months where he eventually died.

The care home had failed to adhere to local policy and procedure that helps to minimise medication errors. Regulations and standards are put in place to prevent people from receiving unsafe care and treatment and prevent avoidable harm or risk of harm. Medicines must be supplied in adequate quantities, managed in a safe way and administered appropriately to ensure that people are safe.

In England, the Health and Social Care Act 2008 (Regulated Activities) Regulations 2014: Regulation 12, for example, aims to prevent people from receiving unsafe care and treatment and prevent avoidable harm or risk of harm. Those who provide care must undertake a risk assessment with regards to people's health and safety when receiving care or treatment and make sure that their staff have the appropriate qualifications, competence, skills and experience to maintain people's safety. If an organisation fails to comply with laws and regulations, they may be prosecuted.

Clinical considerations

Managing medicines in care homes

The National Institute for Health and Care Excellence (NICE) (2014) has published guidelines that address good practice for managing medicines in care homes. The guideline aims to promote the safe and effective use of medicines in care homes, and it offers advice on processes for prescribing, handling and administering medicines. The guideline also recommends how care and services relating to medicines should be provided to those people who are living in care homes.

The Nursing and Midwifery Council (2010) previously issued standards and guidance for the administration of medicines; however, they no longer do this. Professional guidance produced

Clinical considerations

Managing medicines for those receiving social care in the community

The National Institute for Health and Care Excellence (NICE) (2017) has published guidelines that cover medicines support for adults who are receiving social care in the community. It aims to ensure that people who receive social care are supported to take and look after their medicines effectively and safely at home. Guidance offers advice on assessing if people will require help with managing their medicines, who should provide medicines support, and how health and social care staff should work together.

by the Royal Pharmaceutical Society (RPS) (2018a) provides a framework for the safe and secure handling of medicines; this replaces the NMC's previous standards. This guidance uses an all professional approach providing information and advice for all healthcare professionals on medicines management and administration. The RCN and RPS (2019) have co-produced Guidance on the Administration of Medicines in Healthcare Settings, offering principles-based guidance to ensure the safe administration of medicines by healthcare professionals.

In 2017, Higher Education England issued advisory guidance for Nursing Associates with regards to the administration of medicines. The guidance plays a key part in ensuring the Nursing Associate is able to work safely and appropriately with regards to medicine and as part of the nursing team.

As well as the various standards, advice and guidance issued, NHS trusts and other organisations will have also prepared their own guidance on how to safely and effectively handle medicines. The healthcare worker should always check and follow this local guidance when providing care that is related to the administration of medicines.

It should also be remembered that there may be a need to consult other sources of guidance concerning specific areas of practice, such as:

- NICE;
- publications by the British National Formulary;
- the Royal College of Nursing;
- the four UK Health and Social Care Departments;
- specialist associations, such as the British Association of Sexual Health and HIV, UK Oncology Forum;
- the World Health Organization.

Clinical considerations

Managing oxygen in care homes

Oxygen is a medical gas and as such should be treated as a medicine.

Home oxygen therapy is commonly used in care homes. It involves breathing oxygen mixed with air from a cylinder or machine. It is often prescribed for those people who have respiratory conditions, such as chronic obstructive pulmonary disease that can result in low oxygen levels in the blood. Home oxygen therapy can be given via:

- nasal cannulae
- face mask
- tracheostomy mask.

The oxygen is delivered via tubing or mask from an oxygen cylinder, an oxygen concentrator or a ventilator.

Oxygen is prescribed on a home oxygen order form. The form contains details of how the oxygen is to be used. The prescriber sends the home oxygen order form to the oxygen supplier who then arranges delivery.

Staff at the care home should tell the person prescribing the oxygen about any changes in a person's clinical condition; this then allows the prescriber to amend and organise for a new home oxygen order form, if required.

The person's care plan should include information about home oxygen therapy. This should include who it is who will be monitoring the person who is using the oxygen.

The care plan (documentation) should also address the administration of oxygen. This has to include flow rate, frequency and duration of use; the prescriber's details should also be included. Each time staff administer oxygen, these details should be checked to ensure that the oxygen is being administered correctly.

If the person is self-administering the oxygen, a risk assessment has to be carried out (individual risk assessments should include information about the potential dangers of having and using oxygen in the care home). A copy of the risk assessment should be kept in the person's care plan.

Local policy and procedure must be adhered to at all times. The tubing and masks must be clean and in good condition and replaced when needed. Tubing and masks must only be used for the person the oxygen was prescribed for.

Staff have to be trained and deemed competent to manage home oxygen therapy.

As with all medications, oxygen cylinders have an expiry date. The expiry date has to be checked to ensure that out-of-date cylinders are not used.

If equipment is no longer in use or it is out of date, it should be returned to the oxygen supplier.

Medicines optimisation

The term medicines optimisation is generally used to encompass a more people-centred approach to the use of medicine as part of a person's care (NICE, 2015). It is essential that patients get the best quality outcomes from medicines: medicines play an important role in maintaining health, preventing illness, managing chronic conditions and curing disease – all against a backdrop of significant economic, demographic and technological change. There is evidence to suggest that there is an urgent need to get the essentials of medicines use right. Medicines use is too often sub-optimal and a step change is needed in the way that all health-care professionals offer support to patients in order to get the best possible outcomes from their medicines (Royal Pharmaceutical Society, 2013).

Medicines optimisation is concerned with ensuring that the right patients get the right choice of medicine, at the right time. When healthcare providers focus on patients and their experiences, there is much potential to help patients improve their outcomes, take their medicines correctly, avoid taking unnecessary medicines, reduce wastage of medicines and improve medicines safety. Medicines optimisation can help to encourage patients to take ownership of their treatment. In order to ensure medicines optimisation reaches its full potential, this requires a multidisciplinary team working approach. Healthcare professionals work together to individualise care, monitor outcomes, review medicines and support patients when needed.

Medicines management is different to medicines optimisation in a number of ways; most importantly it focuses on outcomes and patients as opposed to process and systems. Focusing on improved outcomes can help to ensure that patients and the NHS get better value from their investment in medicines. Medicines optimisation considers how it is that patients use medicines over time. This can involve stopping some medicines as well as starting others and utilising opportunities that may arise for lifestyle changes and nonmedical therapies to reduce the need for medicines.

Patient beliefs and medicines

Patients' beliefs and preferences about medication prescribing may affect medication adherence. Clyne et al. (2017) point out that patients' beliefs about treatment are a critical influence on prescription medication use. Patients may influence prescribing decisions on the basis of their expectations or, in some cases, their unwillingness to take medicines. Patients' strong beliefs in medicines, their expectations and resistance to change are cited as important barriers to prescribing.

Bearing in mind the important role that beliefs can play in medication use, it is important for the nurse to acknowledge this and to explore the beliefs of patients. Non-adherence can result in morbidity and mortality, unnecessary health costs, unnecessary investigations and changes in treatment regimens. Neame and Hammond (2005) conclude that people with strong beliefs in the necessity of taking medication to maintain their health were found to be more adherent to treatment, and those with higher levels of concern about medication, commonly about the dangers of dependence and long-term side effects, were more likely to be non-adherent.

A Scandinavian study (Mårdby et al., 2009) considered beliefs, not of patients but of doctors and nurses in an outpatient setting; their aim was to explore general beliefs about medicines among doctors and nurses. They concluded that nurses saw medicines as more harmful and less beneficial than did doctors. The profession's different beliefs about medicines are important factors for adherence to medicines, just as patients' beliefs are.

There are many reasons for non-adherence and one reason may lie between the expectations of health professionals and the behaviour of patients where there is a failure to recognise that the views and expectations of patients are key factors associated with medicine taking. Patients' beliefs and goals must be at the centre of decision-making about their medicines, so the process of selecting and providing care has to be one of partnership and negotiation between the patient and health professionals.

Patients are invited to make informed decisions about all aspects of their care, and this comes with support from health professionals. In order to make an informed decision, then, these decisions have to be well informed. Health professionals are required to provide information that is appropriate and that fits with the patient's health beliefs, they are also required to offer that information in such a way that it is understandable to each individual. The RPS (2016) provides a framework for reaching a shared decision (see Box 1.1.)

It can be hard to decide how much information to give a patient; for example, which side effects to mention, where to obtain specialised information, as well as where the boundary of

Box 1.1 Reaching a shared decision

- Work with the patient and, if appropriate, carer in partnership to make informed choices, agreeing a plan that respects patient preferences, including their right to refuse or limit their treatment.
- Identify and respect the patient with regards to diversity, values, beliefs and expectations regarding their health and treatment with medicines.
- Routinely assess adherence in a non-judgmental way and understand the different reasons that non-adherence may occur (this may be intentional or non-intentional) and how best to offer support.
- Build a therapeutic relationship with the patient that encourages two-way effective communication.
- With the patient and carer, explore satisfactory outcomes for the patient/carer.

Source: Adapted RPS (2016)

responsibility lies between the health professional and the patient. Chapter 3 of this book addresses some of the ethical and legal issues that are associated with medicines management and pharmacology.

Concordance, adherence and compliance are terms that reflect fundamentally different approaches to care. When applied in its strict scientific definition, compliance is a useful term; however, it can also infer 'nurse or doctor knows best' and may be interpreted as condescending whereby patients do as they are told or advised. Compliance describes a patient's behaviour and concordance implies a process. It is appropriate, therefore, to refer to non-compliant patients, but not to non-concordant patients. The relationship between the patient and the health professional is non-concordant, not the patient. NICE (2009) have determined that adherence presumes an agreement between the prescriber and patient about the prescriber's recommendations. Adherence to medicines is defined as the extent to which the patient's action matches the agreed recommendations. When there is non-adherence, this has the potential to limit the benefits of medicines resulting in a lack of improvement, or a deterioration in health and wellbeing. The economic costs, suggest NICE (2009), are not only limited to wasted medicines but will also include the knock-on costs that arise from increased demands for healthcare if the person's health deteriorates.

Honouring individual choices and beliefs are the hallmarks of professional healthcare providers (NMC, 2018a). Being aware of the individual's values, acceptance of these values and asking or seeking clarification are essential if the person is to be respected. This can also have a positive impact on medicine adherence.

Clinical considerations

Medicines management

In the UK, one in four adults experience mental health problems in their lifetime, with one in six experiencing a diagnosable mental health problem in any one year (Mental Health Foundation, 2016). People with mental health problems may die prematurely; the life expectancy of someone with bipolar disorder or schizophrenia is 15–20 years less than the general population (Hjorthø et al., 2017). Often this is because their physical health suffers due to the fact that they are unable to cope and deal with their long-term condition in a regular and coherent way. The main risks that are specific to those with mental health conditions in terms of premature death include diabetes, obesity, hypertension, lack of exercise and smoking. It is estimated that one in three of the 100 000 people who die avoidably each year in England has a mental illness (Royal Pharmaceutical Society, 2018b).

Many of the medicines that are used to treat mental health problems are also associated with health risks. Pharmacists are experts in medicines and their use and can ensure that people get the best outcomes from their medicines, help to reduce adverse events, minimise any avoidable harm and unplanned admissions to hospital, while also ensuring that resources are used in an efficient way to deliver the standard and level of care that those with mental health conditions deserve. A multidisciplinary approach to medicines optimisation is advocated.

Discussing with patients their experiences of medicines use – for example, their views about what medicines mean to them, how medicines impact on their daily life, whether or not they are able to take their medicines – is a prerequisite that is demonstrated when promoting medicine optimisation.

Conclusion

Medicines are used more than any other intervention by patients as they strive to manage their medical conditions. The number of medicines prescribed, as well as the complexity of the medicines regimens that patients take, are and will continue to increase.

Nurses are involved in the management of medicines in almost every practice setting. Medicines management includes the safe and cost-effective use of medicines in clinical practice, with greatest patient benefits, while at the same time minimising potential harm. It is essential that nurses have knowledge of the regulatory, professional, and legal and ethical frameworks that oversee the prescribing, storage, administration, and safe disposal of drugs and ensure they comply with them. The nurse must have a sound understanding of the wider field of therapeutic pharmacology, a key aspect of clinical practice aiming to provide safe and effective care through a sound understanding of how the use of drugs cause action and effect.

Glossary

Autonomy	Is concerned with self-determination and is a person's ability to make choices on the basis of that person's own preferences, beliefs and values.
Capacity	An ability to understand, deliberate and communicate a choice in relation to a specific healthcare decision at a particular time.
Competence	The achievement and application of knowledge, intellectual capacities, practice skills, integrity, and professional and ethical values needed for safe, accountable, compassionate, and effective practice as a registered practitioner.
Compliance	Medication compliance refers to the degree or extent of conformity to the recommendations about day-to-day treatment by the healthcare provider with regards to timing, dosage and frequency.
Conduct	A person's moral practices, actions, beliefs and standards of behaviour.
Evidence-based practice	The conscious consideration and the application of the best available evidence along with the healthcare provider's expertise and a person's values and preferences in making healthcare decisions.
Guidance	A principle or criterion that guides or directs action. Guideline development emphasises using clear evidence from the existing literature, as opposed to expert opinion alone, as the basis for advisor materials.
Health and wellbeing	A state of complete physical, social and mental wellbeing; not just the absence of disease or infirmity. It is a positive concept that emphasises personal resources as well as physical capabilities.
Regulations	A rule or law designed to control or govern conduct.
Standards	Authoritative statements developed, monitored and enforced by, for example, healthcare regulators to describe the responsibilities and conduct expected of registrants. The standards are based on the principles and that underpin professional practice.
Therapeutic	Relating to therapeutics, the branch of medicine concerned specifically with the treatment of disease. The therapeutic dose of a drug is the amount needed to treat a disease.

References

Ballantyne, H. (2015). Developing nursing care plans. *Nursing Standard* **30** (26): 51–57.

Care Quality Commission (2018). Learning from safety incidents. https://www.cqc.org.uk/guidance-providers/learning-safety-incidents (accessed September 2020).

Clyne, B., Cooper, J.A., Boland, F. et al. (2017). Beliefs about prescribed medication among older patients with polypharmacy: a mixed methods study in primary care. https://bjgp.org/content/67/660/e507 (accessed September 2020).

Higher Education England (2017). Advisory guidance. administration of medicines by nursing associates. https://www.hee.nhs.uk/sites/default/files/documents/Advisory%20guidance%20-%20administration%20of%20medicines%20by%20nursing%20associates.pdf (accessed September 2020).

Hjorthøj, C., Stürup, A.E., McGrath, J.J. et al. (2017). Years of potential life lost and life expectancy in schizophrenia: a systematic review and meta-analysis. *Lancet Psychiatry* **4** (4): 295–301.

Mårdby, A., Åkerlind, I., and Hedenrud, T. (2009). General beliefs about medicines among doctors and nurses in out-patient care: a cross-sectional study. *BMC Family Practice* **18** (10): 35. doi: 10.1186/1471-2296-10-35.

Mental Health Foundation (2016). Fundamental health facts about mental health 2016. https://www.mentalhealth.org.uk/sites/default/files/fundamental-facts-about-mental-health-2016.pdf (accessed September 2020).

National Institute for Health and Care Excellence (2014). Managing medicines in care homes. https://www.nice.org.uk/guidance/sc1/evidence/full-guideline-pdf-2301173677 (accessed September 2020).

National Institute for Health and Care Excellence (2015). Medicines optimisation: the safe and effective use of medicines to enable the best possible outcomes. www.nice.org.uk/guidance/ng5/resources/medicines-optimisation-the-safe-and-effective-use-of-medicines-to-enable-the-best-possible-outcomes-pdf-51041805253 (accessed September 2020).

National Institute for Health and Care Excellence (2017). Managing medicines for adults receiving social care in the community. www.nice.org.uk/guidance/ng67 (accessed September 2020).

Neame, R. and Hammond, A. (2005). Beliefs about medications: a questionnaire survey of people with rheumatoid arthritis. *Rheumatology* **44** (6): 762–767.

Nursing and Midwifery Council (2010). Standards for medicines management. https://www.nmc.org.uk/standards/standards-for-post-registration/standards-for-medicines-management/ (accessed September 2020).

Nursing and Midwifery Council (2017). Revalidation. https://www.nmc.org.uk/globalassets/sitedocuments/revalidation/how-to-revalidate-booklet.pdf (accessed September 2020).

Nursing and Midwifery Council (2018a). The Code: Professional standards of practice and behaviour for nurses, midwives and nursing associates. https://www.nmc.org.uk/standards/code/ (accessed September 2020).

Nursing and Midwifery Council (2018b). Standards of proficiency for registered nurses. https://www.nmc.org.uk/globalassets/sitedocuments/education-standards/future-nurse-proficiencies.pdf (accessed September 2020).

Nursing and Midwifery Council (2018c). Standards of proficiency for nursing associates. https://www.nmc.org.uk/globalassets/sitedocuments/education-standards/nursing-associates-proficiency-standards.pdf (accessed September 2020).

Royal College of Nursing and Royal Pharmaceutical Society (2019). *Guidance on the Administration of Medicines in Healthcare Settings*. London: RCN and RPS.

Royal Pharmaceutical Society (2013). Medicines optimisation: helping patients to make the most of medicines. good practice guidance for healthcare professionals in England. https://www.rpharms.com/Portals/0/RPS%20document%20library/Open%20access/Policy/helping-patients-make-the-most-of-their-medicines.pdf (accessed September 2020).

Royal Pharmaceutical Society (2016). A competency framework for all prescribers. https://www.rpharms.com/Portals/0/RPS%20document%20library/Open%20access/Professional%20standards/Prescribing%20competency%20framework/prescribing-competency-framework.pdf (accessed September 2020).

Royal Pharmaceutical Society (2018a). Professional guidance on the safe and secure handling of medicines. https://www.rpharms.com/recognition/setting-professional-standards/safe-and-secure-handling-of-medicines/professional-guidance-on-the-safe-and-secure-handling-of-medicines (accessed September 2020).

Royal Pharmaceutical Society (2018b). Utilising pharmacists to improve the care for people with mental health problems. https://www.rpharms.com/Portals/0/RPS%20document%20library/Open%20access/Policy/RPS%20England%20mental%20health%20policy%202018.pdf (accessed September 2020).

Stonehouse, D. (2017). Understanding the nursing process. *British Journal of Healthcare Assistants* **11** (8): 388–391.

Further reading

British Pharmacological Society
www.bps.ac.uk
The BPS exists to promote and advance pharmacology in all its forms.

Royal Pharmaceutical Society
www.rpharms.com
The RPS gives pharmacy a clear, strong voice in all healthcare discussions and decisions across Britain. They also publish the British National Formulary.

The Nursing and Midwifery Council
www.nmc.org.uk
Better and safer care for people is at the heart of what the NMC does, supporting the healthcare professionals on their register to deliver the highest standards of care.

Multiple choice questions

1. What are the five phases of the nursing process:
   - **(a)** Assess, diagnose, plan, implement, evaluate
   - **(b)** Assess, diagnose, predict, implement, evaluate
   - **(c)** Assess, diagnose, plan, implement, identify
   - **(d)** Assess, detect, plan, implement, evaluate
2. Assessment requires the nurse to:
   - **(a)** Observe the environment, undertake a clinical examination, gather data and communicate
   - **(b)** Consult the BNF, observe the patient, perform a clinical examination, gather data
   - **(c)** Observe the patient, perform a clinical examination, gather data and communicate
   - **(d)** Use the skills of observation, calculate risk, perform a clinical examination, gather data and communicate
3. The role of the NMC is to:
   - **(a)** Regulate hospitals or other healthcare settings
   - **(b)** Regulate healthcare assistants
   - **(c)** Regulate nurses and midwives
   - **(d)** Regulate nurses, midwives and pharmacists
4. How many key clauses are there in the NMC's Code:
   - **(a)** 22
   - **(b)** 24
   - **(c)** 25
   - **(d)** 23
5. The registered nurse is required to:
   - **(a)** Act in the patient's best interests
   - **(b)** Undertake accurate drug calculations for a variety of medications
   - **(c)** Uphold the values of the profession
   - **(d)** All of the above
6. What might be the benefits of medications self-administered by the patient:
   - **(a)** Staff have more time for other duties
   - **(b)** The patient gains more control
   - **(c)** There is reduction in the number of medication errors
   - **(d)** There is less risk of infection
7. Medicine management standards provide healthcare workers with:
   - **(a)** Legal protection
   - **(b)** An ability to opt out of medicines administration
   - **(c)** A framework for safe practice in medicines management
   - **(d)** The opportunity to prescribe controlled drugs

8. Oxygen is:
   - (a) Safe to use in any circumstance and does not require a prescription
   - (b) A medical gas and has no side effects
   - (c) A medical gas and as such should be treated as a medicine
   - (d) Only used in high-dependency units and never in a patient's home
9. In order to maintain people's safety, staff have to:
   - (a) Have passed an in-house course concerning competence
   - (b) Have the appropriate qualifications, competence, skills and experience to maintain people's safety
   - (c) Be registered with a regulatory body
   - (d) Be skilled in CPR
10. Medicines management is different to medicines optimisation as it:
   - (a) Focuses on outcomes and patients rather than process and systems
   - (b) Focuses on patients and families as opposed to just the patient
   - (c) Is governed by the health or social care regulator
   - (d) It only applies in community settings
11. In order to enable a shared decision about treatment:
   - (a) The healthcare provider's values and beliefs are key
   - (b) Patients' beliefs and preferences about medicines must be understood
   - (c) The professional regulator's Code has to be paramount
   - (d) The patient must sign a consent form
12. The safe use of medicines is the responsibility of:
   - (a) The pharmacist
   - (b) The patient
   - (c) The registered practitioner
   - (d) All of the above
13. The terms 'non-compliance' or 'non-adherence' have been criticised for:
   - (a) Being sexist
   - (b) Suggesting an unequal, paternalistic relationship between health professionals prescribing medication and their patients
   - (c) Suggesting an equal, relationship between health professionals prescribing medication and their patients
   - (d) Failing to address the age of the patient
14. A therapeutic relationship is:
   - (a) A helping relationship based on mutual trust and respect
   - (b) A healing relationship
   - (c) A curative relationship based on the use of medicines
   - (d) None of the above
15. The four core governing principles concerning the safe and secure handling of medicines (Royal Pharmaceutical Society) are:
   - (a) Assess, implement, improve, assure
   - (b) Establish assurance arrangements, ensure capacity and capability, seek assurance, continually improve
   - (c) Establish insurance, ensure capacity and capability, seek assurance, continually improve
   - (d) Establish assurance arrangements, ensure asepsis, seek assurance, continually improve
   - (e) Establish assurance arrangements, ensure capacity and capability, seek validation, continually improve