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Acute and Ongoing Care

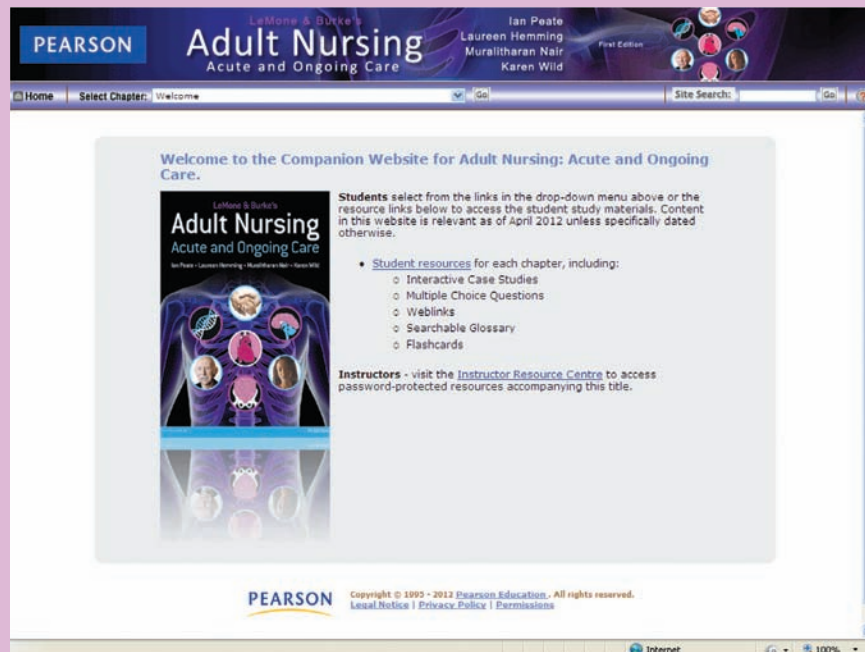
Ian Peate • Muralitharan Nair • Lauren Hemming • Karen Wild



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Adult Nursing

Acute and Ongoing Care

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Preface

Nursing is changing: career pathways for nurses are opening up into domains hitherto forbidden, the way care is being delivered is being transformed; there is an ageing population and, as such, your knowledge and skills will be in great demand to meet healthcare needs well into the future. This book has been written to help you build those skills. The book also contains the help you need to ensure that you meet the competencies demanded by the Nursing and Midwifery Council (NMC) to enable you to register as a nurse. On registration as a nurse, you will have the privilege to care for the public. As well as this, you must also work within the confines of the Code of Professional Practice (NMC 2008).

In order to register with the NMC to practise as a nurse, students have to follow and complete an education programme that meets the NMC's standards set out for pre-registration nursing education. The standards lay out what must be achieved when the student is at the point of registration. It takes at least three years to become a nurse in the UK.

Nurse education is based in universities, and is delivered in direct partnership with NHS Trusts and other organisations such as the private and independent and voluntary sectors that provide practice learning opportunities for nursing students.

Fifty per cent of the education programme is spent in practice, with the aim of ensuring that students can learn how to provide direct nursing care. The other half of the programme is spent learning about the knowledge and technical abilities required to underpin and support practice.

Some nursing students currently complete their education with at least a Diploma in Higher Education – the equivalent of two-thirds of a degree. This is changing.

Nursing in the 21st century

The challenges facing nurses and nursing in the 21st century are much more complex than they have hitherto been, and the way healthcare is delivered is changing. The depth of knowledge and level of skill people will expect nurses to have will have to change to meet these challenges.

In the future, nurses will have to practise differently. Adult and children's nurses will have to have the knowledge and skills needed to meet the needs of people with

mental health problems, and mental health and learning disability nurses will need to be able to demonstrate that they are better able to care for people with complex physical needs.

To meet these challenges and to seize new opportunities, nurse education programmes will have to demonstrate that nurses, when they graduate in their field of practice, are in possession of the high-level skills essential to care safely and effectively for people in their particular field, as well as possessing the knowledge and range of skills required to deliver essential care to others in alternative settings.

Nursing students will continue to learn in hospitals and residential care settings and increasingly in the wider community where care ranging from fundamental to highly complex is being delivered more often.

Nursing education in the 21st century

For a student to complete their programmes of study successfully, they will have to demonstrate knowledge and competence in practice at degree level, justifying their actions based on sound evidence.

Learning to be a nurse of the future requires that you have the specialised skills to care for specific groups of people, as well as having the knowledge and skills essential in providing the fundamental aspects of care to all patient groups. The NMC have decided that, in future, nurse education programmes will have a blend of generic learning and learning which is specific to the student's chosen specialism (field), with the proportion of field-specific learning growing as the programme progresses.

Both generic and field-specific aspects of the programme will be combined, providing the opportunity to develop shared learning between fields. Opportunities will also be made available for shared learning with members of other healthcare professions. This approach provides students with a chance to meet the required generic and field competencies in a wide range of settings, in all places where nurses provide care.

To meet the new competencies set by the NMC and, in effect, to register as a nurse, a student must demonstrate competence in specific skills (NMC 2010a). These specific skills are included in the essential skills clusters (ESCs) and they have to be met at various points in the programme.

The new programmes

New programmes will still be at least three years' long, with half the time spent learning how to give direct care in practice settings. There will be two progression points as opposed to the current one. Progression points will usually separate the programme into three equal parts; each part will have specific criteria that must be met prior to the student progressing from one part of the programme to the next.

Competencies that have to be achieved for progression point 1 are associated with achieving the criteria related to the fundamental aspects of care and safety, as well as demonstrating professional behaviours expected of a nursing student (NMC 2010b). Learning outcomes for progression point 2 will enable the student to demonstrate an ability to work in a more independent and confident way.

Minimum academic level

The NMC made a decision in October 2008 that the minimum academic level for pre-registration nursing education would be degree. There will only be degree-level pre-registration nursing programmes offered in the UK from September 2013.

The NMC's decision was based on a number of factors, including the need to prepare nurses to have critical thinking skills in the increasingly diverse and complex arena of healthcare delivery. Raising the minimum level of nursing education to degree level will bring the UK in line with other countries as well with other healthcare professions. This might help to encourage more interprofessional learning across pre-registration programmes.

Nursing students are expected to build on knowledge of basic sciences, social sciences and the fundamentals of nursing to synthesise and critically analyse new skills necessary to ensure clinical competence. Our text provides you with the knowledge and skills you need to care for adult patients to promote health, facilitate recovery from illness and injury, and provide support when coping with disability or loss.

Throughout the text, we make every effort to communicate that both nurses and adult patients may be male or female; and that patients require holistic, individualised care regardless of their age or racial, cultural or socio-economic background.

Our goal: helping you achieve clinical competence by building on your skills

Our focus in writing this book is to offer you the knowledge that provides a base for clinical judgement and that can be applied to provide safe, individualised and competent

clinical nursing care. Our easily understood, straightforward style will help you integrate concepts in pathophysiology, pharmacology and interdisciplinary healthcare interventions into prioritised nursing care. We have developed multiple learning strategies to help you succeed, including boxes, tables, special features and illustrations, as well as synthesis and critical thinking exercises, so you can build your skills for class and for clinical practice.

We believe that students learn best within a nursing model of care with consistent organisation and understandable text.

This textbook:

- maintains a strong focus on nursing care as the essential element in learning and doing nursing, regardless of the age of the patient or the setting for care;
- provides a proper balance of physiology, pathophysiology, pharmacology and interdisciplinary care on which to base safe, competent and individualised nursing care;
- emphasises the nurse's role as an essential member of the interdisciplinary healthcare team;
- uses functional health patterns and the nursing process as the structure for providing nursing care in today's world by prioritising nursing diagnoses and interventions specific to altered responses to illness;
- fosters critical thinking and decision-making skills as the basis for nursing excellence in clinical practice;
- continues to believe that the person receiving care has not only a personal experience with health and illness, but is also an active participant in maintaining and/or regaining health.

Organisation

The book is organised into 17 chapters. Each part opens with an introduction setting the scene. A comprehensive review of anatomy and physiology is provided related to the chapter content, drawing upon the student's prerequisite knowledge and reinforcing basic principles of anatomy and physiology as applied to physical assessment.

Each chapter provides case studies related to the chapter with the intention of contextualising and reinforcing learning. The chapters follow a consistent format and include the following components:

- *Pathophysiology.* The discussion of each major illness or condition begins with incidence and prevalence with an overview of pathophysiology, followed by manifestations and complications. The use of pathophysiology illustrated art brings physiological processes to life.

- *Interdisciplinary care.* This considers treatment of the illness or condition by the healthcare team. The section includes information about specific tests necessary for diagnosis, medications, surgery and treatments, fluid management, dietary management and complementary and alternative therapies.
- *Nursing care.* Because illness prevention is critical in health-care today, this section provides health promotion information. Nursing care is discussed within a context of priority nursing diagnoses and interventions, with rationales provided for intervention. Boxes that present information essential to care are community care, in practice, practice alerts, fast facts and consider this.

A comment on terminology

There have been a number of moves on the part of government and regulatory bodies to enhance direct community involvement in all types of public services, and several terms are used to ensure this happens when working with people.

A number of terms are used in the health service and in this book to describe the people we care for. Terms you may see in this book will include patient, individual or

person. Some people choose specific terms such as survivor, as in some mental health settings, to describe their relationship with services. Each term has a different emphasis, with overlap; some people identify with one more than another, or use some terms only in particular situations. The terms used can be very powerful in defining relationships and, as such, much thought needs to be given to them.

It is important that in making a selection of terms of address and pronouns the nurse considers the delicate nuances of the options available so that the status of the person is not compromised. When addressing the person individually, best practice would dictate that you ask that person for their preferred title.

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- Nursing and Midwifery Council (2010b) *Guidance on Professional Conduct for Nursing and Midwifery Students*. London, NMC.

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Marvelle Brown has been in the NHS and nurse education for over 30 years. In 1991, she developed the first professionally and academically recognised haematology course in England. She went on to further develop this into both a diploma and degree. She was a member of one of the working groups, which led to the development of the NICE Guidance in Haemato-Oncology. She was chair of the RN Haematology/BMT Forum and is currently chair of the Acute Nurses Forum for Sickle Cell and Thalassaemia. Marvelle was a non-executive director for a North West London Hospital Trust and is currently a non-executive director for Milton Keynes PCT. Marvelle has written a number of articles and chapters on haematology. She is an invited speaker nationally and internationally on a wide number of issues in haematology nursing and is currently completing her PhD.



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Peter Vickers Following a career in teaching, Peter commenced his nursing career in 1980 at the York District Hospital, followed shortly afterwards by studying and working at the Hospital for Sick Children, Great Ormond Street, London. He later obtained his first degree in Biosciences and Health Studies and then obtained a doctorate in his specialty, immunology nursing – for which he has a passion – concentrating on the long-term development of children with SCID in the UK and Germany. He has worked in nurse education for several years, and has recently completed a research study into adult palliative care. The author of books on children's responses to early hospitalisation, and research



methodology/proposals, he has also written chapters for several nursing bioscience and pathophysiology books, as well as presented papers at many national and international conferences. His key areas of interest are all aspects of immunology and immunology nursing, infectious diseases, genetics and research. Although officially retired, he continues to work part-time at the University of Hertfordshire, as well as continuing with his writing and presenting at conferences.

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Karen Burke has practised nursing in direct care and as a nurse educator and administrator. She is currently the Education Consultant for the Oregon State Board of Nursing. In this role, she serves as a consultant to new and existing nursing education programmes in the state. Ms Burke entered nursing with a diploma from Emanuel Hospital School of Nursing in Portland, Oregon, later completing baccalaureate studies at Oregon Health & Science University (OHSU), and a master's degree at the University of Portland. She retired as the Director of Health Occupations at Clatsop Community College in Astoria, Oregon. Ms Burke currently is a member of the steering committee for the Oregon Consortium for Nursing Education, and is actively involved in the Education Committee of the Oregon Nursing Leadership Council. Ms Burke strongly values the nursing profession and the importance of providing a strong education in the art and science of nursing for all students preparing to enter the profession.



Guided tour

Learning outcomes

- Describe, identify and relate the anatomy, physiology and functions of the eye and the ear.
- Explain change processes related to vision and hearing.
- Identify specific topics for consideration during a health history.
- Describe normal variations in assessment findings for the older adult and discuss some of the diagnostic tests.
- Identify abnormal findings indicating impairment of the eye and the ear.
- Describe surgical and other invasive procedures.

Clinical competencies

- Assess vision, hearing and functional health of persons with eye and ear disorders.
- Conduct and document a health history.
- Monitor the results of diagnostic tests reporting abnormal findings.
- Conduct and document physical assessment.
- Implement individualised nursing interventions.

Learning outcomes and **Clinical competencies** outline the topics which will be covered in the chapter for you to track your learning and assess your clinical skills.

Case studies about different patients are introduced at the start of every chapter and revisited throughout the discussion to illustrate practical nursing care in real-world settings. They can be used for your own personal reflection or for group discussion.

CASE STUDIES



Below are three case studies that you may wish to consider before, during or after you have read this chapter. There are no right or wrong answers to these case studies, but you should think about the physical, psychological and social implications. For example, can you identify the major anatomical structures of the lower respiratory tract? You may also want to think about what nursing observations you are familiar with to assess people with respiratory problems.

Case Study 1 – Jim

Jim Hunter, aged 58, was an emergency admission to the medical admissions unit (MAU) with a diagnosis of right lower lobe **pneumonia**. Jim is a cigarette smoker, with a history of acute chest infections (acute **bronchitis**)

Case Study 2 – Gemma

Gemma Watson is a 24-year-old single woman who works as an office cleaner. She is admitted to the medical ward with an acute **asthma** attack.

Case Study 3 – Alan

Alan Hoyle is 74. Living in the North West of Britain, all of his working life was spent in the textile industry and, like many of his peers, he smoked cigarettes from starting employment at the age of 15. Alan has a diagnosis of **chronic obstructive pulmonary disease** (COPD) and has been prescribed a variety of inhalers over the years by his GP. On most occasions he abandons them; in fact, at home he has a drawer full of part and unused medication. Alan is isolated because of his condition and relies on the support of his close neighbours for shopping. His daughter visits a

FAST FACTS



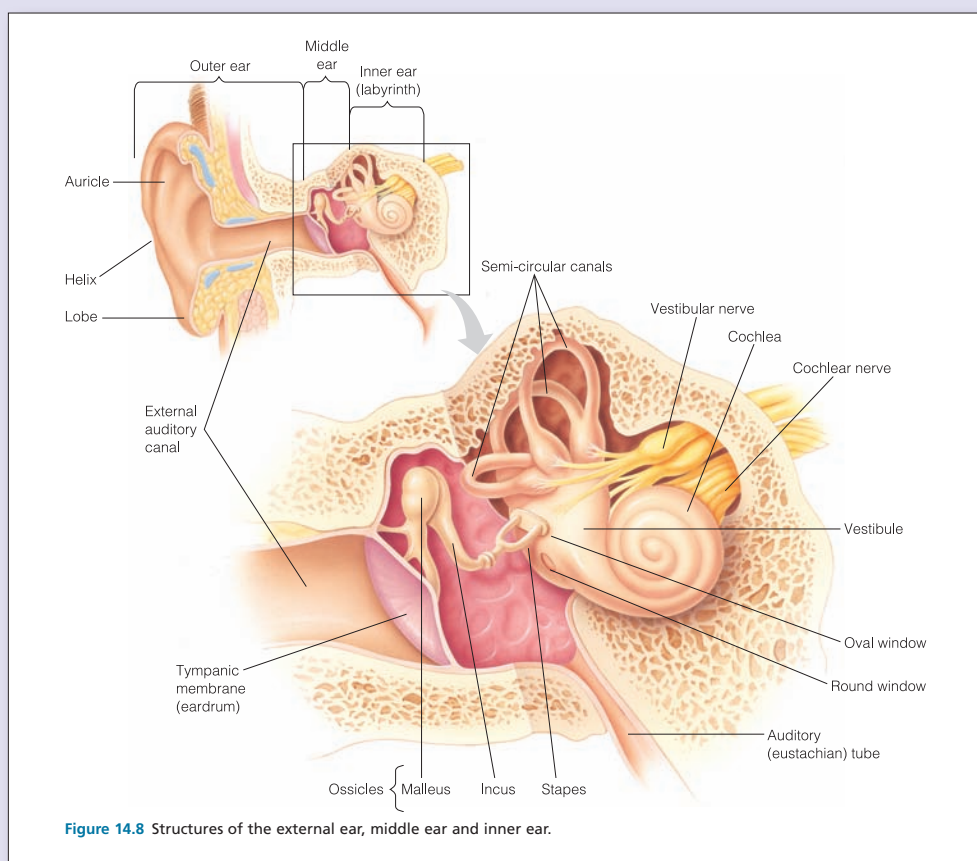
Sudden cardiac death

- 74 000 people in the UK die this way every year
- 74% of SCD happens outside of hospitals
- A bystander giving CPR can triple the chance of survival

Source: Gregory and Quinn 2010.

- 84% of patients in hospital who have a cardiac arrest show signs of deterioration before the arrest.

Fast facts pinpoint key statistics and research and can form the basis for personal reflection or group discussion.



Photos and illustrations bring theory to life, and demonstrate key concepts clearly.

Signs and symptoms of conjunctivitis

Signs and symptoms of conjunctivitis include:

- redness and itching;
- feelings of scratching or burning;
- photophobia may occur;
- tearing and discharge – this may be watery, purulent (pus) or mucoid (mucus), depending on the cause;
- associated signs and symptoms such as sore throat, fever, malaise and swollen lymph nodes near the ears.

Signs and symptoms are listed in clear and straightforward bullet points throughout.

PRACTICE ALERT



- The person in AHF will feel cold and clammy; this is a classical sign.
- Their breathing will be laboured and short of breath, they will have a rapid pulse and a low blood pressure, and they may not be passing urine (oliguria).
- If the skin is pressed, it will blanch and take time to regain its colour, denoting poor peripheral circulation.
- They may also appear 'blue' (cyanotic) because the blood is not being oxygenated sufficiently due to the sluggish circulation.

Practice alerts emphasise pertinent areas of nursing practice where particular care must be taken including, for example, risk assessment, drug administration and infection control.

Consider this . . .

Why might it be better to investigate tuberculosis in a clinic environment as opposed to hospital admission?

Consider this boxes of key points and ideas for you to consider are highlighted in yellow throughout each chapter. They present triggers for reflection, debate and discussion.

IN PRACTICE



Care following post-cardiac catheterisation

- Following cardiac catheterisation, these observations are recorded after the procedure:
 - blood pressure;
 - heart rate and rhythm;
 - respiration rate and pulse oximetry;
 - checking the wound site for seepage of blood;
 - checking the patient's colour, warmth and sensation in the extremities.
- Complications may develop up to several hours after the procedure; therefore, bedrest is recommended for three hours after the procedure if the femoral artery was used and for two hours if the radial artery was the insertion site.
- The person is advised to report if they experience shortness of breath, chest pain or discomfort and bleeding that may occur at the insertion site.
- The person needs to drink plenty of fluids to flush the dye out of their body and only have a light diet to avoid nausea and vomiting.
- If the person having the cardiac catheterisation was on anticoagulant therapy, this may be recommended.
- They are advised to avoid strenuous activity for 24 hours, which may dislodge the clot which has formed over the insertion site, and to have showers rather than hot baths, which would raise their blood pressure and increase peripheral dilatation of the capillaries, which may leave them feeling faint.

Source: Bowden 2009.

In practice boxes give examples of procedures and diagnostic tests with pertinent tips and hints relating to practice.

Community-based care features provide information, recommendations and advice about caring for individuals in a community or home-based setting, including teaching patients self-care practices, and communication skills with patients and with wider multidisciplinary team members.

COMMUNITY-BASED CARE



People with conjunctivitis are usually cared for in the community, reinforcing the need for effective teaching for home care. Emphasise ways to prevent transmission of infection. If unable to administer eye medications, involve the family in teaching. Include:

- Safety and medical asepsis when cleansing the eye
- Instillation of prescribed eyedrops and ointments
- Comfort measures such as reducing lighting intensity and wearing sunglasses

CHAPTER HIGHLIGHTS



- Hormones regulate growth, development and metabolism. Homeostasis is dependent on a balanced level of each type of hormone. Not only do hormones affect organ function, they interact and, when excesses or deficits occur, signs and symptoms are manifested.
- Thyroid disorders are the most common endocrine disorders. Occurring mainly among women, these diseases change body image and impose upsets to energy levels creating fatigue and exhaustion.
- Diabetes mellitus (DM) is a chronic and progressive illness affecting people of all age groups. There are 1.8 million people in the UK with diagnosed diabetes, and this figure is increasing every year. The estimated cost to the NHS is £5 million per day for treatment. With an ageing population, the number of males and females with diagnosed diabetes is projected to rise by 37% for males and 24% for females by 2023.
- Type 2 DM has a hereditary link and is characterised by obesity and sedentary lifestyles. Unlike type 1 DM, in which the onset is often sudden, the development of symptoms that bring persons to their healthcare providers for evaluation is slow.
- Tighter, more intensive blood glucose control is increasingly the focus of care for hospitalised persons with hyperglycaemia.
- Treatment for persons with DM includes insulin, non-insulin hypoglycaemics and blood glucose monitoring devices. Nurses must be familiar with these products and help persons become proficient in their use.

Chapter highlights summarise the main ideas discussed in each chapter. Ideal for quick reference and revision.

Test yourself questions appear at the end of each chapter to assess your learning and help with revision.

TEST YOURSELF



- What component of the brain protects it from harmful substances?
 - the circulation of cerebrospinal fluid
 - the large oxygen demand
 - the structure of neurones
 - the blood-brain barrier
- What pathophysiology results from damage to the lower motor neurones?
 - loss of cognitive ability
 - inability to communicate verbally
 - loss of reflexes
 - decreasing levels of consciousness
- Which of the following statements about cerebrospinal fluid (CSF) is true?
 - the circulation of cerebrospinal fluid
 - the large oxygen demand
 - the structure of neurones
 - the blood-brain barrier
- Your body responses to stress are caused by which division of the autonomic nervous system?
 - sympathetic
 - parasympathetic
 - cholinergic
 - adrenergic
- Which position best describes decorticate posturing?
 - neck extended, arms extended and pronated, feet plantar flexed
 - arms close to sides, elbows and wrists flexed, legs extended
 - in prone position with arms and knees sharply flexed
 - in supine position, spine extended, legs extended
- Which of the following pathophysiological events

Further resources

British Obesity Surgery Person Association (BOSPA)
www.bospa.org

BOSPA has information on many types of weight-loss surgery. We think that you will find this website useful as it provides information on different types of surgery for obese people, information on support groups and patients' experiences after the surgery.

National Institute for Health and Clinical Excellence (NICE)

<http://guidance.nice.org.uk/CG43/Guidance/Section>

This link provides you with information on obesity from NICE. We think it is useful website for all nursing students and qualified nurses. As you are aware, obesity in the UK is alarmingly high and even in children this is a big problem. The government is committed to reducing obesity in children and adults as it has an impact on health and public resources.

NICE

<http://guidance.nice.org.uk/CSGCC>

This link provides information on NICE guidance on improving

BUPA

<http://www.bupa.co.uk/health-information/directory/s/stomach-cancer>

This is a BUPA website. It has useful information about stomach cancer. We think that you will find this link very useful as it gives an overview of the causes, signs and symptoms, treatment and some preventative measures for stomach cancer. They also give a link to other websites which deal with cancer and references for journal articles which deal with cancer.

Cancer Research UK

<http://cancerhelp.cancerresearchuk.org/type/bowel-cancer/>

We think that this website gives some insight into colorectal cancer. The information on this website should give you some insight into colorectal cancer. They also provide some useful journal links on colorectal cancer. This site may be useful for your studies.

Department of Health (DoH)

<http://www.dh.gov.uk/en/PublicHealth/Obesity/index.htm>

This is a Department of Health website on obesity. Here you will find the latest Health Survey for England (HSE). It is alarming to find that

Further resources provide guidance towards additional print and electronic materials to promote further study and research.

Glossary

accommodation the process by which the eyes focus

acquired immunity immunity acquired by coming into contact with infectious micro-organisms

acute coronary syndrome (ACS) an umbrella term for a group of conditions that result in coronary artery disease

acute illness describes an illness with a sudden/rapid onset which is severe in nature

acute respiratory distress syndrome (ARDS) severe difficulty in getting adequate oxygenation despite significant effort to breathe

acute wound a wound that is new or relatively new in injury and occurs suddenly

afterload the force required by the ventricles when they

atelectasis the failure of part of the lung to expand

atherosclerosis a progressive disease characterised by atheroma (plaque) formation, which affects the intimal and medial layers of large and mid-sized arteries

aura a symptom experienced before a migraine or seizure e.g. flashing lights

autoimmunity an abnormal immune response to the body's own cells, which act as self-antigens

autosome a non-sex chromosome

azotaemia an elevation of blood urea nitrogen

bacterial vaginosis a common cause of vaginal discharge

benign prostatic hyperplasia (BPH) an overgrowth of cells in the prostate gland

A **Glossary** of key terms and definitions, highlighted in the text, is included at the end of the book for quick reference.

The image displays two screenshots of the Pearson Adult Nursing website. The left screenshot shows the 'Case Study' section for Chapter 1, 'The role and function of the nurse in health and illness'. It includes a case study about William, a 19-year-old who traveled to India, and a question: 'What is it that particularly attracts you to the role of the nurse?'. The right screenshot shows the 'Multiple choice questions' section for the same chapter, with three questions about Florence Nightingale and the 'Angel of Mercy'.

Electronic resources are available online at www.pearsoned.co.uk/lemone including Interactive Case Studies, Multiple Choice Questions and Flashcards to measure learning and understanding as you progress through the book.

List of acronyms

ABGs	arterial blood gases	CAPD	continuous ambulatory peritoneal dialysis
ABPI	ankle brachial pressure index	CBE	clinical breast examination
ABR	auditory brainstem response	CBF	cerebral blood flow
ACE	angiotensin-converting enzyme	CH	cluster headache
ACh	acetylcholine	CHD	coronary heart disease
ACS	acute coronary syndrome	CHF	chronic heart failure
ACTH	adrenocorticotrophic hormone	CIN	cervical intraepithelial neoplasia
AD	Alzheimer's disease	CIS	carcinoma in situ
ADCH	adrenocorticotrophic hormone	CKD	chronic kidney disease
ADH	antidiuretic hormone	CLL	chronic lymphoblastic leukaemia
AEDs	antiepileptic drugs	CML	chronic myeloid leukaemia
AEP	auditory evoked potential	CMV	cytomegalovirus
AER	auditory evoked response	CNS	clinical nurse specialist
AFP	alpha-fetoprotein	CO	cardiac output
AHA	alpha-hydroxy acid	COPD	chronic obstructive pulmonary disease
AHF	acute heart failure	CPAP	continuous positive airway pressure
AIHA	autoimmune haemolytic anaemia	CPP	cerebral perfusion pressure
AKI	acute kidney injury	CPR	cardiopulmonary resuscitation
ALL	acute lymphoblastic leukaemia	CRF	chronic renal failure
ALs	activities of living	CRH	corticotropin-releasing hormone
AML	acute myeloid leukaemia	CRP	C reactive protein
ANS	autonomic nervous system	CSF	cerebrospinal fluid
APC	antigen-presenting cells	CT	computed tomography
APTT	activated partial thromboplastin time	CTA	CT angiography
ARDS	acute respiratory distress syndrome	CVAD	central vascular access device
ARF	acute renal failure	CVC	central venous catheter
ATN	acute tubular necrosis	CVD	cardiovascular disease
AV	atrioventricular	CVID	common variable immunodeficiency
AVM	arteriovenous malformations	CVP	central venous pressure
BALT	bronchial-associated lymphoid tissue	DBS	deep-brain stimulation
BASHH	British Association for Sexual Health and HIV	DCT	distal convoluted tubule
BEN	benign ethnic neutropenia	DES	diethylstilbesterol
BIH	benign intracranial hypertension	DEXA	dual energy x-ray absorptiometry
BiPAP	bi-level positive airway pressure	DFA	direct fluorescent antibody
BJPs	Bence Jones proteins	DHT	dihydrotestosterone
BLS	basic life support	DI	diabetes insipidus
BMI	body mass index	DIC	disseminated intravascular coagulation
BMT	bone marrow transplant	DKA	diabetic ketoacidosis
BNP	brain natriuretic peptide	DM	diabetes mellitus
BPH	benign prostate hyperplasia	DMARDs	disease modifying antirheumatic drugs
BSE	breast self-examination	DNA	deoxyribonucleic acid
BTM	beta thalassaemia major	DNR	do not resuscitate
BTS	British Thoracic Society	DoH	Department of Health
BUN	blood urea nitrogen	DOT	directly observed therapy
CABG	coronary artery bypass graft	DRE	digital rectal examination
CAD	coronary artery disease	DSS	Durie–Salmon staging system
CAD	continuous analgesia delivery	DTR	deep tendon reflexes

DUB	dysfunctional uterine bleeding	HLA	human leukocyte antigen
DVT	deep vein thrombosis	HPA	Health Protection Agency
ECF	extracellular fluid	HPLC	high-performance liquid chromatography
ECG	electrocardiogram	HPV	human papillomavirus
EBCT	electron beam computed tomography	HR	heart rate
ED	erectile dysfunction	HRT	hormone replacement therapy
EDH	extradural haematoma	HSE	Health Survey for England
EEG	electroencephalogram	HSV	herpes simplex virus
ELISA	enzyme-linked immunosorbent assay	HU	hydroxyurea
EMG	electromyogram	IBD	inflammatory bowel disease
EPUAP	European Pressure Ulcer Advisory Panel	IBS	irritable bowel syndrome
ERV	expiratory reserve volume	ICF	intracellular fluid
ESR	erythrocyte sedimentation rate	ICH	intracerebral haematoma
ESRD	end-stage renal disease	ICP	intracranial pressure
ESWL	extracorporeal shock wave lithotripsy	ICP	integrated care pathway
Fab	fragment antigen-binding	ICU	intensive care unit
FBC	full blood count	IDA	iron deficiency anaemia
Fc	fragment crystallisable	IF	intrinsic factor
FCC	fibrocystic changes	Ig	immunoglobulin
FDPs	fibrin degradation products	IICP	increased intracranial pressure
FES	fat embolism syndrome	IM	intramuscular
FEV1	forced expiratory volume in 1 second	INR	International Normalised Ratio
FFP	fresh frozen plasma	IPSS	International Prognostic Scoring System
FIGO	International Federation of Gynecology and Obstetrics	IRV	inspiratory reserve volume
fMRI	functional MRI	ISS	International Staging System
FRC	functional residual capacity	ITP	idiopathic thrombocytopenic purpura
FSH	follicle-stimulating hormone	IUD	intrauterine device
FTA-ABS	fluorescent treponemal antibody absorption	IV	intravenous
FVC	forced vital capacity	LABA	long-acting beta2 agonist
FVD	fluid volume deficit	LAVH	laparoscopy-assisted vaginal hysterectomy
FVE	fluid volume excess	LCP	Liverpool Care Pathway
GABA	gamma aminobutyric acid	LCR	ligase chain reaction
GALT	gut-associated lymphoid tissues	LDH	serum lactic acid dehydrogenase
GCS	Glasgow Coma Scale	LDL	low-density lipoprotein
GDC	Guglielmi detachable coil	LEEP	loop electrosurgical excision procedure
GFR	glomerular filtration rate	LEETZ	loop electrosurgical excision of transformation zone
GH	growth hormone	LH	luteinising hormone
GHRH	growth hormone-releasing hormone	LHRH	luteinising hormone-releasing hormone
GnRH	gonadotrophin-releasing hormone	LOC	loss of consciousness
GSF	Gold Standards Framework	LP	lumbar puncture
GTN	glyceryltrinitrate	LRP	laparoscopic radical prostatectomy
GUM	genitourinary medicine	LSMDT	local hospital skin cancer multidisciplinary team
HAART	highly active antiretroviral therapy	LTRA	leukotriene receptor antagonists
HADS	Hospital Anxiety and Depression Scale	LVEF	left ventricular ejection fraction
HAV	hepatitis A virus	MALT	mucosal-associated lymphoid tissue
HBV	hepatitis B virus	MAO	monoamine oxidase
HCA	healthcare assistant	MAP	mean arterial pressure
HCl	hydrochloric acid	MAU	medical admissions unit
HCV	hepatitis C virus	MDS	myelodysplastic syndrome
HDL	high-density lipoprotein	MCH	mean cell haemoglobin
HDV	hepatitis B-associated delta virus	MCHC	mean cell haemoglobin concentration
HEV	hepatitis E virus	MCV	mean cell volume
HHS	hyperosmolar hyperglycaemic state	MGUS	monoclonal gammopathy of undetermined significance
HIT	heparin-induced thrombocytopenia	MI	myocardial infarction
HL	Hodgkin's lymphoma		

MM	multiple myeloma	PIs	protease inhibitors
MMSE	mini-mental status examination	PICC	peripherally inserted central catheter
MPS	myocardial perfusion scintigraphy	PID	pelvic inflammatory disease
MRA	magnetic resonance angiography	PIN	prostate intraepithelial neoplasia
MRI	magnetic resonance imaging	PMDD	premenstrual dysphoric disorder
MS	multiple sclerosis	PMS	premenstrual syndrome
MUST	Malnutrition Universal Screening Tool	PNES	psychogenic non-epileptic seizures
MV	minute volume	PNS	peripheral nervous system
NAATs	nucleic acid amplification tests	POS	polycystic ovary syndrome
NCSP	National Chlamydia Screening Programme	PPC	Preferred Priorities of Care
NE	norepinephrine	PPCI	primary PCI
NES	non-epileptic seizures	PPI	proton-pump inhibitor
NG	nasogastric	PRL	prolactin
NHL	non-Hodgkin's lymphoma	PSA	prostate specific antigen
NHS	National Health Service	PTH	parathyroid hormone
NHSCSP	NHS Cervical Screening Programme	PTK	phototherapeutic keratectomy
NICE	National Institute for Health and Clinical Excellence	PUD	peptic ulcer disease
NIPPV	non-invasive positive pressure ventilation	PUSH	Pressure Ulcer Scale for Healing
NIV	non-invasive ventilation	PV	polycythaemia vera
NJ	nasojejunal	PVR	pulmonary vascular resistance
NK	natural killer	RA	rheumatoid arthritis
NMC	Nursing and Midwifery Council	RAS	reticular activating system
NNRTIs	non-nucleoside reverse transcriptase inhibitors	RBCs	red blood cells
NPSA	National Patient Safety Agency	RDW	red cell distribution width
NPTR	nocturnal penile tumescence and rigidity	RES	reticuloendothelial system
NPUAP	National Pressure Ulcer Advisory Panel	RLS	restless leg syndrome
NRS	numerical rating scale	RLS	Reporting and Learning System
NRTIs	nucleoside reverse transcriptase inhibitors	ROM	range-of-motion
NSAID	non-steroidal anti-inflammatory drugs	RPR	rapid plasmin reagin
NSCLC	non-small cell lung cancer	RSV	respiratory syncytial virus
NSF	National Service Framework	RV	reserve volume
NSTEMI	non-ST elevated MI	SAARDs	slow-acting antirheumatic drugs
NYHA	New York Heart Association	SAH	subarachnoid haemorrhage
OA	osteoarthritis	SCA	sickle cell anaemia
OAFs	osteoclast activating factors	SCC	spinal cord compression
ONS	Office for National Statistics	SCC	squamous cell carcinoma
OPCAB	off-pump coronary artery bypass	SCD	sickle cell disease
ORIF	open reduction and internal fixation	SCD	sudden cardiac death
PA	pernicious anaemia	SCLC	small-cell lung cancer
PBC	polychlorinated biphenyl	SCT	spinal cord tumour
PBI	penetrating brain injury	SCT	stem cell transplantation
PCA	patient-controlled analgesia	SDH	subdural haematoma
PCI	percutaneous coronary intervention	SER	somatosensory evoked response
PCLI	plasma cell labelling index	SERMs	selective oestrogen receptor modulators
PCP	pneumocystis carinii pneumonia	SHOT	Severe Hazards of Transfusion
PCR	polymerase chain reaction	SIADH	syndrome of inappropriate ADH secretion
PCS	post-concussion syndrome	sIgA	secretory immunoglobulin A
PCT	primary care trust	SIRS	systemic inflammatory response syndrome
PCT	proximal convoluted tubule	SLE	systemic lupus erythematosus
PCV	packed cell volume	SPECT	single photon emission computed tomography
PD	Parkinson's disease	SSRIs	selective serotonin reuptake inhibitors
PEG	percutaneous endoscopic gastrostomy	STEMI	ST elevated MI
PEJ	percutaneous endoscopic jejunostomy	STI	sexually transmitted infection
PET	positron emission tomography	SV	stroke volume
PFT	pulmonary function tests	SVR	systemic vascular resistance
		TAA	tumour-associated antigen

TBI	traumatic brain injury	TURP	transurethral resection of prostate
TBI	total body irradiation	TV	total volume
TBSA	total body surface area	UC	ulcerative colitis
TCA	trichloroacetic acid	URTI	upper respiratory tract infection
TCC	transitional cell carcinoma	UTI	urinary tract infection
TEDS	thromboembolic deterrent stockings	VAD	vascular access device
TENS	transcutaneous electrical nerve stimulation	VAS	visual analogue scale
TH	thyroid hormone	VC	vital capacity
TIA	transient ischaemic attack	VCAM	vascular cell adhesion molecule
TIBC	total iron binding capacity	VCD	vacuum constriction device
TLC	total lung capacity	VD	venereal disease
TLS	tumour lysis syndrome	VDRL	venereal disease research laboratory
TPN	total parenteral nutrition	VEP	visual evoked responses
TNM	Tumour, Node, Metastases	VLDL	very low-density lipoproteins
TRAM	transverse rectus abdominis myocutaneous	VNS	vagus nerve stimulation
TRANCE	TNF-related activation-induced cytokine	VOC	vaso-occlusive crisis
TRUS	transrectal ultrasound	vWD	von Willbrand disease
TSH	thyroid-stimulating hormone	vWF	von Willebrand factor
TTH	tension-type headache	WBCs	white blood cells
TTP	thrombotic thrombocytopenic purpura	WHO	World Health Organization
TUIP	transurethral incision of the prostate	YAG	yttrium aluminium garnet
TUNA	transurethral needle ablation		

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Figures

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Tables

Table 15.3 adapted from *International Journal of Gynaecology and Obstetrics*, Vol. 7, No 2, Benedet, J.L., Bender, H., Jones, H. Ngan,

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Text

Box 1.3 and extract on page 648 from *The code: Standards of conduct, performance and ethics for nurses and midwives*, Nursing and Midwifery Council (2008), The Nursing and Midwifery Council. Available at www.nmc-uk.org/Publications/Standards/; Box 1.10 from *Ambitions for Health: A strategic framework for maximising the potential of social marketing and health-related behaviour*, Department of Health (2008) pp. 27–28, Crown Copyright; Extract on page 169 adapted from www.nice.org.uk/nicemedia/pdf/CG029quickrefguide.pdf, © NICE 2005, National Institute for Health and Clinical Excellence (2005) Adapted from *CG 29 Pressure ulcers: the prevention and treatment of pressure ulcers*. London: NICE. Available from www.nice.org.uk/guidance/CG29 Reproduced with permission.; Extract on page 314 adapted from Reducing the incidence of coronary heart disease, *British Journal of Nursing*, Vol. 19, No.14, pp. 865–70 (Chummum, H. 2009); Extract on page 325 adapted from Reducing the incidence of coronary heart disease, *British Journal of Nursing*, Vol. 19, No. 14, pp. 865–70 (Chummum, H. 2009); Extract on page 412 adapted from *Fundamental Aspects of Nursing Adults with Respiratory Problems*, Quay Books (Scullion, J. 2007).

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1

The role and function of the adult nurse in health and illness

Learning outcomes

- Be able to describe the core proficiencies of the nurse in **health** and **illness** management and to apply the attitudes and skills necessary for **critical thinking** when using the **nursing process** in person care.
- Be able to explain the importance of the Nursing and Midwifery Council (NMC) 'The Code' of conduct and standards as guidelines for clinical nursing practice (NMC 2008).
- Explain the activities and characteristics of the nurse as caregiver, educator, advocate, leader and manager, and researcher.
- Explain factors affecting functional health status and discuss the nurse's role in health promotion, and describe the primary, secondary and tertiary levels of illness prevention.
- Describe characteristics of health, **disease** and illness, and describe illness behaviours and needs of the person with **acute illness** and **chronic illness**.
- Compare and contrast the physical status, risks for alterations in health, assessment guidelines and healthy behaviours of the adult through the lifespan.

Clinical competencies

- Demonstrate critical thinking when using the nursing process to provide knowledgeable, safe client care.
- Provide clinical care within a framework that integrates, as appropriate, the medical-surgical nursing roles of caregiver, educator, advocate, leader/manager and researcher.
- Include knowledge of developmental levels and of activities to promote, restore and maintain health when planning and implementing care for adults and their families.
- Apply the theory to practice settings.



CASE STUDY

Below is a case study that you may wish to consider before, during or after you have read the chapter. There are no right or wrong answers, but you should think about the physical, psychological and social implications. For example, can you identify the psychological impact that admission for surgery has on the individual? You may also want to think about what nursing observations you are familiar with to assess people in the pre- and post-operative stages of care.

Case Study 1 – Wendy

Ms Wendy Xin is admitted to hospital for surgery to explore a possible malignancy. What emerges is the experiences that Wendy has as she embarks upon her journey as a patient during the pre-, peri- and post-operative stages of care.

INTRODUCTION

Adult nurses are at the forefront of a wealth of different types of care in a variety of healthcare settings. People and the associated health issues that they present with are diverse. The role of the adult nurse is both demanding and rewarding and carries with it a high degree of responsibility.

Aspects of the role include health promotion, health and illness care of adults based on knowledge derived from the arts and sciences, and shaped by knowledge (the science) of nursing. It focuses on the adult's response to actual or potential alterations in health. The wide range of ages and the variety of healthcare needs specific to individual people make the field of adult nursing an ever-changing and challenging area of nursing practice.

Adults requiring healthcare services may access and use the system through a variety of providers and settings, including hospital-based outpatients care, community-based offices and clinics and home care. In the healthcare system of the 21st century, hospitals are primarily acute care providers with services focused on high-technological care for severely ill or injured people or for people having major surgery. Even those people rarely remain in the hospital for long. They are moved as rapidly as possible to less acute care settings within the hospital and then to community-based and home care. Healthcare has become a managed care, community-based system. Although many nurses are still employed in hospitals, they are increasingly providing nursing care outside of the acute care, in-hospital setting. Those settings include clinics, schools, prisons, day care centres, offices and homes, and also the facility for instantaneous responses to problems via NHS Direct.

Regardless of the type of healthcare service or setting, nurses in the field of adult care must use knowledge and skills to be competent and safe when providing person support. Nursing care is structured by the activities planned and carried out through critical thinking within the nursing process, is based on ethics and standards established by nursing organisations, and is focused on returning the person to their best state of functional health.

Claire, a third year student nurse said: *'If you can make a difference to one person (adult) as a nurse then you have achieved something special.'*

The first part of this chapter provides a broad overview of the context of nursing in acute and ongoing care. An overview of the nurse as a caregiver, and critical and ethical thinker is presented. The next part of the chapter explores aspects of health and illness. Prevention of illness and disease are highlighted, and adult development is explored with an overview of the types of health breakdown that are characteristic of the developing adult. To finish the chapter, there is a section that considers the role of the nurse when caring for patients undergoing surgery. Here you will see aspects of care in both the pre- and post-operative period.

Consider this . . .

- 'This area requires the care of adults, from 18-year-olds to older people, in a variety of settings for individuals with wide ranging levels of dependency. The ethos of adult nursing is person centred and acknowledges the differing needs, values and beliefs of people from ethnically diverse communities.
- Nurses engage in and develop therapeutic relationships that involve individuals and their carers in ongoing decision-making that informs nursing care. Adult nurses have skills to meet the physical, psychological, spiritual and social needs of individuals, supporting them through care pathways and working with other health and social care professionals to maximise opportunities for recovery, rehabilitation, adaptation to ongoing disease and disability, health education and health promotion.
- New ways of working provide enhanced opportunities for adult nurses to provide safe and effective care that meets the defined needs of this group in partnership with them. Their ability to be self-directed throughout their professional careers to support lifelong learning, in turn, contributes to continuous quality improvement in care delivery.'

Source: NMC 2004, *Standards of Proficiency for Pre-registration Nursing Education*, 23–24.

In this textbook, the human response to health and illness is structured within the framework of functional health patterns, and nursing care is presented within the context of nursing case studies and intervention. To assist your understanding and development, case studies are presented at the start of each chapter. You will notice that the cases guide you into thinking about what you already know in relation to the illnesses presented and the nursing care required. Opportunities for you to stop and consider broader issues of the subjects presented are given. These are in the form of Practice Alerts, which provide quick summaries of aspects of care, and Consider This boxes like the one above to give you the opportunity to think and reflect. Fast Facts aim to give you some up-to-date food for thought to support the more detailed information within each chapter. The pedagogical features within the book aim to support the idea of lifelong learning, and to stimulate the reader into further investigation.

The nurse in acute and ongoing nursing practice

Contemporary healthcare is a vast and complex system. It reflects changes in society, changes in the populations requiring nursing care and a philosophical shift toward health promotion and illness prevention. The roles of the adult nurse have broadened and expanded in response to these changes. Adult nurses are not only caregivers but also educators, advocates, leaders and managers, and researchers. The nurse assumes these various roles to promote and maintain health, to prevent illness and to facilitate coping with disability or death for the adult patient (a person requiring healthcare services) in any setting.

TYPES OF HEALTHCARE IN THE UNITED KINGDOM

The National Health Service (NHS) Plan (DoH 2000) set out to improve the performance of healthcare and to invest in both the facilities for health and in the staff who support health in the UK. The main overarching principle of healthcare which is predominantly free at the point of delivery still remains. We will now look at primary and secondary care and who receives healthcare in the UK.

Primary care

Primary care is often thought of as the first point of contact for people seeking healthcare, and primary care offers a wide variety of services. You may be familiar with the examples below as these typically include:

- NHS walk-in centres, providing quick and accessible (often on the high street) care and advice. They are often nurse-led services and provide treatment, advice and referral for minor injuries and illness.
- General Practitioner (GP) practices, that cover a wealth of services to promote, educate, treat and support healthcare. Examples include screening services, e.g. cervical screening; smoking cessation; diagnosis and treatment of health problems; referral for specialist medical assessment, e.g. consultants in hospitals. A variety of healthcare staff support GP services including practice nurses, district nurses, health visitors, school health advisors, physiotherapists and midwives.
- Opticians, dentists and pharmacists provide support to persons in the primary care setting and can be part of the NHS provision or offer independent services which are fee based.
- NHS Direct offers a 24-hour confidential service over the telephone, providing information and advice on a wide range of health topics. The service also has an on-line link.

Secondary care

Secondary care (or acute care) takes place in the hospital setting. This can be NHS Trust provision or within the independent sector (for example private hospitals). Here, there is provision for both emergency and elective care. Elective care is the care which is planned in negotiation with the person – a typical example of this might be elective surgery for a hip joint replacement.

Who receives acute and ongoing nursing care?

Nurses support and care for a number of different people. Recipients of care and support are often referred to as consumers and service users (defining care as a commodity). The terms person and client can be used to define a person who is within the system of healthcare. *Patient* arises from the Latin 'to suffer' or 'to bear'. Because of this, the use of 'patient' has been criticised as being a submissive term implying acceptance of the decisions of health professionals and a lack of negotiation with consumers of healthcare. As such, the term *client* is often adopted to express the notion of consumers of health who are self-directed and responsible for their own health. Within this text you will see the terms 'person' and 'individual' used to describe consumers of care.

Consider this . . .

The report, *Nursing in Society: Starting the debate*, was commissioned by the Chief Nursing Officer for England and was undertaken in the spring and early summer of 2008 to support and inform the nursing contribution to Lord Darzi's NHS Next Stage Review. The driving force behind the report was the sense that nursing had lost its way; that there was unacceptable variation in the quality of care that nurses delivered. While the standard of nursing is generally high, when it falls short it has a marked impact on how individuals



experience the whole of their contact with the health service. The report defines what patients and nurses want, in terms of good-quality care in all healthcare settings, and identifies a series of proposals to improve the quality of care in the NHS in England.

Source: Maben 2008.

Within this textbook, there will be opportunities for you to think about the nurse's role in providing and managing good-quality contemporary nursing care in an acute and ongoing setting and about health and ill health in general, and to be aware of the professional status of the nurse.

THE NURSE AS CAREGIVER

Nurses have always been identified as caregivers. However, the activities carried out within the caregiver role changed tremendously in the 20th century to inform and subsequently influence the development of contemporary nursing. From 1900 to the 1950s, from Nightingale to the introduction of the NHS, the nurse was almost always female and was regarded primarily as the person who gave personal care and carried out the physician's orders. This dependent role has changed completely, due in part to the increased education of nurses, research in and the development of nursing knowledge, and the recognition that nurses are autonomous and informed professionals.

Consider this . . .

Florence Nightingale (1820–1910) was a pioneer in bringing respectability to nursing. The public image viewed nurses as *guardian angels* and *angels of mercy*. Middle class women were encouraged into this moral, compassionate, self-sacrificing role. Nightingale defined nursing in relation to the environment in which recovery took place and set great store by the cleanliness, quietness and airiness of the care setting.

Later theorists considered nursing in relation to health as well as ill health and began to define nursing in these terms. In 1966 Virginia Henderson wrote:

the unique function of the nurse is to assist the individual, sick or well, in the performance of those activities contributing to health or its recovery (or to peaceful death) that he would perform unaided if he had the necessary strength, will, or knowledge, and to do this in such a way as to help him gain independence as rapidly as possible (Henderson 1966, 3).

In the Consider This box, you will note that Henderson (1966) implies that nursing is more than a matter of carrying out the doctor's orders. Instead, nursing involves a special relationship with the person (and often the family). According to Henderson, the nurse intervenes with knowledge and skills

to meet those needs that individuals and family would not normally be able to provide.

The caregiver role for the nurse today is both independent and collaborative. Nurses independently make assessments and plan and implement care based on nursing knowledge and skills. Nurses also collaborate with other members of the healthcare team to implement and evaluate care.

As a caregiver, the nurse is a practitioner of nursing both as a science and as an art. Using critical thinking in the nursing process as the framework for care, the nurse provides interventions to meet not only the physical needs but also the psychosocial, cultural, spiritual and environmental needs of individuals and families. As such, nurses have to understand the complex nature of what it is to be human, in order to respect and value the beliefs and diverse needs of individuals.

PRACTICE ALERT



Samira is a 42-year-old woman admitted to a busy surgical ward for cholecystectomy (removal of the gall bladder). She asks for a facility to pray in private.

Nursing care should be provided within a multicultural setting that respects diversity. Nurses should consider the care needs of people with similar and differing values, beliefs and cultures in order to provide meaningful and beneficial healthcare (Leininger and McFarland 2002).

Whatever social customs characterise the ethnic group being cared for (be it dietary and religious practices, dress, social interactions or health rituals etc.), nurses should value and facilitate these (Peate 2006).

Healthcare systems support individuals who are culturally diverse. This diversity can include differences in country of origin, health beliefs, sexual orientation, race, socioeconomic level and age. Nurses need to deliver care which is culturally sensitive. However, there can be barriers to this such as the view that one's own cultural values and beliefs are the preferred ones. The healthcare system itself is a culture, primarily managed by white middle class people, and this in itself can be interpreted as a barrier to culturally sensitive care.

The nursing process

Consider this . . .

The nursing process is the series of critical thinking activities nurses use as they provide care. These activities define a nursing model of care, differentiating nursing from other healthcare professions, and can be used in any setting. The purpose of care may be to promote and maintain health, restore health or manage disability or death. Regardless of

the purpose of care, the planned process of nursing allows for the inclusion of specific, individualised and holistic caring activities.

Application of the Nursing Process to a variety of health and ill health nursing situations is a feature of the subsequent chapters of this book

The nursing process is referred to as a systematic approach to the delivery of person-centred nursing care. This process involves the collection and analysis of an individual's information in order to identify actual or potential health problems, to develop a plan of nursing care and intervention and to constantly review this process in the light of current evidence-based nursing practice. This is achieved through a systematic application of the five phases of the nursing process (see Box 1.1 and Figure 1.1). Information from each phase inputs to the next phase, for example, the evaluation phase will discover findings to feed back into the assessment phase, and so the cycle of the process continues.

The recurring nature of the nursing process encourages the revisiting of the phases. There is a real focus on the person at the heart of this process. Returning to the distinct phases of the nursing process encourages the nurse to be responsive to the person's needs and changing health status.

COLLECTING DATA AS PART OF THE NURSING PROCESS

Data collection is the process of gathering the relevant information in relation to the person's state of ongoing health. Data should reflect both current and past information, and rely on

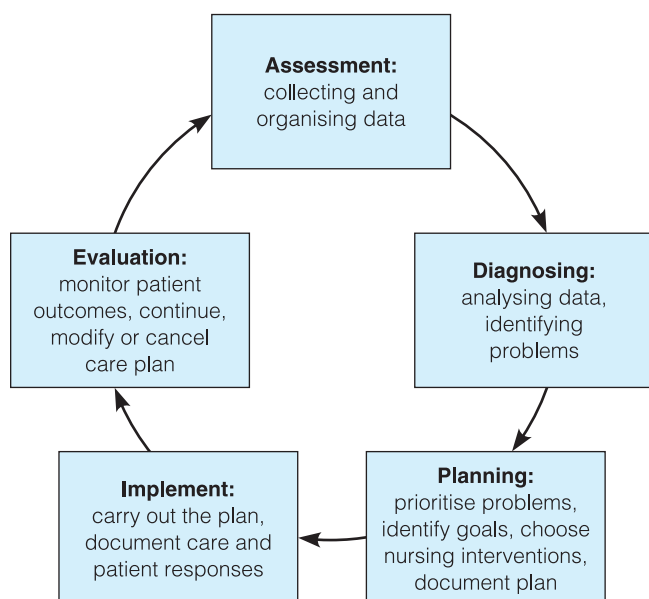


Figure 1.1 Phases of the nursing process.

Box 1.1

The phases of the nursing process

- **Assessing** involves the collection and organising of information. Assessment is usually listed as the first step of the nursing process, but in actuality it is a critical element in each of the steps. Data collected are validated with the individual by reviewing nursing and/or interdisciplinary team records and by conducting physical examinations. The individual's view of health and illness and their ability to self-care are considered. To make accurate and holistic assessments, nurses must have and use a wide variety of knowledge and skills. The ability to assess the physical status of the individual is essential, as is the ability to use effective communication techniques.
- **Diagnosing** is the analysis and interpretation of the data collected. In this phase, the nurse identifies the individual's health problems, making comparisons against the expected norms. In this way, the nurse determines the person's strengths, risks, problems and nursing diagnosis. The nurse formulates diagnostic statements.
- **Planning** determines how to promote individual strengths and prevent, reduce or resolve problems and how to intervene and implement nursing care. Goals are set in an individualised nursing care plan, and desired outcomes are identified. Care is organised in a way that prioritises goals and interventions and these, in turn, are communicated to other healthcare workers in the form of a collaborative care plan. The nursing interventions planned must be specific and individualised. If, for example, the nurse identifies that a person is at risk of dehydration, it is not enough for the nurse to simply encourage the person to drink increased amounts of fluid. The nurse and the person together must identify those liquids preferred, the times that will be best for drinking them and the amount of fluid required; this information must be documented on the written care plan. Only then does care truly become a part of the plan of care.
- **Implementing**. Planned interventions take place to help the individual meet the desired negotiated and identified goals and outcomes. In this phase, the care plan is updated by documenting the care given. Collaboration is maintained with the individual and interdisciplinary team. For example, the nurse would not be able to encourage fluids if the person was feeling sick or vomiting.
- **Evaluating** measures the degree to which goals and outcomes have been achieved. This helps the nurse determine which interventions have had a positive or negative effect. Again, collaboration with the person is paramount, and care plans can be continued, modified or even cancelled.

Source: adapted from Kozier *et al.* 2008.

Table 1.1 Types of data: objective and subjective

Objective data	Subjective data
Weight	Pain
Height	Anxiety
Temperature	Emotion
Urinalysis	Tiredness
Blood analysis	Depression
Heart rate	Anticipation

the participation of both the nurse and the individual. Recording of data is an integral part of the process, and can inform the development of a framework for care such as a nursing model.

The data collected can be broadly divided into two types: objective or subjective (Table 1.1). Objective data are those which you observe and measure, for example height and weight measurement. Subjective data are those which the person feels and perceives, for example the symptoms that an individual has. The usual primary source of data is the person; however, secondary sources can include family members, past and current medical and nursing records and other members of the healthcare team.

Data are used to support the nurse in decision-making in each phase of the nursing process. Nurses make independent and individual responses to individual needs, resulting in the development of individualised care plans. Skills inherent within the nursing process are problem-solving, the therapeutic relationship with individuals, interdisciplinary working and critical thinking.

Critical thinking and evidence-based care in adult nursing

Critical thinking is self-directed thinking that is focused on what to believe or do in a specific situation. It involves attitudes, skills and knowledge and happens when the nurse uses scientific knowledge combined with the stages of the nursing process to consider a care situation. Judgements and decisions develop through this framework.

Emma, a third year student nurse said: *'To practise within the framework of evidence-based care, you need to have the best information available.'*

Consider this . . .

Critical thinking is essential to skilled nursing and is therefore essential to nursing. Skilled nursing develops in an atmosphere that is rich in debate, questioning and evidence-based care. Critical thinking becomes an integral component of the nurse's attitudes and skills within the practice setting.

ATTITUDES AND THOUGHT PROCESSES NECESSARY FOR CRITICAL THINKING

Thinking critically involves more than just cognitive (knowledge) skills. It is strongly influenced by your attitudes and thought processes. To think critically, you must focus your attention on your attitudes and how they affect your thinking. The skills necessary for critical thinking are outlined in Box 1.2.

Have a look at the following attributes that can support you as a nurse to:

- *Be able to think independently.* This enables you to make clinical decisions based on sound thinking and judgement.
- *Be willing to listen to and be fair in your evaluation of others' ideas and beliefs.* Listening carefully to other ideas and thoughts, and making a decision based on what you learn instead of how you feel.
- *Have empathy.* For example, if you put yourself in the place of the person with severe pain, you are better able to understand why he or she is so upset when medication to alleviate pain is late.

Box 1.2

Skills for critical thinking

The major critical thinking skills are divergent thinking, reasoning, clarifying and reflection.

- *Divergent thinking* is having the ability to weigh up the importance of information. This skill involves weighing up the relevance of data from which you draw conclusions, for example, information which is abnormal is usually considered relevant; normal data can be helpful but may not change the care you provide.
- *Reasoning* is having the ability to discriminate between facts and guesses. By using known facts, problems are solved and decisions are made in a systematic, logical way. For example, when you take a pulse you must know the facts of normal pulse rate for a person of this age, types of medications the person is taking that may alter the pulse rate and the emotional and physical state of the person. Based on these facts, you are able to decide if the pulse rate is normal or abnormal.
- *Clarifying* involves noting similarities and differences to sift out unnecessary information to help focus on the present situation. For example, when caring for a person with chronic pain, you must know the definition of chronic pain and the similarities and differences between acute pain and chronic pain.
- *Reflection* occurs when you take time to think about something, comparing different situations with similar solutions. It cannot take place in an emergency situation. As you reflect on your experiences in nursing, many of those experiences may in turn become alternatives when caring for a different person.

- *Be fair minded and consider all viewpoints.* Consider the viewpoints of others that may be different from yours before reaching a conclusion.
- *Learn from others.* You are not afraid to say, 'I don't know the answer to that question, but I will find out and let you know.'
- *Be disciplined.* Don't stop at easy answers, but continue to consider alternatives.
- *Be creative and self-confident.* Consider different ways of providing care and constantly look for better, more cost-effective methods. Confidence in one's decisions is gained through critical thinking.
- *Reflect and take time to think about situations.* As you reflect on your experiences in nursing, many of those experiences may in turn become alternatives in different care scenarios.

In essence, the ability to apply critical thinking is expected of all nurses. Using critical thinking to provide care that is structured by the nursing process allows the nurse to provide safe, effective, holistic and individualised care.

Helen, a staff nurse on a surgical ward shared her view by stating: *'Don't just do things because that is the way things are done – make your own decisions based on the best nursing evidence available.'*

The science (knowledge base) of nursing is translated into the art of nursing through caring. Caring is the means by which the nurse is connected with and concerned for the individual. Thus, the nurse as caregiver is knowledgeable, skilled, empathic and caring.

Applying ethics to nursing practice

Nursing practice is structured by codes of ethics (shown in Box 1.3) and standards that guide nursing practice and protect the public. Individual nursing practice can be held to these standards in a court of law. The guidelines are especially important because nurses encounter legal and ethical problems almost daily. The large number of ethical issues facing nurses in clinical practice makes the standards for nurses and midwives critical to moral and ethical decision-making. These standards also help to define the roles of nurses.

A standard is a statement or criterion that can be used by a profession and by the general public to measure quality of practice. Established standards of nursing practice make each individual nurse accountable for practice. This means that each nurse providing care has the responsibility or obligation to account for his or her own behaviours within that role. Professional nursing organisations develop and implement standards of practice to help clarify the nurse's responsibilities to society. In the UK, the Nursing and Midwifery Council (NMC) (2008) identify standards of conduct, performance and ethics for nurses and midwives.

Box 1.3

The code: Standards of conduct, performance and ethics for nurses and midwives (NMC 2008) (The code)

'The code' states that:

The people in your care must be able to trust you with their health and wellbeing. To justify that trust, you must:

- Make the care of people your first concern, treating them as individuals and respecting their dignity:
 - treat people as individuals
 - respect people's confidentiality
 - collaborate with those in your care
 - ensure you gain consent
 - maintain clear professional boundaries.
- Work with others to protect and promote the health and wellbeing of those in your care, their families and carers, and the wider community:
 - share information with your colleagues
 - work effectively as part of a team
 - delegate effectively
 - manage risk.
- Provide a high standard of practice and care at all times:
 - use the best available evidence
 - keep your skills and knowledge up to date
 - keep clear and accurate records.
- Be open and honest, act with integrity and uphold the reputation of your profession:
 - act with integrity
 - deal with problems
 - be impartial
 - uphold the reputation of your profession.

As a professional, you are personally accountable for actions and omissions in your practice and must always be able to justify your decisions.

You must always act lawfully, whether those laws relate to your professional practice or personal life.

Source: adapted from The code: Standards of conduct, performance and ethics for nurses and midwives (NMC 2008).

An established code of ethics is one criterion that defines a profession. Ethics are principles of conduct, and ethical behaviour is concerned with moral duty, values, obligations and the distinction between right and wrong. Codes of ethics for nurses provide a frame of reference.

Ethics is relevant to all areas of nursing practice, and even the wider aspects of research, management and education fall under this umbrella. Active involvement in ethical decision-making is an integral part of being a nurse, because the primary aims of caring are to do good and to minimise harm. These two fundamental considerations when engaging in caring are significant overarching ethical principles, and are linked together with justice and the belief in avoiding harm to those in our care (see Box 1.4).

Box 1.4

Ethical principles

There are four principles which are the essential core of ethics.

- Autonomy (the respect for rights of individuals and for their self-determination; holding self-determination and self-governance over one's actions).
- Beneficence (doing good, providing benefits & measuring benefits against risks & costs; the prevention of harm and the promotion of good).
- Non-maleficence (to do no intentional harm).
- Justice (derived from the general rule of human conduct to treat others fairly/distributing benefits, risks & costs fairly).

Source: Beauchamp and Childress 2001, Glass and Cluxton 2004.

Of course, many high-profile discussions about ethics will focus on the big debates about life and death (for example, Assisted Dying for the Terminally Ill Act 2005). However, in everyday encounters, ethical issues are constantly played out in a subconscious way. Moral decision-making can be as fundamental as whether or not to tell your friend that 'no, she really doesn't suit that colour'! When applied to the care setting, this subconscious decision-making can be influenced by our opinions and personal values, a sense of what is right or wrong, our understanding of our obligations and duties as a nurse and the subsequent consequences of our actions. **Nursing ethics** is about asking ourselves whether something that can be done, should be done, or should not be done. Some answers can be considered more socially or morally acceptable than others, depending on the context in which they exist.

Consider this . . .

Everyday sayings that involve ethical thinking:

'I demand to be treated with respect.'

'You shouldn't behave like that.'

'You've got no right to say that to me.'

'Well, at least there was no harm done.'

'You can't say fairer than that.'

'He is a really good person.'

'We will treat her first because her needs are greater.'

Source: adapted from Chaloner 2007.

Ethical discussion will often focus around the balance between rights and obligations in healthcare. In essence, this means that if we acknowledge the right to a healthy life, we should also acknowledge the obligation to support that right. Nurses are in a position to promote, maintain and support healthy living, and to provide appropriate care when a person's

health breaks down. This is also echoed in the Health Act of 2009 which endorses the principle of supporting the population in the UK in its right to healthcare. Here the NHS Constitution values, for example, the right for persons to be treated with a professional standard of care, by appropriately qualified and experienced staff.

Theories might include:

- **Deontology.** Universal moral rules that everyone should follow – the idea that rights must be defined regardless of the consequences of actions.
- **Consequentialism** (often referred to as utilitarianism). Actions produce the greatest good for the greatest number of people. In this theory, rights should not be granted without examination of the possible results (or consequences).

Consider this . . .

100 people are on a sinking ship, but the lifeboats will only carry half that number. How do you decide who will get the safety of the lifeboat?

- Deontologists would apply the rule that everybody has the right to a place on a lifeboat (one option might be to draw short and long straws to decide).
- Consequentialists would consider the individual merits of each person and debate the best outcome (or consequence) of choosing who would get a place (for example, a scientist on the brink of developing a life-saving vaccine).

The same types of theories can be applied to decisions in healthcare.

Legal and ethical dilemmas in nursing

A dilemma is a choice between two unpleasant, ethically troubling alternatives. Nurses who provide acute and ongoing nursing care face dilemmas almost daily – so many, in fact, that a complete discussion of them is impossible here. However, many commonly experienced dilemmas involve confidentiality, a person's rights, and issues of dying and death. The nurse must use ethical and legal guidelines to make decisions about moral actions when providing care in these and in many other situations.

Nurses respect the right to confidentiality of information found in the person's record or noted during assessment. Rights of the person as an individual, however, can result in dilemmas for the nurse in the clinical setting. For example, the right to privacy and confidentiality creates a dilemma when it conflicts with the nurse's right to information that may affect personal safety.

The right to refuse treatment (including surgery, medication, medical therapy and nourishment) is another individual right that raises nursing dilemmas. The situation, the alternatives and the potential harm from refusal must be carefully explained.

The issues surrounding dying and death have become increasingly pressing as advances in technology extend the lives of people with chronic debilitating illness and major trauma. These changes have altered concepts of living and dying, resulting in ethical conflicts regarding quality of life and death with dignity versus technologic methods of preserving life in any form. Even if the person is competent and requests that no heroic measures be used to maintain life, many questions arise related to nursing care. What constitutes a heroic measure? Should nursing interventions to provide comfort include administering medication at a level known to stop breathing? Should a feeding tube be placed in the person who is terminally ill? These and other questions are being debated not only within the healthcare system but also in the British and European courts.

THE NURSE AS ADVOCATE

The person entering the healthcare system may be unprepared to make independent decisions. However, today's healthcare consumer is better educated about options for care, and may have very definite opinions. The nurse as an advocate actively promotes the person's rights to autonomy and free choice (see Box 1.5). Speaking for the person, the nurse mediates between the person and others, and/or protects the person's right to self-determination.

Nathan, a Charge Nurse, notices that patients will often willingly agree with what the doctor says, and then ask for support and clarity from the nurses. *'Nurses are viewed more as equals and are less threatening than those who are seen as powerful. Often patients will turn to the more junior student nurse for support and clarification of their position.'*

The nurse must practise advocacy based on the belief that individuals have the right to choose treatment options, based on information about the results of accepting or rejecting the treatment, without coercion. The nurse must also accept and respect the decision of the individual, even though it may differ from the decision the nurse would make. According to MIND, the National Association for Mental Health, *'An advocate is someone who can both listen to you and speak for you in times of need.'* (inyo@mind.org.uk)

Box 1.5

Goals of the nurse as advocate

The goals of the nurse as advocate are to:

- Assess the need for advocacy.
- Communicate with other healthcare team members.
- Provide individual and family teaching.
- Assist and support individual decision-making.
- Serve as a change agent in the healthcare system.
- Participate in health policy formulation.

THE NURSE AS LEADER AND MANAGER

All nurses are leaders and managers. They practise leadership and they manage time, people, resources and the environment in which they provide care. Nurses carry out these roles by directing, delegating and coordinating nursing activities. Nurses must be knowledgeable about how and when to delegate, as well as the legal requirements of delegation. Nurses also evaluate the quality of care provided.

Models of care delivery

Nurses are leaders and managers of care within a variety of models of care delivery. Examples are primary nursing, team nursing, case management and **integrated care pathways**. Terms commonly used in the management of clinical care processes are shown in Box 1.6.

PRIMARY NURSING

Primary nursing allows the nurse to provide individualised direct care to a small number of people during their entire in-patient stay. This model was developed to reduce the fragmentation of care experienced by individuals and to facilitate family-centred continuity of care. In primary nursing, the nurse provides care, communicates with individuals, families and other healthcare providers and carries out discharge planning.

TEAM NURSING

Team nursing is practised by teams of variously educated healthcare workers. For example, a team may consist of a registered nurse, a student nurse and two healthcare assistants. The registered nurse is the team leader. The team leader is responsible for delegating care and has overall responsibility for individual care delivered by team members. All team members work together, each performing the activities for which he or she is best prepared.

Box 1.6

Common terms used for the management of clinical care processes

Common terms used for the management of clinical care processes include:

- Anticipated recovery path – clinical pathway.
- Care map – clinical protocol.
- Care pathway – critical paths.
- Case management plan – expected recovery path.
- Clinical guidelines – integrated care pathway.

CASE MANAGEMENT

Case management focuses on management of a caseload (group) of people and the members of the healthcare team caring for them. The purpose of case management is to maximise positive outcomes and contain costs. The nurse who is case manager is usually a clinical specialist, and the caseload consists of individuals with similar healthcare needs. As case manager, the nurse makes appropriate referrals to other healthcare providers and manages the quality of care provided, including accuracy, timeliness and cost. The case manager is also in contact with people after discharge, ensuring continuity of care and health maintenance.

Delegation

Delegation is carried out when the nurse allocates appropriate and effective work activities to other members of the healthcare team. When the nurse delegates nursing care activities to another person, that person is authorised to act in the place of the nurse, although the nurse retains the accountability for the activities performed.

Danny, a Band 5 Staff Nurse, said: 'As a newly qualified staff nurse, I found delegation to be one of the most difficult challenges, however, I soon realised that my priorities were to manage and to carry out the activities that others were not legally able to do. I now know that I can legitimately delegate in those situations.'

IN PRACTICE



Enhancing delegation skills

- Be aware of the level of competence of each member of the healthcare team, the complexity of the work to be allocated and the amount of time available to supervise the work.
- Understand the level of nursing judgement and evaluation required for the work.
- Consider the potential harm and difficulty of performing the work.
- Be aware of the job descriptions for each member of the care team.
- Assign the right job to the right person.
- Give clear directions. Ask questions to ensure that instructions have been understood.
- Give the team member the authority to complete the work.
- Monitor the outcomes of the care provided and give constructive evaluation if necessary.

INTEGRATED CARE PATHWAYS

Integrated care pathways (also called clinical pathways, critical pathways or treatment protocols) are designed to provide a coordinated approach to care within a multidisciplinary health service. Such pathways are generally developed for specific diagnoses – usually common, high-risk and high-cost type problems – with the collaboration of members of the healthcare team. The goals of critical pathways are listed in Box 1.7.

Typically, care pathways will include protocols for the care and treatment of a variety of health problems including:

- Cardiovascular problems, e.g. rehabilitation following a coronary episode.
- Stroke rehabilitation.
- Surgical pathways, e.g. total abdominal hysterectomy.
- Orthopaedic problems, e.g. joint replacement.

This care management tool describes how resources will be used to achieve predetermined outcomes. It also establishes the sequence of multidisciplinary interventions, including education, discharge planning, consultations, medication administration, diagnostics, therapeutics and treatments.

Box 1.7

The goals of critical pathways

The goals of critical pathways are to:

- Achieve realistic, expected person and family outcomes.
- Promote professional and collaborative practice and care.
- Ensure continuity of care.
- Guarantee appropriate use of resources.
- Reduce costs and length of stay.
- Provide the framework for continuous improvement.

Nurses and quality assurance

You will recall earlier in the chapter the NMC Code which states that you must 'Work with others to protect and promote the health and wellbeing of those in your care, their families and carers, and the wider community' (NMC 2008). As a leader and manager, the nurse is responsible for the quality of person care through a process called **quality assurance**. This process consists of the quality control activities that evaluate, monitor or regulate the standard of services provided to the consumer. Three components of care are evaluated: *structure*, to assess the impact of the environment in which care takes place; *process*, to consider how care is given; and *outcome*, to question the changes in the person's health status as a result of nursing interventions.

As such, quality assurance methods evaluate person care. They commonly evaluate actual care against an established set of standards of care. Nurses and other healthcare providers make this evaluation by reviewing documentation, by conducting patient surveys and nurse interviews and/or by direct observation of nurse or patient performance. The data are then used to identify differences between actual practice and established standards and to develop a plan of action to resolve any differences found.

The operating framework for the NHS for 2010/11 sets out the priorities for the NHS for the year ahead to enable them to begin their planning (see Box 1.8).

Box 1.8

The NHS in England: The operating framework for 2009/10

The national priorities in the operating framework remain the same, providing important stability. The five priorities are:

- improving cleanliness and reducing healthcare-associated infections;
- improving access through achievement of the 18-week referral to treatment pledge and improving access (including at evenings and weekends) to GP services;
- keeping adults and children well, improving their health and reducing health inequalities;
- improving patient experience, staff satisfaction and engagement;
- preparing to respond in a state of emergency such as an outbreak of pandemic flu, learning from our experience of swine flu.

During 2010/11, the NHS has pledged to continue its work to reduce local variation and eliminate poor performance.

Source: DoH 2010.

THE NURSE AS RESEARCHER

Nurses have always identified problems in person care. Although they have developed interventions to meet specific needs, the activities often have not been conducted within a scientific framework or communicated to other nurses through nursing literature. To develop the science of nursing, nursing knowledge is established through clinical research and then published, so that the findings can be used by all nurses to provide evidence-based person care.

To be relevant, nursing research must have a goal to improve the care that nurses provide to persons. This means that all nurses must consider the researcher role to be integral to nursing practice. Safe and effective nursing care is based on the best evidence available.

PRACTICE ALERT



Figure 1.2 Unsheathed hypodermic needle.

The evidence base has demonstrated that most needle-stick injuries in the healthcare setting can be prevented (RCN 2005b, Casey and Elliott 2007, NPSA 2007, Pratt *et al.* 2007). As a result, nursing practice has responded to minimise the risks of needle-stick injury as follows:

Precautions to reduce the risk of sharps injuries include:

- Never re-sheath or re-cap needles.
- Immediate and safe disposal of sharps into appropriate containers.
- Correct use of sharps containers: do not overfill, and replace containers as required.
- Convenient access to sharps containers.
- Regular collections of used sharps containers.
- Use of pre-filled syringes where possible.
- Use of needle-free systems where possible.
- Use of cannulae with integral sharps protection.
- Avoidance of suturing where possible.
- Appropriate anchoring and management of vascular access devices (VADs).
- Ongoing education for staff involved in handling and disposal of sharps.
- Mandatory reporting of all sharps and needle-stick injuries.

Source: Gabriel 2008.

THE NURSE AS EDUCATOR

The nurse's role as educator (see Figure 1.3) is becoming increasingly important for several reasons. Healthcare providers and consumers and the government are placing greater emphasis on health promotion and illness prevention; hospital stays are becoming shorter; and the number of people with chronic



Figure 1.3 The nurse's role as educator is an essential component of care.

illnesses in our society is increasing. Early discharge of patients from the hospital setting to home care means that family carers must learn how to perform complex skills. All of these factors make the educator role essential to maintaining the health and wellbeing of individuals. A major component of the health educator role today is discharge planning. Discharge planning, which begins on admission to a healthcare setting, is a systematic method of preparing the person and family for exit from the healthcare agency and for maintaining continuity of care after the patient leaves the care setting. Discharge planning also involves making referrals, identifying community and personal resources and arranging for necessary equipment and supplies for home care.

The framework for the role of educator is the teaching–learning process, something that nurses often do intuitively. Within this framework, the nurse assesses learning needs, plans and implements teaching methods to meet those needs and evaluates the effectiveness of the teaching. To be an effective educator, the nurse must have effective interpersonal skills and be familiar with adult learning principles.

Jane, a Junior Sister, Neurology, said: *'I love it when student nurses ask me to tell them about this and that! It challenges me to think and it really opens me up to new learning.'*

Health and illness

The human responses that nurses must consider when planning and implementing care result from changes in the structure and/or function of all body systems, as well as the interrelated effects of those changes on the psycho-social, cultural, spiritual, economic and personal life of the individual.

A useful starting point to understand the complexities of health and illness is to begin to define what health is. You could start by considering a definition of your own health. You might consider freedom from disease or the ability to work and socialise as being aspects of your health. Others might include eating a healthy diet and exercising within their definition. How we define health will depend on a complex relationship between our physical makeup, genetics, culture and education and, to some extent, the powerful influences around us from, for example, the media and our social group.

The World Health Organization (WHO) defines health as *'a state of complete physical, mental, and social well-being, and not merely the absence of disease or infirmity'* (WHO 1974, 1). However, this definition does not take into account the various levels of health a person may experience, or that a person may be clinically described as ill yet still think of themselves as well. These additional factors, which greatly influence nursing care, include the health–illness continuum and high-level wellness.

THE HEALTH–ILLNESS CONTINUUM AND HIGH-LEVEL WELLNESS

The **health–illness continuum** (Figure 1.4) represents health as a dynamic process, with high-level wellness at one extreme of the continuum and death at the opposite extreme. Individuals place themselves at different locations on the continuum at specific points in time.

Dunn (1959) expanded the concept of a continuum of health and illness in his description of high-level wellness. Dunn conceptualised wellness as an active process influenced by the environment. He differentiated good health from wellness:

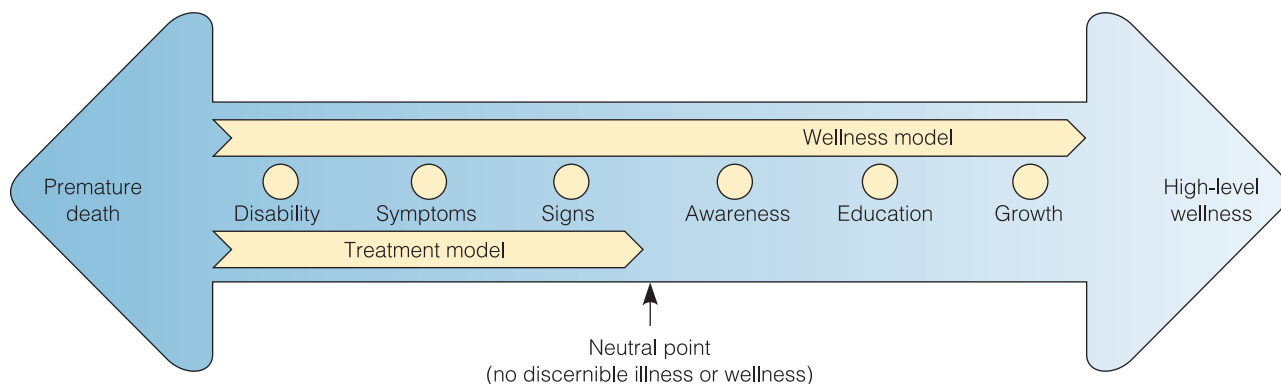


Figure 1.4 The health–illness continuum.

Good health can exist as a relatively passive state of freedom from illness in which the individual is at peace with his environment . . . Wellness is an integrated method of functioning, which is oriented toward maximizing the potential of which the individual is capable, within the environment where he is functioning. (Dunn 1959, 4)

A variety of factors influence wellness, including self-concept, environment, culture and spiritual values. Providing care based on a framework of wellness facilitates active involvement by both the nurse and the individual in promoting, maintaining or restoring health. It also supports the philosophy of **holistic healthcare**, in which all aspects of a person (physical, psychosocial, cultural, spiritual and intellectual) are considered as essential components of individualised care.

FACTORS AFFECTING HEALTH

Many different factors affect a person's health or level of wellness. These factors often interact to promote health or to become risk factors for alterations in health. Factors that can contribute to health are numerous – here are just a few:

- age;
- gender;
- education;
- religion;
- culture;
- social circumstances can contribute;
- lifestyles are partly determined by income;
- social inequalities can affect choices.

Other influences:

- media;
- peers;
- own experience;
- knowledgeable others;
- significant happenings in our (or others') health career.

Consider this . . .

You might want to stop at this point and think about what other factors influence your health and wellbeing.

You might have considered how each person's genetic makeup influences health status throughout life. Genetic makeup affects personality, temperament, body structure, intellectual potential and susceptibility to the development of hereditary alterations in health. Examples of chronic illnesses that are associated with genetic makeup include sickle cell disease, haemophilia, diabetes mellitus and cancer.

Although cognitive abilities (our ability to understand, reason and perceive information) are determined prior to adulthood, the level of cognitive development affects whether

people view themselves as healthy or ill; cognitive levels may also affect health practices. Injuries to and illnesses affecting the brain may alter cognitive abilities. Educational level affects the ability to understand and follow guidelines for health. For example, if an individual is functionally illiterate (can't read or write), written information about healthy behaviours and health resources can be of little use.

Certain diseases occur at a higher rate of incidence in some races and ethnic groups than in others. For example, in the UK, cancer of the prostate is more prevalent in older men and those from the Afro-Caribbean communities.

Age, gender and developmental level are factors in health and illness. Cardiovascular disorders are uncommon in young adults, but the incidence increases after the age of 40. Myocardial infarctions are more common in men than women until women are past the menopause. Some diseases occur only in one gender or the other (e.g., prostate cancer in men and cervical cancer in women). The older adult often has increased incidence of chronic illness and increased potential for serious illness or death from infectious illnesses such as influenza and pneumonia.

The components of a person's lifestyle that affect health status include patterns of eating, use of chemical substances (alcohol, nicotine, caffeine, legal and illegal drugs), exercise and rest patterns and coping methods. Examples of altered responses are the relationship of obesity to hypertension, cigarette smoking to chronic obstructive pulmonary disease, a sedentary lifestyle to heart disease and a high-stress career to alcoholism. The environment has a major influence on health. Occupational exposure to toxic substances (such as asbestos and coal dust) increases the risk of pulmonary disorders. Air, water and food pollution increase the risk of respiratory disorders, infectious diseases and cancer. Environmental temperature variations can result in hypothermia or hyperthermia, especially in the older adult.

Socioeconomic background

Both lifestyle and environmental influences are affected by one's income level. The culture of poverty, which crosses all racial and ethnic boundaries, negatively influences health status. Living at or below the poverty level often results in crowded, unsanitary living conditions or homelessness. Housing often is overcrowded, lacks adequate heating or cooling. Crowded living problems increase the risk of transferring communicable diseases. Other problems include lack of infant and child care, lack of medical care for injuries or illness, inadequate nutrition, use of addictive substances and violence.

Health behaviour

Health behaviour is mediated by the circumstances and environments in which individuals live their lives, in their community, work, school or other settings. Lifestyle choices do not happen in isolation from other factors which may limit either the availability of healthy options in the first place, or the skills of

FAST FACTS

**Geographic area and health status**

Among the population of working age within the UK in 2005:

- In Wokingham, Windsor and Maidenhead one half of the population were in higher managerial and professional occupations whereas in Blaenau Gwent half of the population were in routine and manual occupations.

Source: Hall 2009.

This is further illustrated by the gap between the best and the worst areas for life expectancy:

- *Life expectancy – females*
Living in Kensington & Chelsea = 87.2 years
Living in Liverpool = 78.3 years
- *Life expectancy – males*
Living in Kensington & Chelsea = 83.1 years
Living in Manchester = 73 years

Source: DoH 2007.

individuals to make and carry out those healthy choices. It has been suggested that 50% of mortality from the 10 leading causes of death results from individual behaviour. Behaviour such as smoking, alcohol consumption, poor diet and risky sexual behaviour has been identified as highly significant.

Individual beliefs about health and illness are a significant factor in the way persons behave in relation to their health status. Beliefs imply that there are certain assumptions that we trust to be true or accept as truth. A belief can be thought of as a 'convinced opinion'. You might like to consider if you believe in the power of paracetamol. Placebo effects (the positive response to medication simply because the recipient believes it will work) can arise not only from a conscious belief in a drug, but also from subconscious associations between recovery and the past experience of being treated. Such subconscious thoughts can control our bodily processes without us being aware, such as immune responses and the release of hormones to make us feel better.

Attitudes to health

Why is it useful as nurses to consider attitudes, behaviour and beliefs in health? Attitudes can be central to health promotion because they determine how people behave in relation to their health. Attitudes directly influence how we make choices about health. As nurses engaging in health promotion activities, it is important to understand why some people opt for more healthy behaviour than others, i.e. those who actively seek screening activities against those who decline screening opportunities.

Smoking-related behaviour and attitudes surveyed by the Office for National Statistics (ONS) released results from the *Opinions Survey Report No. 40: Smoking-related Behaviour and*

Attitudes 2008/09 (Lader, 1999). The survey, carried out on behalf of the Department of Health and the NHS Information Centre for health and social care, monitors changes in the general attitude towards smoking and towards smoking in public places as well as smoking behaviour and habits, giving up and stopping smoking. Key findings from the report show that 67% of smokers said they would like to give up, which was significantly lower than 2007 (74%). It also demonstrated that the proportion of those polled who supported the smoking ban in restaurants was 93%, compared with 75% who agreed with the ban in pubs. This suggests that the attitude of drinkers is proportionately different from the attitudes of those enjoying a restaurant environment when it comes to smoking in public.

So, our beliefs about health can influence the way we react to healthcare and the way we adopt lifestyle behaviours. For example, a strong belief in the risk of certain behaviours might in turn alter our actions in relation to them. In a survey conducted by the Food Standards Agency in February 2007, 88% of people in the UK said that they believe that parents should be strict with children and make them eat healthily. In the same study, 89% of people claim that healthy eating is important to them (FSA 2007).

HEALTH PROMOTION AND MAINTENANCE

For many years, the emphasis in nursing was on care of the acutely ill in the hospital setting. With changes in society and in healthcare, this emphasis is shifting toward preventive, community-based care. The importance of teaching health-promoting behaviours is an essential component of health and ill-health nursing. In 2008, Lord Darzi's review of the NHS highlighted the need for a shift in emphasis from a curative approach in healthcare to a model that views health promotion as a key priority (DoH 2008). In promoting this aim Lord Darzi outlined the requirement for primary care trusts (PCTs) to commission and provide comprehensive health promotion services that are aligned to the specific needs of their local populations (DoH 2008).

Healthy living

Promoting healthy lifestyles for people in England and Wales is an important governmental responsibility. The DoH runs initiatives to help people quit smoking, eat better and exercise more, as well as health screening projects and training and skills programmes. The DoH is committed to tackling obesity, sexually transmitted infections, alcohol and substance misuse and smoking.

The DoH 5 A DAY logo and portion indicator is an example of an important part of this programme, and has been developed in consultation with industry, local and national health, education and consumer organisations, and through several stages of consumer research. Use of the logo and portion indicator have to comply with strict criteria which take into account portion size, as well as fat, sugar and salt levels.

The government's success in these campaigns may be reflected in the prevalence of obesity in England. It is the highest in the European Union (EU) and, in conjunction with this, the UK is seeing increased levels of diabetes. However, premature mortality rates from the two biggest killers, circulatory diseases and cancer, are reducing faster in England than the average for the EU (DoH 2007).

The Change4life campaign, published in 2008, focuses on promoting healthy behaviours in a 'Swap it – don't stop it' message aimed at overweight adults. The idea behind the message is not to give up the things you enjoy, but to consider a healthier option. There is a direct link between health promotion and preventive healthcare, where adults are supported because of their associated risk factors for ill health. The next section will discuss this in more detail.

Disease and illness

Disease and *illness* are terms that are often used interchangeably, but in fact they have different meanings. In general, nursing is concerned with illness, whereas medicine is concerned with disease.

DISEASE

Disease (literally meaning 'without ease') is a medical term describing alterations in structure and function of the body or mind. Diseases may have mechanical, biologic or normative causes, and some common causes are listed in Box 1.9. Mechanical

Box 1.9

Causes of disease

The following are generally accepted as common causes of disease:

- genetic defects;
- developmental defects resulting from exposure to viruses, chemicals or drugs that affect the developing foetus;
- biologic agents or toxins (including viruses, bacteria, fungi, etc.);
- physical agents such as temperature extremes, radiation and electricity;
- chemical agents such as alcohol, drugs, strong acids or bases, and heavy metals;
- generalised response of tissues to injury or irritation;
- alterations in the production of antibodies, resulting in allergies or hypersensitivities;
- faulty metabolic processes (e.g., a production of hormones or enzymes above or below normal);
- continued stress.

Table 1.2 Disease classifications and definitions

Classification	Definition
Acute	A disease that has a rapid onset, lasts a relatively short time and is self-limiting
Chronic	A disease that has one or more of these characteristics: (1) is permanent, (2) leaves permanent disability, (3) causes non-reversible patho-physiology, (4) requires special training of the person for rehabilitation, (5) requires a long period of care
Communicable	A disease that can spread from one person to another
Congenital	A disease or disorder that exists at or before birth
Degenerative	A disease that results from deterioration or impairment of organs or tissues
Functional	A disease that affects function or performance but does not have signs and symptoms of organic illness
Malignant	A disease that tends to become worse and cause death
Psychosomatic	A psychological disease that is manifested by physiological symptoms
Idiopathic	A disease that has an unknown cause
Iatrogenic	A disease that is caused by medical intervention

causes of disease result in damage to the structure of the body and are the result of trauma or extremes of temperature. Biologic causes of disease affect body function and are the result of genetic defects, the effects of ageing, infestation and infection, alterations in the immune system and alterations in normal organ secretions. The cause of many diseases is still unknown.

Diseases may be classified as acute or chronic, communicable, congenital, degenerative, functional, malignant, psychosomatic, idiopathic or iatrogenic (see Table 1.2). In all types of disease, alterations in structure or function cause signs and symptoms that prompt a person to seek treatment. Although both subjective symptoms and objective signs commonly appear with disease, objective signs often predominate. Examples of objective signs include bleeding, vomiting, diarrhoea, limitation of movement, swelling, visual disturbances and changes in elimination. However, pain (a subjective symptom) is often the primary reason that prompts a person to seek healthcare.

ILLNESS

Illness is the response a person has to a disease. This response is highly individualised, because the person responds not only to his or her own perceptions of the disease but also to the perceptions of others. Illness integrates patho-physiological alterations; psychological effects of those alterations; effects on roles, relationships and values; and cultural and spiritual beliefs. A person may have a disease and not categorise himself or

IN PRACTICE



A sequence of illness behaviours

1. *Experiencing symptoms.* In the first stage of an acute illness, a person experiences one or more signs and symptoms that serve as cues for an awareness that a change in normal health is occurring. The most significant manifestation is pain. Examples of other symptoms that signal an illness are bleeding, swelling, fever or difficulty with breathing. If the signs and symptoms are mild or are familiar (such as symptoms of the common cold or influenza), the person usually uses over-the-counter medications or a traditional remedy for self-treatment. If the symptoms are relieved, no further action is taken; however, if the symptoms are severe or become worse, the person moves to the next stage.
2. *Assuming the sick role.* In the second stage, the person assumes the sick role. This role assumption signals acceptance of the symptoms as proof that an illness is present. The person usually validates this belief with others and seeks support for the need to have professional treatment or to stay at home from school or work. Self-preoccupation is characteristic of this stage, and the person focuses on alterations in function resulting from the illness. If the illness is resolved, the person validates a return to health with others and resumes normal activities; however, if signs and symptoms remain or increase in severity and others agree that no improvement has occurred, the person moves to the next stage by seeking medical care.
3. *Seeking medical care.* In our society, a doctor or other healthcare provider most often provides validation of illness. People who believe they are ill (and who are encouraged by others to contact a healthcare provider) seek medical contact for diagnosis, prognosis and treatment of the illness. If the medical diagnosis is of an illness, the person moves to the next stage. If the medical diagnosis does not support illness, the individual may return to normal functioning or may seek validation from a different healthcare provider.
4. *Assuming a dependent role.* The stage of assuming a dependent role begins when a person accepts the diagnosis and planned treatment of the illness. As the severity of the illness increases, so does the dependent role. It is during this stage that the person may enter the hospital for treatment and care. The responses of the person to care depend on many different variables: the severity of the illness, the degree of anxiety or fear about the outcome, the loss of roles, the support systems available, individualised reactions to stress and previous experiences with illness care.
5. *Achieving recovery and rehabilitation.* The final stage of an acute illness is recovery and rehabilitation. Institutional healthcare focuses on the acute care needs of the ill person, with recovery beginning in the hospital and completed at home. This focus makes person education and continuity of care a major goal for nursing. It has also contributed to the shift in settings for nursing care, with increasing numbers of nurses providing care in community settings and the home. The person now gives up the dependent role and resumes normal roles and responsibilities. As a result of education during treatment and care, the person may be at a higher level of wellness after recovery is complete. There is no set timetable for recovery from an illness. The degree of severity of the illness and the method of treatment both affect the length of time required, as does the person's compliance with treatment plans and motivation to return to normal health.

Source: based on Suchman 1972.

herself as ill, or may validate feelings of illness through the comments of others ('You don't look as though you feel well today').

Acute illness

An **acute illness** occurs rapidly, lasts for a relatively short time and is self-limiting. The problem responds to self-treatment or to medical–surgical intervention. People with uncomplicated acute illnesses usually recover and return to normal functioning.

Illness behaviours are the ways people cope with the alterations in health and function caused by a disease. Illness behaviours are highly individualised and are influenced by age, gender, family values, economic status, culture, educational level and mental status. The study of illness behaviour has shaped our understanding of how persons might react when they are ill. The study summarised in the In Practice box is dated but is still a valuable source of evidence to inform nurses of how persons behave in contemporary society.

Chronic illness

Chronic illness is a term that encompasses many different lifelong pathological and psychological alterations in health. Current trends affecting an increased incidence of chronic illnesses include diseases of ageing, diseases of lifestyle and behaviour and environmental factors. Chronic illness can be characterised by impaired function in more than one body system; responses to this impaired function may occur in sensory perception, self-care abilities, mobility, cognition and social skills. The demands on the individual and family as a result of these responses are often lifelong.

The intensity of a chronic illness and its related signs and symptoms range from mild to severe, and the illness is usually characterised by periods of remission and exacerbation. During periods of remission, the person does not experience symptoms, even though the disease is still clinically present. During periods of exacerbation, the symptoms reappear.

These periods of change in symptoms do not appear in all chronic diseases.

Each person with a chronic illness has a unique set of responses and needs. The response of the person to the illness is influenced by the following factors:

- the point in the life-cycle at which the onset of the illness occurs;
- the type and degree of limitations imposed by the illness;
- the visibility of impairment or disfigurement;
- the pathophysiology causing the illness;
- the relationship between the impairment and functioning in social roles;
- pain and fear.

These factors are highly complex. They are interrelated within each person, resulting in individualised illness behaviours and needs. Because there are so many different chronic diseases and because the experience of each person with the illness is a composite of individualised responses, it is difficult to generalise about needs.

In the Fast Facts box, Miller (2000) uses the term 'comply' to describe how people with chronic illness should adhere to medical advice (e.g. correctly taking medication, or following instructions for a healthy diet). Literature to investigate why individuals may or may not comply will often use a combination of the terms adherence, compliance and **concordance** to describe this behaviour.

Concordance has been defined as 'a new approach to the prescribing and taking of medicines' (Medicines Partnership 2003). An agreement is reached after negotiation between the individual and healthcare professional. This implies

acknowledgement of the person's rights, beliefs and wishes when determining whether, how and when medicines are to be taken.

CARING FOR THE PSYCHOLOGICAL NEEDS OF ILL PEOPLE

Disease and illness can result in a high level of vulnerability and dependency in our persons, and nurses in the adult field of acute and ongoing care are ideally placed to support the psychological needs of those in their care. Many theorists identify two main elements of care: one is the need for practical and technical activities, and the other is focused on the way in which those activities are carried out by individual nurses.

In the case below, there is little consideration of the individual's need for information, or evidence of a kind approach, someone to listen and to provide basic reassurance in the initial time of arriving at the ward. It was not until the named nurse became involved that Wendy began to experience some degree of psychological support.

Psychological needs of adults who are experiencing health-care can be influenced by a variety of factors. For example, in the case study below, Wendy has limited understanding of the formal healthcare setting, and she has no experience of major illness. We cannot assume that her social and emotional support is effective, despite the presence of her husband. In this scenario, the culture and priorities of staff in the care setting can negatively influence the way Wendy perceives care provision.

FAST FACTS

Chronic illness

Almost all people with a chronic illness will need to:

- live as normally as possible, despite the symptoms and treatment that make the person with a chronic illness feel alienated, lonely and different from others without the illness;
- learn to adapt activities of daily living and self-care activities;
- grieve the loss of physical function and structure, income, status, roles and dignity;
- comply with a medical treatment plan;
- maintain a positive self-concept and a sense of hope;
- maintain a feeling of being in control;
- confront the inevitability of death.

Source: Miller 2000.

Case Study – Wendy



Return to Wendy at the beginning of the chapter. Wendy, aged 53, is scheduled for surgical investigations of possible malignancy (cancer). She is normally well, works in a supermarket and is an active woman with two grown up sons both away at university. Her husband is with her as she arrives to the surgical unit for admission. This is her first experience of hospital admission since she had her second son 19 years ago.

A healthcare assistant (HCA) hurriedly shows her to her bed and leaves her there. The ward is alive with activity but nobody acknowledges Wendy and she is unsure of what to do; her husband patiently waits outside of the ward.

Some two hours later another HCA asks Wendy what she ordered for her lunch and despite Wendy trying to explain that she has just arrived that day, nobody listens. Wendy wanders out to look for her husband and eventually, some four hours after her arrival, a staff nurse comes to find her. Wendy is met with an awkward encounter as the staff nurse implies that the bed that was allocated was nearly given over to someone else and that Wendy should have arrived on time!

It is not until Wendy's named nurse sits down and introduces himself by name and role, and discusses fully what Wendy might expect that she begins to relax a little.

Individuals will differ in the amount and level of care needed, and their reactions may range from stress and distress to poor or prolonged recovery from illness. Adult nurses can offer their unique knowledge and skill coupled with good communication and a genuine empathic approach to support the emotional needs of individuals.

Tracey, Junior Sister, Women's Health Unit, said: 'From the first step onto the ward, patients should be made to feel welcome and encouraged to explore how they feel.'

HEALTH PROMOTION AND ILLNESS PREVENTION

Consider this . . .

Prevention is better (and cheaper) than cure!

Securing Good Health for the Whole Population (written by Sir Derek Wanless and published by HM Treasury in February 2004) set out a challenge to move towards a 'fully engaged scenario' in which most people were taking active steps to improve their own health. The document made it clear that increases in NHS funding would be cancelled out by increasing numbers of people with chronic diseases and largely preventable ill health unless we can reach this position. The potential cost of inaction was said in the review to run to a staggering £187 billion.

Cutting costs in healthcare provision can be interpreted as a classic reason for preventative medicine (Tones and Tilford 2001).

Health promotion and illness prevention has at its core the focus of improving people's health and quality of life. Health promotion is concerned with promoting health at all levels, from the individual to society and indeed worldwide (as evidenced by the onset of global 'swine flu' in 2009). The Ottawa Charter (1989) presented a practical approach to health promotion by identifying five key strategies (WHO 1986):

- reorienting health services;
- developing personal skills;
- building a healthy public policy;
- strengthening community action;
- creating supportive environments for health.

Health promotion and illness prevention have become an important aspect of public health policy. Key areas of prevention, derived from evidence of epidemiology, have focused the UK government in their plans to reduce morbidity (the incidence of illness) and mortality (the incidence of death from illness). An example of this is the *Saving Lives: Our Healthier Nation* campaign (DoH 1999), which suggests that a reduction in smoking and the adoption of a diet rich in fruit, vegetables and cereals would reduce the number of deaths from cancer by 10% in people under the age of 75.

Saving Lives: Our Healthier Nation (DoH 1999) was the government's action plan for tackling poor health by improving the health of everyone, the economically worst off in particular. 'Our Healthier Nation' looked at a new approach to saving lives and at the aims and advances in public health. It also discussed individuals and health and tackling the wider causes of ill health within communities. 'Saving Lives' dealt with the specific issues of cancer, coronary heart disease and stroke, accidents and mental health. These are deemed to be the major causes of morbidity and mortality and the most responsive to prevention. It also looked at wider issues such as sexual health, tackling drug and alcohol problems, communicable disease, genetics and improving ethnic minorities' health. The Marmot Review (Marmot *et al.* 2010) is a review of health inequalities in England that demonstrates the link between the hierarchy of social class and the prevalence of disease.

As nurses, we promote health by teaching the activities that maintain wellness, by providing information about the characteristics and consequences of diseases when risk factors have been identified and by supplying specific information about decreasing risk factors.

The term 'prevention' implies an action to stop something, or act in a way that creates a barrier or an obstacle to events (in this case illness). Three levels of prevention are identified to classify interventions that promote health (see Table 1.3):

1. *Primary prevention* to reduce the onset of ill health.
2. *Secondary prevention* – early intervention to minimise illness.
3. *Tertiary prevention* to limit disability in established illness.

Behaviour and lifestyle have a profound effect on health and wellbeing. Having an understanding of this can help health promoters focus resources in the most efficient way (i.e. in terms of people and finance and the right kinds of tools). Health promotion activities that can harness elements of group behaviour can have value in the identification, prevention and management of illness. One way of doing this is health needs assessment.

HEALTH NEEDS ASSESSMENT

Health needs assessment is a systematic method of assessing the health issues faced by a particular population to provide evidence about a population on which to plan services and address health inequalities. Following assessment, priorities are agreed and resources allocated with the goal of improving health and reducing inequalities. Person involvement and partnership working across the voluntary, independent, health and social care sectors are key to this approach. Have a look at Box 1.10 for an example of effective insight into the health behaviour of men in the North West of England.

A wide range of lifestyle choices are marketed to people (this is referred to as 'social marketing'), but health itself has not been marketed. Previous attempts to sell a healthy lifestyle have been criticised by focus groups as being preachy, boring and too much like hard work. Promoting health on the principles that commercial markets use – making it something

Table 1.3 The preventive model of health

Level of prevention	Function of health promotion	Examples in nursing practice
Primary prevention Aims to prevent the development of existing disease and enable the person to return to his or her former state of health as soon as possible.	<i>Health education:</i> concerned with health behaviour to prevent future health problems. <i>Aims:</i> to promote the adoption of healthy behaviours. <i>Policy focus:</i> around legislation and fiscal measures, e.g. the law around compulsory seatbelts, health and safety legislation.	Promoting healthy lifestyles around diet, smoking, exercise, risky sexual behaviours and accident prevention. Other examples: immunisation, genetic screening and promoting infection control. Empowering people to make healthy choices.
Secondary prevention Aims to stop the disease process, prevent deterioration and return the affected individual to a useful place in society within the constraints of any disability.	<i>Health education:</i> concerned with illness behaviour, for example identifying those at risk from health breakdown. <i>Aims:</i> to support people in the uptake of screening services, adopt self-care activities and concord with any treatments offered. <i>Policy focus:</i> availability of and access to health services.	Supporting the provision of screening to identify the onset of disease, e.g. cervical cytology, screening for hypertension, measuring body mass index (BMI). Educating individuals in relation to their health status, the disease process and treatment options. Supporting concordance with treatments.
Tertiary prevention Aims to stop the disease process, prevent deterioration and return the affected individual to a useful place in society within the constraints of any disability.	<i>Health education:</i> concerned with sick role behaviour and adjustment to accept the effects of disease on the individual. <i>Aims:</i> to support individuals to adjust and concord with treatments and care, to resume lifestyle within the limitations of illness or disability and to provide terminal care when needed. <i>Policy focus:</i> the provision of and access to relevant health and social care.	Providing specific nursing care, this can include educating significant others in the provision of that care, e.g. family members. Supporting rehabilitation of people. Provision of effective end-of-life nursing care. Pain management.

Box 1.10**Health Promotion**

Humour drives home health behaviour change:

Knowsley's PITSTOP initiative helps men to get their health checked out.

Knowsley PCT and Knowsley Council employed insight effectively when raising awareness of health among local men aged 50–65 by encouraging and supporting positive behavioural change.

THE APPROACH

- First, desk research revealed some key insights: men don't like talking about their health, they are reluctant to go to a doctor and late diagnosis can be a factor in early death. The team then held focus groups, which revealed that any health campaign for this group must be hard-hitting, humorous and non-judgemental, and that NHS and local authority branding needed to be very subtle.
- A programme of health checks called PITSTOP was set up in 'non-health' venues (including pubs, social clubs,

community centres and workplaces) and publicised with a motoring-inspired publicity campaign. Spoof road signs carried the message 'Endangered species – it's never too late to get healthier' and 'Don't ignore the warning signs – get a free health check', and there was further ambient publicity in the form of beer mats, washroom posters, stickers, pens, stress toys and car air fresheners.

OUTCOMES AND LEARNING

- Over 3000 local men had health checks, with 85% of them reporting lifestyle changes some weeks later.
- Awareness of men's health campaigns was shown to have increased overall. Major long-term social marketing-driven programmes in adult stop smoking services, cardiovascular disease prevention services and a range of other public health and corporate business areas are now under way as a result of the success of PITSTOP.

Source: DoH 2008.

Table 1.4 Theories of adult development

	Theorist	Age	Task
Psychosocial development	Erikson	18–25	<ul style="list-style-type: none"> • Identity versus role confusion. • Establishing an intimate relationship with another person. • Committing oneself to work and to relationships.
		25–65	<ul style="list-style-type: none"> • Generativity versus stagnation. • Accepting one's own life as creative and productive. • Having concern for others.
		65–death	<ul style="list-style-type: none"> • Integrity versus despair. • Accepting worth of one's own life. • Accepting inevitability of death.
Spiritual development	Fowler	After 18	<ul style="list-style-type: none"> • Having a high degree of self-consciousness. • Constructing one's own spiritual system.
		After 30	<ul style="list-style-type: none"> • Being aware of truth from a variety of viewpoints.
	Westerhoff	Young adult	<ul style="list-style-type: none"> • Searching faith. • Acquiring a cognitive and an affective faith through questioning one's own faith.
		Middle–older adult	<ul style="list-style-type: none"> • Owned faith. • Putting faith into action and standing up for beliefs.
Moral development	Kohlberg	Adult	<ul style="list-style-type: none"> • Post-conventional level. • Social contract/legalistic orientation. • Defining morality in terms of personal principles. • Adhering to laws that protect the welfare and rights of others. • Universal ethical principles. • Internalising universal moral principles. • Respecting others; believing that relationships are based on mutual trust.
Developmental tasks	Havighurst	18–35	<ul style="list-style-type: none"> • Selecting and learning to live with a mate. • Starting a family and rearing children. • Managing a home. • Starting an occupation. • Taking on civic responsibility. • Finding a congenial social group.
		35–60	<ul style="list-style-type: none"> • Achieving civic and social responsibility. • Establishing and maintaining an economic standard of living. • Assisting teenage children in becoming responsible and happy adults. • Developing leisure-time activities. • Relating to one's spouse as a person. • Accepting and adjusting to the physiologic changes of middle age. • Adjusting to ageing parents.
		60 and over	<ul style="list-style-type: none"> • Meeting civic and social obligations. • Establishing an affiliation with one's own age group. • Establishing satisfactory physical living arrangements. • Adjusting to decreasing physical strength, health, retirement, reduced income, death of spouse.

Sources: Erickson 1963, Fowler 1981, Havighurst 1972, Kohlberg 1979, Westerhoff 1976.

people aspire to and making healthy choices enjoyable and convenient – will, it is felt, create a stronger demand for health.

An example of this is the government's response to the rise in obesity in the UK. The 'Change 4 Life–Eat well, Move more, Live longer' campaign aims to inspire a societal movement in which individuals, groups and health organisations can play a part.

Meeting the health needs of adults

The adult years commonly are divided into three stages: the young adult (ages 18–40), the middle adult (ages 40–65) and the older adult (over age 65). Although developmental markers are not as clearly delineated in the adult as in the infant or child, specific changes do occur with ageing in intellectual, psychosocial and spiritual development, as well as in physical structures and functions.

The developmental theories specific to the adult, with related stages and tasks, are listed in Table 1.4. Applying a variety of developmental theories is important to the holistic care of the adult client as nurses perform assessments, implement care and provide teaching.

THE YOUNG ADULT

From ages 18–25, the healthy young adult is at the peak of physical development. All body systems are functioning at maximum efficiency, and the main risks to health are those listed in Box 1.11. Then, during the 30s, some normal physiological changes begin to occur (see Table 1.5).

Assessment guidelines

The following guidelines are useful in assessing the achievement of significant developmental tasks in the young adult. Does the young adult:

- feel independent from parents?
- have a realistic self-concept?
- like oneself and the direction in which life is going?
- interact well with family?
- cope with the stresses of constant change and growth?
- have well-established bonds with significant others, such as marriage partners or close friends?
- have a meaningful social life?
- have a career or occupation?
- demonstrate emotional, social and economic responsibility for own life?
- have a set of values that guide behaviour?
- have a healthy lifestyle?

Physical assessment of the young adult includes height and weight, blood pressure and vision. During the health history, the nurse should ask specific questions about substance use,

Box 1.11

Risks for alterations in health in young adults age 18–25 years

The young adult is at risk for alterations in health from accidents, sexually transmitted infections, substance abuse and physical or psychosocial stressors. These risk factors may be interrelated and include injuries, sexually transmitted infections, substance abuse, physical and psychological stressors outlined below.

INJURIES

Unintentional injuries are the leading cause of injury and death in people between ages 15 and 24. Most injuries and fatalities occur as the result of motor vehicle crashes; but injuries and death also result from assaults, drowning, fire, guns, occupational accidents and exposure to environmental hazards. Accidental injury or death is often associated with the use of alcohol or other chemical substances, or with psychological stress.

SEXUALLY TRANSMITTED INFECTIONS

Sexually transmitted infections include genital herpes, chlamydia, gonorrhoea, syphilis and HIV/AIDS. The young adult who is sexually active with a variety of partners and who does not use condoms is at greatest risk for development of these diseases. Nursing care of clients with sexually transmitted infections is discussed in Chapter 17.

SUBSTANCE ABUSE

Substance abuse is a major cause for concern in the young adult population. Although alcohol abuse occurs at all ages, it is greater in the 20s than during any other decade of the lifespan. Heavy drinking (exceeding a daily intake of eight units for men and six for women) was most common in the 16–24 and 25–44 age groups (ONS 2010b). Alcohol contributes to motor vehicle crashes and physical violence, and it is damaging to the developing foetus in pregnant women. It can also cause liver disease and nutritional deficits. Other substances that are commonly abused include nicotine, marijuana, amphetamines, cocaine and crack. Smoking increases the risk of respiratory and cardiovascular diseases. Cocaine and crack can cause death from cardiovascular effects (increased heart rate and ventricular arrhythmias), and can lead to addiction and health problems in the baby born to an addicted mother.

PHYSICAL AND PSYCHOSOCIAL STRESSORS

Physical stressors that increase the risk of illness include environmental pollutants and work-related risks (e.g., electrical hazards, mechanical injuries or exposure to toxins or infectious agents). Other physical stressors include exposure to the sun, ingestion of chemical substances (e.g., caffeine, alcohol, nicotine) and pregnancy.

sexual activity and concerns, exercise, eating habits, menstrual history and patterns, coping mechanisms, any familial chronic illnesses and family changes.

Table 1.5 Physical status and changes in the young adult years

Assessment	Status during the 20s	Status during the 30s
Skin	Smooth, even temperature	Wrinkles begin to appear
Hair	Slightly oily, shiny Balding may begin	Greying may begin Balding may begin
Vision	Snellen 20/20	Some loss of visual acuity and accommodation
Musculoskeletal	Strong, coordinated	Some loss of strength and muscle mass
Cardiovascular	Maximum cardiac output 60–90 beats/min Mean BP: 120/80	Slight decline in cardiac output 60–90 beats/min Mean BP: 120/80
Respiratory	Rate: 12–20 Full vital capacity	Rate: 12–20 Decline in vital capacity

THE MIDDLE ADULT

The middle adult, ages 40–65, has physical status and function similar to that of the young adult. However, many changes take place between ages 40 and 65. Table 1.6 lists the physical changes that normally occur in the middle years, and the main risks to health are those shown in Box 1.12.

NHS health checks for the middle adult

NHS health checks are being made available across the country for all 40–74-year-olds. These will check an individual's risk of heart disease, stroke, diabetes and kidney disease, and will offer support in reducing or managing that risk, with the necessary lifestyle advice and effective interventions (such as NHS Stop Smoking Services or weight management programmes) or through medication. This is a world-leading programme to prevent heart disease, stroke, diabetes and chronic kidney disease. The programme will save thousands of lives by preventing stroke and heart attacks, and at least 4000 people will not develop diabetes as a result. It is expected that some one million checks will have been performed by the end of 2011, with complete roll-out planned by 2012/13. Around three million persons will be checked every year (DoH 2009a, 26).

Assessment guidelines

The following guidelines are useful in assessing the achievement of significant developmental tasks in the middle adult. Does the middle adult:

Table 1.6 Physical changes in the middle adult years

Assessment	Changes
Skin	<ul style="list-style-type: none"> Decreased moisture and subcutaneous fat result in wrinkles. Fat is deposited in the abdominal and hip areas.
Hair	<ul style="list-style-type: none"> Loss of melanin in hair shaft causes greying. Hairline recedes in males.
Sensory	<ul style="list-style-type: none"> Visual acuity for near vision decreases (presbyopia) during the 40s. Auditory acuity for high-frequency sounds decreases (presbycusis); more common in men. Sense of taste diminishes.
Musculoskeletal	<ul style="list-style-type: none"> Skeletal muscle mass decreases by about age 60. Thinning of inter-vertebral discs results in loss of height (about 2.5 cm [1 inch]). Postmenopausal women may have loss of calcium and develop osteoporosis.
Cardiovascular	<ul style="list-style-type: none"> Blood vessels lose elasticity. Systolic blood pressure may increase.
Respiratory	<ul style="list-style-type: none"> Loss of vital capacity (about 1 L from age 20–60) occurs.
Gastrointestinal	<ul style="list-style-type: none"> Large intestine gradually loses muscle tone; constipation may result. Gastric secretions are decreased.
Genitourinary	<ul style="list-style-type: none"> Hormonal changes occur: menopause, women (↓oestrogen); andropause, men (↓testosterone).
Endocrine	<ul style="list-style-type: none"> Gradual decrease in glucose tolerance occurs.

Box 1.12

Risks for alterations in health in the middle adult

The middle adult is at risk for alterations in health from obesity, cardiovascular disease, cancer, substance abuse and physical and psychosocial stressors. These factors may be interrelated.

OBESITY

The middle adult often has a problem maintaining a healthy weight. Weight gain in middle adulthood is usually the result of continuing to consume the same number of calories while decreasing physical activity and experiencing a decrease in basal metabolic rate. Obesity affects all of the major organ systems of the body, increasing the risk of atherosclerosis, hypertension, elevated cholesterol and triglyceride levels and diabetes. Obesity is also associated with heart disease, osteoarthritis and gallbladder disease.

CARDIOVASCULAR DISEASE

The major risk factors, especially for coronary artery disease, include age, male gender, physical inactivity, cigarette smoking, hypertension, elevated blood cholesterol levels and diabetes. Other contributing factors include obesity, stress and lack of exercise. The middle adult is at risk for peripheral vascular, cerebrovascular and cardiovascular disease.

CANCER

The Office for National Statistics (ONS) reports that 'Rates of cancer rose more quickly with age in females than in males up to the 50–54 age group. In the 40–44 age group, the rate in females was more than double that for males' (ONS 2010a).

Cancers of the breast, colon, lung and reproductive system are common in the middle years. The middle adult is at risk for cancer as a result of increased length of exposure to environmental carcinogens, as well as alcohol and nicotine use.

SUBSTANCE ABUSE

Although the middle adult may abuse a variety of substances, the most commonly abused are alcohol, nicotine and prescription drugs. Excess alcohol use in the middle adult contributes to an increased risk of liver cancer, cirrhosis, pancreatitis, hyperlipidaemia and anaemia. Alcoholism also increases the risk of accidental injury or death and disrupts careers and relationships. Cigarette smoking increases the risk of cancer of the larynx, lung, mouth, pharynx, bladder, pancreas, oesophagus and kidney; of chronic obstructive pulmonary disorders; and of cardiovascular disorders.

PHYSICAL AND PSYCHOSOCIAL STRESSORS

The middle adult years are ones of change and transition, frequently resulting in stress. Both men and women must adapt to changes in physical appearance and function and accept their own mortality. Children may leave home or choose to remain at home longer than they are welcome. Parents are ageing, with illness probable and death inevitable. The middle adult thus becomes caught between the need to care for both children and ageing parents. Both men and women may make career changes, and approaching retirement becomes a reality. Divorce in the middle years is a major emotional, social and financial stressor.

- accept the ageing body?
- feel comfortable with and respect him- or herself?
- enjoy some new freedom to be independent?
- accept changes in family roles?
- enjoy success and satisfaction from work and/or family roles?
- interact well and share companionable activities with a partner?
- expand or renew previous interests?
- pursue charitable and altruistic activities?
- consider plans for retirement?
- have a meaningful philosophy of life?
- follow preventive healthcare practices?

Physical assessment of the middle adult includes all body systems, including blood pressure, vision and hearing. Monitoring for risks and onset of cancer symptoms is essential. During the health history, the nurse should ask specific questions about food intake and exercise habits, substance abuse, sexual concerns, changes in the reproductive system, coping mechanisms and family history of chronic illnesses.

FAST FACTS**Body mass index**

In the Health Survey for England (DoH 2003) overweight and obesity is measured in terms of body mass index or BMI. BMI is a widely accepted measure of weight for height and is defined as:

$$\text{weight (kg)} / (\text{height (m)})^2$$

Height and weight data used to calculate BMI are collected in each year of the Health Survey. Adult informants can be classified into the following BMI groups:

BMI (kg/m ²)	Description
18.5 or less	Underweight
Over 18.5–25	Normal
Over 25–30	Overweight
Over 30	Overweight

However, BMI does not distinguish between mass due to body fat and mass due to muscular physique. It also does not take account of the distribution of fat.

THE OLDER ADULT (OVER 65)

Consider this . . .

Life expectancy at birth in the UK has reached its highest level on record for both males and females. A newborn baby boy could expect to live 77.4 years and a newborn baby girl 81.6 years if mortality rates remain the same as they were in 2006–08.

As far back as 1875, in Britain, the Friendly Societies Act enacted the definition of old age as ‘any age after 50’, yet pension schemes mostly used age 60 or 65 years for eligibility. The increase in numbers of older adults has important implications for nursing. People needing healthcare in all settings will be older, requiring nursing interventions and teaching specifically designed to meet needs that differ from those of young and middle adults. Although care of the older adult is a nursing specialty area, it is also an integral component of acute and ongoing care in adult nursing. Life expectancy from birth continues to improve across England for both men and

women, but there is still a wide variation across the country. Table 1.7 lists the physical changes that normally occur in the older years and some of the risks to health associated with older adults are shown in Box 1.13.

The National Service Framework for Older People

The National Service Framework (NSF) for Older People (DoH 2001) sets national standards and service models of care across health and social services for all older people, whether they live at home, in residential care or are being looked after in hospital. It was developed to deliver improved lives for older people and greater value for money. Work to redesign services and systems incorporates five key areas:

- early intervention for old age problems;
- streaming to specialist care in crisis situations;
- early transfer to the community for rehabilitation in intermediate care;
- multidisciplinary assessment prior to care home placement;
- partnership working across health and social care.

Box 1.13

Risks for alterations in health in the older adult

The older adult is at risk for alterations in health from a variety of causes. Most older adults have one chronic health problem, while many have multiple illnesses. The most frequently occurring problems in the older adult are hypertension, arthritis, heart diseases, cancer, respiratory disease and diabetes. The leading causes of death are heart disease, cancer and stroke. Like the middle adult, the older adult is at risk for alterations in health from obesity and a sedentary lifestyle. Other risk factors specific to this age group include accidental injuries, pharmacologic effects and physical and psychosocial stress.

INJURIES

Injuries in the older adult cause many different problems: illness, financial burdens, hospitalisation, self-care deficits, loss of independence and even death. The risk of injury is increased by normal physiologic changes that accompany ageing, pathophysiological alterations in health, environmental hazards and lack of support systems. The three major causes of injury in the older adult are falls, fires and motor vehicle crashes. Of these, falls with resultant hip fractures are the most significant in terms of long-term disability and death.

PHARMACOLOGIC EFFECTS

A number of risk factors predispose the older adult to experiencing drug toxicity. Age-related changes in tissue and organ structure and function alter the absorption of both oral and parenteral medications. Low nutritional levels and decreased liver function may alter drug metabolism. The ageing

kidney may not excrete drugs at the normal clearance rate. Self-administration of both prescribed and over-the-counter medications presents risks for error resulting from confusion, forgetfulness or misreading the directions. The older adult may take several drugs at once, and it is difficult to know how drugs interact with each other.

PHYSICAL AND PSYCHOSOCIAL STRESSORS

The older adult is exposed to the same environmental hazards as the young and middle adult, but the accumulation of years of exposure may now appear. For example, exposure to the sun in earlier years may be manifested by skin cancer, and the long-term effects of exposure to noise pollution can result in impaired hearing. The older adult (especially the older male) is at increased risk for respiratory disorders as a result of years of smoking, or from such pollutants as coal or asbestos dust. Living problems and economic constraints may prevent the older adult from having necessary heating and cooling, contributing to thermal-related illnesses and even death. Elder abuse and neglect further increase the risk of injury or illness.

Psychosocial stressors for the older adult include the illness or death of a spouse, decreased or limited income, retirement and isolation from friends and family because of lack of transportation or distance, return to the home of a child or relocation to a long-term healthcare facility. A further stressor may be role loss or reversal – for example, when the wife becomes the caretaker of her chronically ill husband.

Table 1.7 Physical changes in the older adult years

Assessment	Changes
Skin	<ul style="list-style-type: none"> Decreased sebaceous gland activity results in dry, wrinkled skin. Melanocytes cluster, causing 'age spots' or 'liver spots'.
Hair and nails	<ul style="list-style-type: none"> Scalp, axillary and pubic hair thins; nose and ear hair thickens. Women may develop facial hair. Nails grow more slowly; may become thick and brittle.
Sensory	<ul style="list-style-type: none"> Visual field narrows and depth perception is distorted. Pupils are smaller, reducing night vision. Lenses yellow and become opaque, resulting in distortion of green, blue and violet tones and increased sensitivity to glare. Production of tears decreases. Sense of smell decreases. Age-related hearing loss progresses, involving middle- and low-frequency sounds. Threshold for pain and touch increases. Alterations in proprioception (sense of physical position) may occur.
Musculoskeletal	<ul style="list-style-type: none"> Loss of overall mass, strength and movement of muscles occurs; tremors may occur. Loss of bone structure and deterioration of cartilage in joints results in increased risk of fractures and in limitation of range of motion.
Cardiovascular	<ul style="list-style-type: none"> Systolic blood pressure rises. Cardiac output decreases. Peripheral resistance increases, and capillary walls thicken.
Respiratory	<ul style="list-style-type: none"> Continued loss of vital capacity occurs as the lungs become less elastic and more rigid. Anteroposterior chest diameter increases; kyphosis. Although blood carbon dioxide levels remain relatively constant, blood oxygen levels decrease by 10–15%.
Gastrointestinal	<ul style="list-style-type: none"> Production of saliva decreases, and decreased number of taste buds decrease accurate receptors for salt and sweet. Gag reflex is decreased, and stomach motility and emptying are reduced. Both large and small intestines have some atrophy, with decreased peristalsis. The liver decreases in weight and storage capacity; gallstones increase; pancreatic enzymes decrease.
Genitourinary	<ul style="list-style-type: none"> Kidneys lose mass, and the glomerular filtration rate is reduced (by nearly 50% from young adulthood to old age). Bladder capacity decreases, and the micturition reflex is delayed. Urinary retention is more common. Women may have stress incontinence; men may have an enlarged prostate gland. Reproductive changes in men occur: <ul style="list-style-type: none"> testosterone decreases. sperm count decreases. testes become smaller. length of time to achieve an erection increases; erection is less full. Reproductive changes in women occur: <ul style="list-style-type: none"> oestrogen levels decrease. breast tissue decreases. vagina, uterus, ovaries and urethra atrophy. vaginal lubrication decreases. vaginal secretions become alkaline.
Endocrine	<ul style="list-style-type: none"> Pituitary gland loses weight and vascularity. Thyroid gland becomes more fibrous, and plasma T₃ decreases. Pancreas releases insulin more slowly; increased blood glucose levels are common. Adrenal glands produce less cortisol.

The NSF leads with plans to:

- tackle age discrimination to make it a thing of the past, and ensure older people are treated with respect and dignity;
- ensure older people are supported by newly integrated services with a well-coordinated, coherent and cohesive approach to assessing individuals' needs and circumstances and for commission and providing services for them;
- specifically address those problems which are particularly significant for older people – stroke, falls and mental health problems associated with older age;
- promote the health and wellbeing of older people through coordinated actions of the NHS and councils.

Assessment guidelines

The following guidelines are useful in assessing the achievement of significant developmental tasks in the older adult. Does the older adult:

- adjust to the physiologic changes related to ageing?
- manage retirement years in a satisfying manner?
- have satisfactory living arrangements and income to meet changing needs?
- participate in social and leisure activities?
- have a social network of friends and support persons?
- view life as worthwhile?
- have high self-esteem?
- have the abilities to care for self or to secure appropriate help?
- gain support from a value system or spiritual philosophy?
- adapt lifestyle to diminishing energy and ability?
- accept and adjust to the death of significant others?

Physical assessment of the older adult includes a careful examination of all body systems. During the health history, the nurse should ask specific questions about usual dietary patterns; elimination; exercise and rest; use of alcohol, nicotine, over-the-counter medications and prescription drugs; sexual concerns; financial concerns; and support systems.

The family

DEFINITIONS AND FUNCTIONS OF THE FAMILY

The definitions of a family are changing as society changes. A family is composed of two or more people who are emotionally involved with each other and live in close geographical proximity. In a global society, it may not be possible for family members to live in close proximity, but they do remain emotionally involved.

Although every family is unique, all families have certain structural and functional features in common. Family structure (family roles and relationships) and family function (interactions among family members and with the community) provide the following:

- *Interdependence.* The behaviours and level of development of individual family members constantly influence and are influenced by the behaviours and level of development of all other members of the family.
- *Maintaining boundaries.* The family creates boundaries that guide its members, providing a distinct and unique family culture. This culture, in turn, provides values.
- *Adapting to change.* The family changes as new members are added, current members leave and the development of each member progresses.
- *Performing family tasks.* Essential tasks maintain the stability and continuity of the family. These tasks include physical maintenance of the home and the people in the home, the production and socialisation of family members and the maintenance of the psychological wellbeing of members.

FAMILY DEVELOPMENTAL STAGES AND TASKS

The family, like the individual, has developmental stages and tasks. Each stage brings change, requiring adaptation; each new stage also brings family-related risk factors for alterations in health. The nurse must consider the needs of the person both at a specific developmental stage and within a family with specific developmental tasks. Family developmental stages and developmental tasks are described next; related risk factors and health problems for each stage are listed in Table 1.8.

Family with adolescents and young adults

The developmental tasks of the family with adolescents and young adults focus on transition. While providing a supportive home base and maintaining open communications, parents must balance freedom with responsibility and release adult children as they seek independence.

Family with middle adults

The family with middle adults (in which the parents are middle-aged and children are no longer at home) has the developmental tasks of maintaining ties with older and younger generations and planning for retirement. If the family consists of just the middle-aged couple, they have the developmental task of re-establishing the relationship and (if necessary) acquiring the role of grandparents.

Family with older adults

The older adult family has the developmental tasks of adjusting to retirement, adjusting to ageing and coping with the loss

Table 1.8 Family-related risk factors for alterations in health

Stage	Risk factors	Health problems
Couple or family with infants and preschoolers	<ul style="list-style-type: none"> • Lack of knowledge about family planning, contraception, sexual and marital roles. • Inadequate prenatal care. • Altered nutrition: inadequate nutrition, overweight, underweight. • Smoking, alcohol/drug abuse. • First pregnancy before age 16 or after age 35. • Low socioeconomic status. • Lack of knowledge about child health and safety. • Rubella, syphilis, gonorrhoea, AIDS. 	<ul style="list-style-type: none"> • Premature pregnancy. • Low-birth-weight infant. • Birth defects. • Injury to infant or child. • Accidents.
Family with school-age children	<ul style="list-style-type: none"> • Unsafe home environment. • Working parents with inappropriate or inadequate resources for child care. • Low socioeconomic status. • Child abuse or neglect. • Multiple, closely spaced children. • Repeated infections, accidents and hospitalisations. • Unrecognised and unattended health problems. • Poor or inappropriate nutrition. • Toxic substances in the home. 	<ul style="list-style-type: none"> • Behaviour problems. • Speech and vision problems. • Learning disabilities. • Communicable diseases. • Physical abuse. • Cancer. • Developmental delay. • Obesity, underweight.
Family with adolescents and young adults	<ul style="list-style-type: none"> • Family values of aggressiveness and competition. • Lifestyle and behaviour leading to chronic illness (substance abuse, inadequate diet). • Lack of problem-solving skills. • Conflicts between parent and children. 	<ul style="list-style-type: none"> • Violent death and injury. • Alcohol/drug abuse. • Unwanted pregnancy. • Suicide. • Sexually transmitted infections. • Domestic abuse.
Family with middle adults	<ul style="list-style-type: none"> • High-cholesterol diet. • Overweight. • Hypertension. • Smoking, alcohol abuse. • Physical inactivity. • Personality patterns related to stress. • Exposure to environment: sunlight, radiation, asbestos, water or air pollution. • Depression. 	<ul style="list-style-type: none"> • Cardiovascular disease (coronary artery disease and cerebral vascular disease). • Cancer. • Accidents. • Suicide. • Mental illness.
Family with older adults	<ul style="list-style-type: none"> • Age. • Depression. • Drug interactions. • Chronic illness. • Death of spouse. • Reduced income. • Poor nutrition. • Lack of exercise. • Past environment and lifestyle. 	<ul style="list-style-type: none"> • Impaired vision and hearing. • Hypertension. • Acute illness. • Chronic illness. • Infectious diseases (influenza, pneumonia). • Injuries from burns and falls. • Depression. • Alcohol abuse.

of a spouse. If a spouse dies, further tasks include adjusting to living alone or closing the family home.

THE FAMILY OF THE PERSON WITH A CHRONIC ILLNESS

The person with a chronic illness may be hospitalised for diagnosis and treatment of acute exacerbations, but care is primarily provided at home. Chronic illness in a family member is a major stressor that may cause changes in family structure and function, as well as changes in performing family developmental tasks.

Many different factors affect family responses to chronic illness; family responses in turn affect the person's response to and perception of the illness. Factors influencing response to chronic illness include personal, social and economic resources; the nature and course of the disease; and demands of the illness as perceived by family members.

Support for the family is essential. The following information should be considered when performing any family assessment and developing a plan of care:

- cohesiveness and communication patterns within the family;
- family interactions that support self-care;
- number of friends and relatives available;
- family values and beliefs about health and illness;
- cultural and spiritual beliefs;
- developmental level of the person and family.

It is important to remember that standardised teaching plans may not be effective. Rather, individuals with chronic illnesses and their families should be given the freedom to choose appropriate literature, self-help or support groups and interactions with others who have the same illness.

The person undergoing surgical intervention

Case Study 1 – Wendy



You will recall Wendy Xin from earlier in the chapter (the case study). She is normally well, works in a supermarket and is an active woman with two grown up sons both away at university. This is her first experience of hospital admission since she had her second son 19 years ago. Wendy had previously attended a pre-operative assessment clinic where the nurse was able to assess her general health and to highlight any risk factors that might impact upon Wendy's recovery from surgery.

Surgery is an invasive procedure performed to diagnose or treat illness, injury or deformity. Throughout the process, the nurse assumes an active role in caring for the individual before, during and after surgery; this is referred to collectively as the peri-operative period. Interdisciplinary care and nursing care together prevent complications and promote optimal recovery. Interdisciplinary care refers to healthcare services provided by professionals in addition to physicians and surgeons, including nurses, pharmacists, social workers, technologists, dieticians, chaplains, physiotherapists and occupational therapists.

Peri-operative nursing is a specialised area of practice. It incorporates the three phases of the surgical experience: pre-operative, intra-operative and post-operative. The pre-operative phase begins when the decision for surgery is made and ends when the person is transferred to the operating room. The intra-operative phase begins with the person's entry into the operating room and ends with admittance to the recovery room. The post-operative phase begins with the person's admittance to the recovery room and ends with the individual's complete recovery from the surgical intervention.

SETTINGS FOR SURGERY

Surgical patients may be in-patients or out-patients. The complexity of the surgery and recovery and the expected recovery of the individual following the surgery are the major differences. Sometimes out-patients (i.e., people intending to be discharged home immediately following surgery) are admitted to the hospital. Cataract removal with or without lens implants, hernia repairs, tubal ligations, vasectomies, dilation and curettage (D&C), haemorrhoidectomies and biopsies are commonly performed in day-surgeries.

Table 1.9 shows how surgical procedures can be classified and, according to the table, Wendy's surgery would be termed 'diagnostic', intended to determine the cause of her medical problem. (To find out more about nursing the person with cancer, please refer to Chapter 2.)

INFORMED CONSENT

Consent is the principle that a person must give their permission before they receive any type of medical treatment. Consent is required from a patient regardless of the type of treatment being undertaken, from a blood test to an organ donation. Prior to receiving surgical care, Wendy must give her informed consent. The principle of consent is based on the following:

For consent to be valid, it must be:

- *Voluntary.* The decision to consent or not consent to treatment must be made alone, and must not be due to pressure by medical staff, friends or family.
- *Informed.* The person must be given full information about what the treatment involves, including the benefits and risks, whether there are reasonable alternative treatments, and what will happen if treatment does not go ahead.

Table 1.9 Classification of surgical procedures

	Classification	Function	Examples
Purpose	Diagnostic	Determine or confirm a diagnosis.	Breast biopsy, bronchoscopy.
	Ablative	Remove diseased tissue, organ, or extremity.	Appendectomy, amputation.
	Constructive	Build tissue/organs that are absent (congenital anomalies).	Repair of cleft palate.
	Reconstructive	Rebuild tissue/organ that has been damaged.	Skin graft after a burn, total joint replacement.
	Palliative	Alleviate symptoms of a disease (not curative).	Bowel resection in client with terminal cancer.
	Transplant	Replace organs/tissue to restore function.	Heart, lung, liver, kidney transplant.
Risk factor	Minor	Minimal physical assault with minimal risk.	Removal of skin lesions, dilation and curettage (D&C), cataract extraction.
	Major	Extensive physical assault and/or serious risk.	Transplant, total joint replacement, cholecystectomy, colostomy, nephrectomy.
Urgency	Elective	Suggested, though no foreseen ill effects if postponed.	Cosmetic surgery, cataract surgery, removal of bunions.
	Urgent	Necessary to be performed within one to two days.	Heart bypass surgery, amputation resulting from gangrene, fractured hip.
	Emergency	Performed immediately.	Obstetric emergencies, bowel obstruction, ruptured aneurysm, life-threatening trauma.

- **Capacity.** The person must be capable of giving consent, which means that they understand the information given to them, and they can use it to make an informed decision.

into two areas; health problems that increase surgical risk, and general factors that contribute to that risk. Table 1.10 highlights these.

RISK FACTORS FOR SURGERY

Risks are associated with all surgical interventions; these may be complex and involve high levels of blood loss and prolonged time under anaesthetic, increasing the risk for complication following surgery. The degree of risk can be categorised

PRACTICE ALERT

Remind people with diabetes that the stress of surgery increases rather than decreases blood sugar.

**Table 1.10** Factors and risks associated with surgery

Factor	Associated risk
Age	Older adults have age-related changes that affect physiologic, cognitive and psychosocial responses to the stress of surgery; decreased tolerance of general anaesthesia and post-operative medications; and delayed wound healing.
Nutritional status	The obese person is at increased risk for delayed wound healing, chest infections, wound separation (dehiscence) and infection. Obese and underweight people are more at risk of pressure ulcer development (see Chapter 5).
Dehydration/electrolyte imbalance	Depending on the degree of dehydration and/or type of electrolyte imbalance, cardiac dysrhythmia or heart failure may occur. Liver and renal failure may also result (see Chapter 3).
Cardiovascular problems	Presence of cardiovascular disease increases the risk of haemorrhage and shock, hypotension, thrombophlebitis, pulmonary embolism, stroke (especially in the older person), and fluid volume overload (see Chapter 9).
Respiratory problems	Respiratory complications such as bronchitis, atelectasis and pneumonia are some of the most common and serious post-operative complications. Respiratory depression from general anaesthesia and acid-base imbalance may also occur. People with pulmonary problems are more at risk for developing these complications (see Chapter 11).



Table 1.10 (continued)

Factor	Associated risk
Diabetes mellitus	Diabetes causes an increased risk for fluctuating blood glucose levels, which can lead to life-threatening hypoglycaemia or ketoacidosis. Diabetes also increases the risk for cardiovascular disease, delayed wound healing and wound infection (see Chapter 6).
Renal and liver dysfunction	The person with renal or liver dysfunction may poorly tolerate general anaesthesia, have fluid/electrolyte and acid–base imbalances, decreased metabolism and excretion of drugs, increased risk for haemorrhage and delayed wound healing (see Chapters 7 and 8).
Alcoholism	The person may be malnourished and experience delirium tremens (acute withdrawal symptoms). More general anaesthesia may be required. Haemorrhage and delayed wound healing can result from liver damage and poor nutritional status.
Smoking	Cigarette smokers are at increased risk of respiratory complications such as pneumonia, atelectasis and bronchitis because of increased mucous secretions and a decreased ability to expel them.
Medications	Anaesthesia interaction with some medications can cause respiratory difficulties, hypotension and circulatory collapse. Other medications can produce side-effects that may increase surgical risk.
Neurological problems	Uncontrolled problems such as epilepsy may result in seizures during surgery or recovery (see Chapter 13).

Case Study 1 – Wendy

NURSING CARE PLAN The person undergoing surgery



Pre-operative nursing care

Pre-operative care is the assessment and preparation of a person for surgery. The individual's response to planned surgery varies greatly. Discharge planning should be considered as early as possible and will incorporate specific care pathways that map the expected recovery following specific surgical procedures.

When planning and implementing nursing care, consider individual psychological and physical differences, the type of surgery and the circumstances surrounding the need for surgery. A thorough nursing assessment is needed to determine the most appropriate care for each person undergoing surgery. Sources of information to support the initial assessment of the individual can include medical and nursing records, the individual's relatives and other members of the interdisciplinary team.

In Wendy's case, she has been assessed for the following physical, psychological and social needs:

➤ **Current health.** Wendy is physically fit. 'I like to exercise and keep reasonably fit, so I aim to walk the dog at least once a day. Luckily my dog is young and doesn't mind if I power walk.' The nurse checks for Wendy's ability to communicate after surgery (this might include noting any prosthesis, for example a hearing aid). Allergies are discussed, particularly in relation to latex allergy, penicillin and food allergies. Wendy's mental state is assessed to look for signs of dementia, mental illness, excessive anxiety and depression.

Tools such as the Hospital Anxiety and Depression Scale (HADS) can help to measure psychological distress in people.

- **Physical assessment.** Measurements of blood pressure, respiratory rate and temperature are made to determine baseline information that can be compared post-operatively to evaluate Wendy's condition.
- **Medications.** A list of Wendy's current medication is made. The nurse should be alerted to people taking anticonvulsants that affect conscious levels, anticoagulants that may affect bleeding.

PRACTICE ALERT



Assess information about use of over-the-counter medications including herbal supplements. These drugs can interact with medications administered in the peri-operative period.

- **Smoking and alcohol intake.** Wendy is a non-smoker. She enjoys a 'social drink' with friends and estimates her intake at 6–8 units of alcohol per week.
- **Psychological status.** Surgery is a significant and stressful event. Regardless of the nature of the surgery (whether major or minor), the individual and family will be anxious. Some individuals and their families seek care from a spiritual

Case Study 1 – Wendy**NURSING CARE PLAN The person undergoing surgery**

provider during this time. The degree of anxiety they will feel is not necessarily proportional to the magnitude of the surgical procedure. For example, In Wendy's case, being scheduled to have investigations to rule out cancer, which is considered minor surgery, may be more anxiety provoking than undergoing major surgery. Therapeutic communication can help Wendy and her family identify fears and concerns. The nurse can then plan nursing interventions and supportive care to reduce her anxiety level and assist her to cope successfully with the stressors encountered during the peri-operative period.

Investigations can typically include a range of the following:

- + *full blood count (FBC)* to assess the oxygen-carrying capacity of red blood cells. White blood cells can indicate infection;
- + *blood grouping and cross matching* in case of need for transfusion;
- + *serum electrolytes* to evaluate fluid status;
- + *fasting blood glucose* – high levels may be an indication of undiagnosed diabetes;
- + *blood urea, nitrogen and creatinine* to determine renal function;
- + *liver function tests*;
- + *serum albumin and protein* to determine nutritional status;
- + *urinalysis* can highlight a number of abnormalities, for example glucose and infection;
- + *chest x-ray* can highlight enlarged heart and respiratory problems;
- + *electrocardiogram (ECG)*, a diagnostic tool to show evidence of cardiac problems.

Pre-operative teaching

Teaching the individual is an essential nursing responsibility in the pre-operative period. Education and emotional support have a positive effect on the individual's physical and psychological wellbeing, both before and after surgery. There is a wealth of evidence that supports the benefits of this in surgical care, where people experience reduced anxiety and post-operative complications, and quicker discharge and return to normal activities. These positive outcomes may be attributed in part to the sense of control the individual gains through the nurse's teaching.

Wendy is given information about what and when things will take place, for example, the estimated time of her surgery, what she can expect following surgery in terms of pain relief, and how soon she is likely to eat and drink following surgery.

Those people undergoing major surgery should be supported in their recovery by teaching them how best to move and deep breathe, how to hold themselves to cough and how to help

prevent the onset of post-operative complications, for example leg exercises to minimise the risk of deep vein thrombosis (DVT).

Pre-operative fasting

General anaesthesia carries the risk of Wendy inhaling gastric contents. With this in mind, she will be kept 'nil by mouth' long enough for the stomach to empty.

PRACTICE ALERT

Researchers report that many individuals experience prolonged unnecessary periods of pre-operative fasting.

The Royal College of Nursing recommend that individuals can have clear water or fluids for up to three hours before surgery and light solid foods up to six hours. Wendy prefers not to eat but would like to keep her mouth moist before surgery.

Anti-embolic stockings (graduated elastic compression stockings)

Sometimes referred to as thromboembolic deterrent stockings (TEDS), they are used to help prevent the onset of DVT. They compress the veins of the legs and help to facilitate the return of blood to the heart, helping to reduce swelling and oedema. National Institute for Health and Clinical Excellence guidelines (NICE 2010) state that thigh-length antiembolic stockings should be fitted from admission to hospital and until the individual has returned to their usual level of activity. Regular checking of the feet and skin will alert the nurse to any redness or skin breakdown.

Pre-operative checklist

A pre-operative surgical checklist serves as an outline for finalising preparation of the individual for surgery. Complete the checklist before Wendy is transported to surgery as follows:

- + Assist with bathing, grooming and changing into operating room gown.
- + Ensure that the individual takes nil by mouth three hours for fluids prior to surgery, six hours for light food.
- + Remove nail polish, lipstick and make-up to facilitate circulatory assessment during and after surgery.
- + Ensure that identification and allergy bands are correct, legible and secure.
- + Remove hair pins and jewellery; a wedding ring may be worn if it is removed from the finger, covered with gauze, replaced and then taped to the finger.

Case Study 1 – Wendy

NURSING CARE PLAN The person undergoing surgery

- + Complete skin or bowel preparation as required.
- + Remove dentures, prosthesis and contact lenses, and store them in a safe place.
- + Leave a hearing aid in place if the client cannot hear without it, and notify the theatre nurse.
- + Verify that the informed consent has been signed prior to administering pre-operative medications.
- + Verify that all ordered diagnostic test reports are in the chart.
- + Have the individual empty the bladder immediately before the pre-operative medication is administered (unless an indwelling catheter is in place).
- + Administer pre-operative medication as prescribed.
- + Ensure the safety of the individual once the medication has been given by placing them on bed rest and by placing the call button within reach.
- + Obtain and record vital signs.
- + Provide ongoing supportive care to the individual and their family.

IN PRACTICE



Pre-operative teaching – leg, ankle and foot exercises

Leg exercises are taught to the person who is at risk for developing thrombophlebitis (inflammation of a vein, which is associated with the formation of blood clots). Risk factors for developing thrombophlebitis include decreased mobility pre-operatively and/or post-operatively; a history of difficulties with peripheral circulation; and cardiovascular, pelvic or lower extremity surgery.

The purpose of leg exercises is to promote venous blood return from the extremities. As the leg muscles contract and relax, blood is pumped back to the heart, promoting cardiac output and reducing venous stasis. These exercises also maintain muscle tone and range of motion, which facilitate early ambulation.

Teach the individual to perform the following exercises while lying in bed:

1. *Muscle pumping exercise*: contract and relax calf and thigh muscles at least 10 times consecutively.

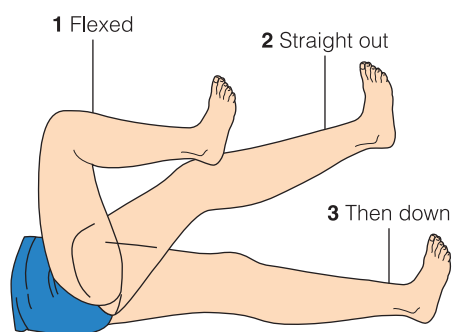
2. *Leg exercises*:

- a. bend the knee and raise it toward the chest (see Figure 1.5a);
- b. straighten out leg and hold for a few seconds before lowering the leg back to the bed;
- c. repeat exercise five times consecutively prior to alternating to the other foot.

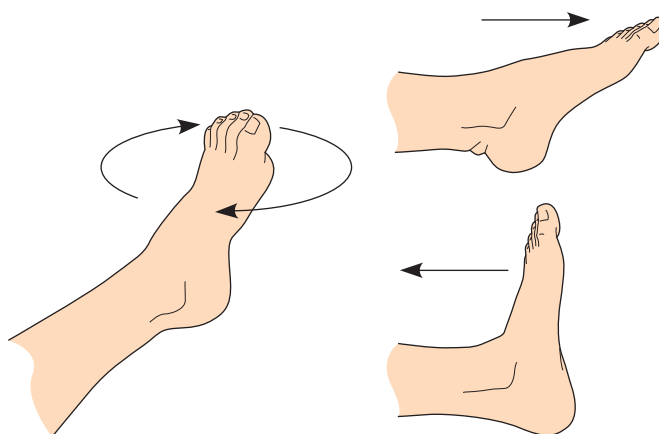
3. *Ankle and foot exercises*:

- a. rotate both ankles by making complete circles, first to the right and then to the left (see Figure 1.5b);
- b. repeat five times and then relax;
- c. with feet together, point toes toward the head and then to the foot of the bed (see Figure 1.5b);
- d. repeat this pumping action 10 times, and then relax.

Encourage the individual to perform leg, ankle and foot exercises every one to two hours while awake, depending on their needs and how mobile they are.



(a) Leg exercises.



(b) Ankle and foot exercises.

Figure 1.5 Leg and ankle exercises.

Case Study 1 – Wendy**NURSING CARE PLAN The person undergoing surgery**

- + Document all pre-operative care in the nursing notes.
- + Verify with the surgical team the individual's identity, and verify that all information is documented appropriately.
- + Help the surgical team transfer the individual from the bed to the trolley.
- + Prepare the individual's bed and surrounding area for post-operative care, including making the surgical bed and ensuring that the anticipated supplies and equipment are within reach.

Intra-operative nursing care

The intra-operative phase of surgery begins when the client enters the operating room and ends when the individual is transferred to the recovery area. Nursing care in this phase focuses on keeping the individual and the environment safe and providing physiological monitoring and psychological support. Theatre nurses, according to specific role definitions, support and care for the individual during this critical period.

Post-operative nursing care**Immediate post-operative care**

Immediate post-operative care begins when the individual has been transferred from the operating room to the recovery

room. Here, the recovery nurse is part of the surgical team and monitors the individual's vital signs and surgical site to determine the response to the surgical procedure and to detect significant changes. Assessing mental status and level of consciousness is another ongoing nursing responsibility, and the individual may require repeated orientation to time, place and person. Emotional support is also essential, because the individual is in a vulnerable and dependent position. Assessing and evaluating hydration status by monitoring intake and output is crucial to detecting cardiovascular or renal complications. In addition, the recovery nurse assesses the individual's pain level. Careful administration of analgesics provides comfort without compounding the potential side-effects from the anaesthesia (see Chapter 2).

Post-operative recovery is focused on the prevention and detection of potential complications arising from surgery and anaesthesia (see Table 1.11).

During the post-operative period, Wendy will be closely monitored every 15 minutes during the first hour and, if stable, every 30 minutes for the next two hours, and then every hour during the subsequent four hours. Assessments are then carried out every four hours, subject to change according to Wendy's condition.

Table 1.11 Common post-operative complications

Problem	Cause
Cardiovascular complications:	
Shock	Shock is a life-threatening post-operative complication. It results from an insufficient blood flow to vital organs, an inability to use oxygen and nutrients or the inability to rid tissues of waste material. Hypovolaemic shock, the most common type in the post-operative individual, results from a decrease in circulating fluid volume. Decreased fluid volume develops with blood or plasma loss or, less commonly, from severe prolonged vomiting or diarrhoea (see Chapter 3).
Haemorrhage	Haemorrhage is an excessive loss of blood. A concealed haemorrhage occurs internally from a blood vessel that is no longer sutured or cauterised or from a drainage tube that has eroded a blood vessel. An obvious haemorrhage occurs externally from a dislodged or ill-formed clot at the wound. Haemorrhage may also result from abnormalities in the blood's ability to clot; these abnormalities may result from a pathologic condition, or they may be a side-effect of medications. Haemorrhage from a venous source oozes out quickly and is dark red, whereas an arterial haemorrhage is characterised by bright red spurts of blood pulsating with each heartbeat. Whether the haemorrhage is from a venous or an arterial source, hypovolaemic shock will occur if sufficient blood is lost from the circulation.
DVT	DVT is the formation of a thrombus (blood clot) in association with inflammation in deep veins. This complication most often occurs in the lower limbs. It may result from the combination of several factors, including trauma during surgery, pressure applied under the knees and sluggish blood flow during and after surgery.
Pulmonary embolism	Pulmonary embolism is a dislodged blood clot or other substance that lodges in a pulmonary artery. For the post-operative person with DVT, the threat that a portion of the thrombus may dislodge from the vein wall and travel to the lung, heart or brain is a constant concern. Early detection of this potentially life-threatening complication depends on the nurse's astute, continuing assessment of the post-operative client. Common assessment findings of the individual experiencing a pulmonary embolism include mild to moderate dyspnoea, chest pain, diaphoresis, anxiety, restlessness, rapid respirations and pulse, dysrhythmias, cough and cyanosis. Sudden death can occur if a major pulmonary artery becomes completely blocked.

Case Study 1 – Wendy

NURSING CARE PLAN The person undergoing surgery

Table 1.11 (continued)

Problem	Cause
Respiratory complications:	
Pneumonia	Pneumonia is an inflammation of lung tissue. Inflammation is caused either by a microbial infection or by a foreign substance in the lung, which leads to an infection. Numerous factors may be involved in the development of pneumonia, including aspiration infection, retained pulmonary secretions, failure to cough deeply and impaired cough reflex and decreased mobility (see Chapter 11).
Atelectasis	Atelectasis is an incomplete expansion or collapse of lung tissue resulting in inadequate ventilation and retention of pulmonary secretions. Common assessment findings include dyspnoea, diminished breath sounds over the affected area, anxiety, restlessness, crackles and cyanosis. Promoting lung expansion and systemic oxygenation of tissues is a goal in the care here.
Wound healing	From the time the surgical incision is made until the wound is completely healed, all wounds progress through four stages of healing. However, healing time varies according to many factors, such as age, nutritional status, general health and the type and location of the wound (see Chapter 5).
Complications of elimination	Common post-operative complications associated with elimination include urinary retention and altered bowel elimination. The inability to urinate with urinary retention may occur post-operatively as a result of the lying down position, effects of anaesthesia and narcotics, inactivity, altered fluid balance, nervous tension or surgical manipulation in the pelvic area. Bowel elimination frequently is altered after abdominal or pelvic surgery and sometimes after other surgeries. Return to normal gastrointestinal function may be delayed by general anaesthesia, narcotic analgesia, decreased mobility or altered fluid and food intake during the peri-operative period.
Acute post-operative pain	Pain is expected after surgery. It is neither realistic nor practical to eliminate post-operative pain completely. Nevertheless, the individual should receive substantial relief from and control of this discomfort. Controlling post-operative pain not only promotes comfort but also facilitates coughing, turning, deep-breathing exercises, earlier ambulation and decreased length of hospitalisation, resulting in fewer post-operative complications. It is usually worse 12–36 hours following surgery, decreasing after the 2 nd and 3 rd day post-operation (see Chapter 2).

Hydration and nutrition

It is common for individuals to be hydrated by intravenous infusion. In Wendy's case, she is able to take small sips of water initially to combat her dry, sticky mouth. Hydration is important to maintain cardiovascular and renal function and to moisten mucous membranes and secretions.

Providing there is no feeling of nausea, Wendy can be offered small amounts of food. Normally this would take place after assessing the presence of peristalsis. Handling of the intestines during surgery and inactivity combined with pre-operative fasting can all inhibit peristalsis.

COMMUNITY-BASED CARE

Because the post-operative phase does not end until the individual has recovered completely from the surgical intervention, the nurse plays a vital role as the person nears discharge. As Wendy prepares to recuperate at home, the nurse will provide information and support to help her successfully self-care. All aspects of teaching should be accompanied by written guidelines, directions and information. This is particularly helpful when a large amount of unfamiliar, detailed information is presented. Teach Wendy:

- How to perform wound care. Teaching is more effective if the nurse first demonstrates and explains the procedure to Wendy. To evaluate the effectiveness of the teaching, ask Wendy to demonstrate the procedure in return.
- The signs and symptoms of a wound infection. She should be able to determine what is normal and what should be reported to her doctor.
- The method and the frequency of taking her temperature.
- The limitations or restrictions that may be imposed on such activities as lifting, driving, bathing, sexual activity and other physical activities.
- The control of pain. If analgesics are prescribed, instruct Wendy in the dosage, frequency, purpose, common side-effects and other side-effects. Reinforce the use of relaxation or other pain control techniques that she has found useful in controlling post-operative pain.

CHAPTER HIGHLIGHTS



In this chapter, you are introduced to Wendy Xin, who is admitted to hospital for surgery to explore a possible malignancy (for detailed information about cancer see Chapter 2). What emerges is the experiences that Wendy has as she embarks upon her journey as a patient during the pre-, intra- and post-operative stages of care. As such, you will be encouraged to review the aspects of the nurse's role in health and ill health in relation to the following:

- Adult nursing is diverse in terms of where, how and to whom it is delivered.
- The nursing process consists of five phases: assessing, diagnosing, planning, implementing and evaluating.
- Critical thinking uses scientific knowledge combined with the nursing process to consider a care situation.
- Ethics should be applied to nursing care within the framework of the four ethical principles and 'The Code' (NMC 2008).
- The nurse acts as a leader and manager of care and how care is delivered.
- Quality assurance is a tool to measure effectiveness of care delivery.
- The nurse is a researcher and evidence-based care underpins care management and delivery.
- The health and illness continuum is explored.
- Factors that influence health are considered and you are invited to consider your own health in the light of this.
- Health beliefs and behaviour are defined and examples shared.
- Health promotion activities are highlighted.
- Health and illness through the lifespan are explored in detail and the physical changes that occur in adulthood are identified.
- Pre-, intra- and post-operative care is explored in the case study of Wendy Xin who is admitted for surgery.

TEST YOURSELF



1. Which of the following is a true representation of the term *primary care*?
 - a. healthcare which is free at the point of delivery
 - b. the first point of contact for people seeking healthcare
 - c. care in the hospital setting
 - d. general practitioner practices
2. The nursing process:
 - a. is the series of critical thinking activities nurses use to provide care
 - b. is a process to sort out the best procedures for moving and handling
 - c. delivers planned care only
 - d. implements multidisciplinary activities
3. The phases of the nursing process are:
 - a. implementing, planning, evaluating, diagnosing and assessing
 - b. assessing, planning, evaluating, diagnosing and implementing
 - c. assessing, diagnosing, planning, implementing and evaluating
 - d. assessing, evaluating, planning, diagnosing and implementing
4. Evaluating care involves:
 - a. collaborating with the patient in relation to the care given
 - b. identifying risks that the patient might have
 - c. formulating diagnostic statements
 - d. measuring the degree to which goals and outcomes have been achieved
5. An example of objective data is:
 - a. pain
 - b. temperature
 - c. depression
 - d. tiredness
6. An example of subjective data is:
 - a. heart rate
 - b. urinalysis
 - c. weight
 - d. anxiety
7. Which of the following is an example of beneficence?
 - a. promotion of good and the prevention of harm
 - b. to do no intentional harm
 - c. to respect the rights of people
 - d. to treat people fairly

8. To which theory in ethics does the term *utilitarianism* belong?
 - a. deontology
 - b. non-maleficence
 - c. consequentialism
 - d. moral debate
9. Obtaining a pre-operative blood pressure measurement serves the following purpose:
 - a. fulfils a legal requirement
 - b. informs anaesthetist so proper level of anaesthesia can be given
 - c. prevents atelectasis
 - d. provides a baseline to compare post-operative blood pressure levels
10. Deep vein thrombosis is:
 - a. the formation of a blood clot in the vein
 - b. formation of a blood clot in the pulmonary artery
 - c. a condition that only affects women
 - d. the pulse sensation felt in the blood vessels

Further resources



Healthtalkonline

www.healthtalkonline.org

Listen to persons talking about their experiences of taking medication for a variety of problems by visiting this website.

Immunisations

www.immunisation.nhs.uk

Access a list of immunisation schedules, use these resources to update your knowledge about vaccinations and immunisations.

Department of Health (DoH)

www.dh.gov.uk

Access the full range of policy, guidance and publications from the Department of Health website.

Nursing and Midwifery Council (NMC)

www.nmc.org.uk

Access this site to get the latest update and guidance from our professional body.

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2

Caring for people with cancer

Learning outcomes

- In defining cancer, explain the theories of carcinogenesis, the risk factors and the causative agents and promoting factors.
- Examine the physical, psychological and social effects of cancer on individuals and society and how this impacts on them throughout their cancer experience.
- Describe the role of palliative care as disease progresses.
- Examine the range of responses to **loss**, considering implications these have for the person and those supporting them.

Clinical competencies

- Undertake a holistic assessment of the person with cancer, identifying their physical and psychosocial needs.
- Incorporate evidence-based research into the planning of nursing care for the person with cancer throughout the disease trajectory.
- Evaluate the management of symptoms that arise from both the disease process and as a result of treatment of the cancer, recognising the need for a palliative approach at the appropriate time.
- Provide sensitive, individualised care for those experiencing loss, **grief** and death.

CASE STUDIES



Below are three case studies that you may wish to consider before, during or after you have read the chapter. There are no right or wrong answers to these case studies, but you should think about the physical, psychological and social implications.

Case Study 1 – Susan

Mrs Susan Stone, a 30-year-old beauty consultant, has always had sunshine holidays with the family from being a young child and even now likes to maintain a year-round tan using tanning beds to top up her colour. She notices that a mole on her shoulder has changed colour and shape recently and when it was knocked recently, it bled. She is hoping to get married in a month's time on a Caribbean island and is worried that this might be something serious. Susan represents someone at the start of their cancer journey.

Case Study 2 – Brian

Mr Brian Smith is a 55-year-old publican. He has cancer of the colon which was treated surgically, and did not have a colostomy fashioned. He has now had two cycles of **chemotherapy**. He has telephoned the nurse in the chemotherapy suite as he does not feel very well and does not want to attend for treatment. He is not eating or sleeping and feels very tired. He has developed mouth ulcers which are very painful and is feeling very dispirited.

Case Study 3 – Molly

Mrs Molly McKenzie, aged 75 years and widowed, had a mastectomy performed for breast cancer 20 years previously. She has been well since her treatment and enjoys seeing her grandchildren and helping with childcare. She presents at the doctors with severe **pain** in her back and tingling sensation down her left leg, and is looking very thin. When questioned about her weight loss, she has not been dieting and the weight has changed rapidly over the last three months. She represents someone who requires palliative care.

INTRODUCTION

Although the incidence and mortality rates of cancer have continued to decline since the 1990s, it remains one of the most feared diseases. The fear engendered by the suggestion of a cancer diagnosis often evokes feelings of hopelessness and helplessness. Cancer results when normal cells mutate into abnormal cells, and it can affect any body tissue; it is a disruptive and life-threatening process that affects the whole person and that person's family, friends and acquaintances. Nursing interventions are based on the understanding that cancer is a chronic disease with acute episodes, and that the person is often treated as an out-patient and is usually treated with a combination of therapies. Equally important, the nurse recognises that caring for the person with cancer involves health education, early detection and treatment, together with supportive care, long-term follow-up and possibly end-of-life care.

Oncology is the study of cancer. The term is derived from the Greek word *oncoma* ('bulk'). Oncologists specialise in caring for people with cancer; they may be medical doctors, surgeons, radiologists, immunologists or researchers. The

oncology nurse (or clinical nurse specialist – CNS) is an important and significant member of the oncology team, who has received specialised training in cancer care and treatment and in assisting the person with the psychosocial problems. Specialist palliative care nurses are skilled in the management of symptoms that develop as the illness progresses when cure is not the main intent. Many of these nurses are known as Macmillan nurses in the UK because their posts and education have been supported by the Macmillan Cancer Relief charity. Collaboration among health-care professionals (e.g., surgeons, oncologists, nurses, social workers) ensures the most effective care and treatment for the person with cancer.

This chapter focuses on the patho-physiology of cancer; identifies current diagnostic and treatment modalities; and discusses nursing care appropriate for people with cancer throughout their journey. Most people with cancer experience a range of symptoms, including pain, which is explored. The chapter concludes by addressing the needs of the dying person and the support they and those closest to them require. Cancers that affect specific body systems (e.g., leukaemia, lung cancer) are dealt with in more detail in other chapters of the book.

Incidence and mortality

In 2008, 410 500 new cases of cancer were registered (ONS 2010) and there were 156 723 deaths attributed to cancer in the UK (Cancer Research UK 2010a). Cancer Research UK (2010b) claim that 1:4 or 27% of deaths occurring in 2006 were from cancer, with lung cancer accounting for the largest number of deaths, followed by colorectal and breast cancer. Mortality rates for different cancers vary. The UK, in the 1980s and 1990s, had cancer survival rates that were the poorest in Western Europe, with people waiting a long time for diagnosis and treatment. In response, the government launched its Cancer Plan in 2000 and since then outcomes have improved, so much so that cancer mortality in those younger than 75 years of age fell by 17% during the period of 1996–2005, representing 60 000 lives saved (DoH 2007). Whilst survival rates are increasing, so too are the number of people presenting with cancer and this number will increase by a third by 2020. Despite the improvements, the UK still has not closed the gap with the best European countries.

Since the introduction of the NHS Cancer Plan in 2000, the DoH (2007) claims that the UK now has better prevention because:

- The number of people smoking has fallen.
- More cancers are detected through screening, especially breast cancers.
- People are diagnosed and treated sooner with approximately 99% of those people with cancer receiving their first treatment within a month of diagnosis.

FAST FACTS

Cancer in the UK

- 30 cancer networks coordinate services and all aspects of care.
- Someone is diagnosed with cancer every two minutes in the UK.
- Breast cancer is the most common cancer in the UK with around 125 new cases diagnosed each day.
- There are four cancers – breast, lung, colorectal and prostate – that make up over half of all newly diagnosed cases.
- Cancer survival is lower for people living in deprived areas of England and Wales.
- Highest male survival rate is seen for those with testicular cancer.
- Highest female survival is seen for women with melanoma.

Source: www.cancerresearch.co.uk.



- People are receiving better treatment since guidelines have been issued by the National Institute for Health and Clinical Excellence (NICE) ensuring greater conformity between those providing care.

However, survival rates in those cancers that are difficult to detect – like lung cancer – remain the same.

Risk factors

Risk factors make an individual or a population vulnerable to a specific disease and can be divided into those that are controllable and those that are not. Knowledge and assessment of risk factors are especially important in counselling the person and their families about measures to prevent cancer. However, cancer is multifactorial, that is, it develops from a combination of events, and it is difficult to categorically state which factors contribute most to cancer development. Trends can be identified, but explanations for these trends are more difficult to ascertain. According to statistics (Cancer Research UK 2010c) we know that:

- Men are at greater risk of developing cancer than women, except for breast cancer.
- Generally, men and women from Asian, Chinese and mixed ethnic groups are significantly less likely to get cancer than the white population.
- Asian and black women under the age of 65 years who develop breast cancer have a lower survival rate than the white population.
- Black men and women are less likely to get lung, breast or colorectal cancers.
- Black men and women are more at risk of developing cancer of the stomach.

Consider this . . .

Why might people from different populations be at risk of developing certain cancers?

Why might men be at more risk than women?

There is evidence supporting the following risk factors.

HEREDITY

It is estimated that 5–10% of cancers may have a hereditary component. The familial pattern of some breast and colon cancers has been documented; and there is some evidence supporting the theory in lung, ovarian and prostate cancers. Although further research is needed to identify cancers that are due to heredity, familial predisposition should be counted among risk factors so that people at risk can reduce behaviours

that promote cancer. For example, a person with a family history of lung cancer should be counselled to avoid smoking, areas where smoking is allowed and working in an occupation that may expose them to carcinogens. All cancers are a genetic disease because it results from mutations of the genes in the cells, but they are not all inherited diseases.

AGE

Cancer is a disease associated with ageing; three quarters of cases are aged over 60 years and only 1% of cancers are seen in children and teenagers (Cancer Research UK 2010d). It is believed that if people changed their lifestyle habits, e.g. stopped smoking, reduced alcohol intake, avoided sun exposure and reduced weight, then half of all cancers would be avoided. Another problem is that free radicals (molecules resulting from the body's metabolic and oxidative processes) tend to accumulate in the cells over time, causing damage and mutation. Hormonal changes that occur with ageing can be associated with cancer. Post-menopausal women receiving exogenous oestrogen, as in hormone replacement therapy (HRT), have an increased risk for breast and uterine cancers. Older men are at risk of prostate cancer, possibly due to breakdown of testosterone into carcinogenic (cancer-making) forms.

POVERTY

The poor are at higher risk for cancer than the population in general. This is attributed in part to delays in seeking treatment and poor compliance with health advice. They have more difficulty in getting time away from work for medical consultations, and time away from work usually results in a loss of wages that they cannot afford. Other factors that may be involved such as diet and stress, which usually come under the category of controllable risks, are frequently uncontrollable in this population (Cancer Research UK 2010e).

DIET

Diet has been implicated in most cancers. A diet that is predominantly high in fat and meat and low in vegetables can increase the risk of bowel cancer, and obesity is associated with breast cancer. Excessive body fat has been linked to an increase of hormone-dependent cancers. Diets that include a high salt component are thought to lead to stomach cancer; certain vegetables, such as brassicas (broccoli and cabbage), have a protective function, and a diet that contains a large proportion of fruit and vegetables does seem to prevent cancers of the stomach, bowel and oesophagus.

OCCUPATION

Occupational risk might be considered to be either controllable or uncontrollable. For many people, education and ability limit their choice of occupation. During times of high

unemployment, changing occupation poses a risk so this may not be a viable option. Government standards are designed to protect workers from hazardous substances, but many believe that these standards are not strict enough and that inspections are not frequent enough to prevent violations.

Specific risks vary according to the occupation. Outdoor workers such as farmers and construction workers are exposed to solar radiation; healthcare workers such as x-ray technicians and biomedical researchers are exposed to ionising radiation and carcinogenic substances; and exposure to asbestos is a problem for people who work in old buildings with asbestos insulation in the walls.

INFECTION

A range of bacterial infections and viruses increase the risk of cancer:

- Human papillomavirus (HPV) causes 80% of cervical cancers.
- Hepatitis B and C results in 81% hepatocellular (liver) carcinomas.
- Epstein Barr virus results in Hodgkin's lymphoma (60%) or Burkitt's lymphoma (90%).
- HIV infections can result in Kaposi sarcomas and lymphomas.

Bacteria and viruses can alter the genetic makeup of the cells; exposure usually has to be over a period of time, and other factors play a role such as an impaired immunological response. Papillomaviruses cause plantar, common and flat warts, which are benign and usually regress spontaneously; however, they also cause genital warts and laryngeal papillomas, which are associated with malignant melanoma and cervical, penile and laryngeal cancers.

TOBACCO USE

Lung cancer is considered highly preventable because of its relationship to smoking. The carcinogenic substances in tobacco are weak; therefore, stopping smoking can reverse the damage it causes. Many other substances in tobacco which are not in themselves carcinogenic promote cancer changes so that the larger the dose and longer the use, the higher the risk for developing cancer. Research has shown a significantly lower lung cancer death risk for former smokers compared to current smokers. Smokers who stop before middle age lessen the risk of lung cancer by 90%.

Tobacco is also related to other forms of cancer. Smokers face an increased risk for oropharyngeal, oesophageal, laryngeal, gastric, pancreatic and bladder cancers. Pipe and cigar smokers are susceptible to oropharyngeal and laryngeal cancers. Oral and oesophageal cancers are more common among those who chew tobacco or use snuff.

Research has documented the harmful effects of second-hand tobacco smoke. Tobacco-specific nitrosamines were

recovered in the urine of children living with smokers. It is now accepted that non-smokers exposed to tobacco smoke over long periods of time, whether in the workplace or the home, have an increased risk for lung or bladder cancers.

ALCOHOL USE

Alcohol promotes cancer by enhancing the contact between carcinogens such as those in tobacco and the stem cells that line the oral cavity, larynx and oesophagus. People who both smoke and drink a considerable amount of alcohol daily have an increased risk for oral, oesophageal and laryngeal cancers.

SUN EXPOSURE

As the protective ozone layer thins, more of the sun's damaging ultraviolet radiation reaches the earth. The rate of skin cancers has increased; evidence suggests that 90% of malignant melanomas are a result of overexposure to solar radiation. Sun-related skin cancers are now considered to be a problem for all people, regardless of skin colour, but people of Northern European extraction with very fair skin, blue or green eyes, and light-colour hair are most vulnerable. It is the second most common cancer to occur in 15–30-year-olds; however, 90% of the non-melanoma skin cancers are curable. Elderly people with decreased pigment in their skin are also more at risk.

Case Study 1 – Susan



Susan in Case Study 1 has had holidays abroad most of her life; she likes the tanned look and has maintained or supplemented her tan with frequent use of sunbeds. She has not used high factor sun lotions to protect her skin on sunny days in the UK; only using them when on holiday; she does remembering burning her shoulders on a couple of occasions when working in her garden in hot weather. Knowing that her lifestyle may be a contributing factor does not help Susan to cope with the news that a mole changing shape, colour and size could be bad news and signify that she has skin cancer.

Skin cancer is common, with 76 500 new cases presenting each year in the UK; this accounts for 20% of all new cancers being reported. There are three main skin cancers – basal cell carcinoma, squamous cell carcinoma (which tend to occur more in older people) and malignant melanomas (which tend to occur more in younger people aged between 19 and 39 years of age). Skin cancers are not usually life-threatening; however, the majority of those who do die have malignant melanomas.

If the primary healthcare professionals consider Susan to have cancer, then the 'two week wait' rule applies and an urgent referral is made for her to see a specialist. The 'two week wait' rule is a target that the current UK government has decided on as part of its strategy to improve cancer care. It

means that people who are seen by their GP should not wait longer than two weeks before seeing a specialist consultant.

Photographs will be taken of the mole, and its dimensions will be drawn on graph paper so that changes to size and shape can be monitored. If the GP does not think the changes to the mole are cancerous, they will monitor the person over eight weeks to see whether any further changes are noted.

IN PRACTICE



Skin cancer

National Institute for Health and Clinical Excellence (NICE 2006) have issued a seven-point scale clinicians can use to assess whether a mole is potentially cancerous.

There are three major changes and if all three are present the score is 6 (two points for each change):

- change in size;
- change in colour;
- change in shape.

There are four minor features which score one point each:

- measures 7 mm or more across in any direction;
- inflammation;
- oozing or bleeding;
- change in sensation – itching or pain, for example.

If the score is 3 or more, then the person needs to be referred to a specialist dermatologist. However, if only one item scores in a worrying manner, then referral is indicated.

Susan will be referred to the local hospital skin cancer multidisciplinary team, who will assess Susan and determine her care because she scores 5 points. Susan is very anxious and it is important not to give false reassurances. Providing Susan with factual information about who she is being referred to, what will happen when she sees the specialist, what kind of tests will be undertaken, etc. will help lessen some of her anxieties (NICE 2006).

Pathophysiology

Cancer is an eclectic term that is used for a number of diseases which have a similar way of developing. Cancer develops from one ancestral cell so it is called monoclonal. The changes that occur in a 'normal' cell to a 'malignant' (cancer) one occur over time and involve many stages or mutations, and several factors are implicated. This may take years and is the reason why cancer is principally a disease of older people. Before a discussion of

the various theories of the causes of cancer, it is useful to review how normal cells divide and adapt to changing conditions.

NORMAL CELL GROWTH

Mature normal cells are uniform in size and have nuclei that are characteristic of the tissue to which the cells belong. Within the nucleus of normal cells, chromosomes containing deoxyribonucleic acid (DNA) molecules carry the genetic information that controls the synthesis of polypeptides (proteins). Genes are subunits of chromosomes and consist of portions of DNA that specify the production of particular sets of proteins. Thus, genes control the development of specific traits. The genetic code in the DNA of every gene is translated into protein structures that determine the type, maturity and function of a cell. Any change or disruption in a gene can result in an inaccurate 'blueprint' that can produce an aberrant cell, which may then become cancerous. Normal cells replicate in a controlled manner, and only when conditions such as space and nutrients are available. There is a balance between mature and maturing cells; if all cells changed at the same time we would be like snakes shedding a skin.

The cell cycle

The cell cycle (Figure 2.1) consists of four phases. In the G_1 phase, the cell enlarges and prepares for replication by building proteins which helps prepare the DNA for change. During the synthesis (S) phase, DNA is copied and the chromosomes in the cell are duplicated. During the next phase, (G_2), the cell prepares itself for mitosis (splitting in two). Finally, with all preparations complete, the cell begins mitosis (M). This phase culminates in the division of the parent cell into two exact copies called daughter cells, each having identical genetic material. The cells then immediately enter G_1 where they begin the cell cycle again, or divert into a resting phase called G_0 . Cells that line the mouth change rapidly, bone cells less frequently. The cell cycle is controlled by cyclins (chemical messengers), which combine with and activate enzymes called cyclin-dependent kinases.

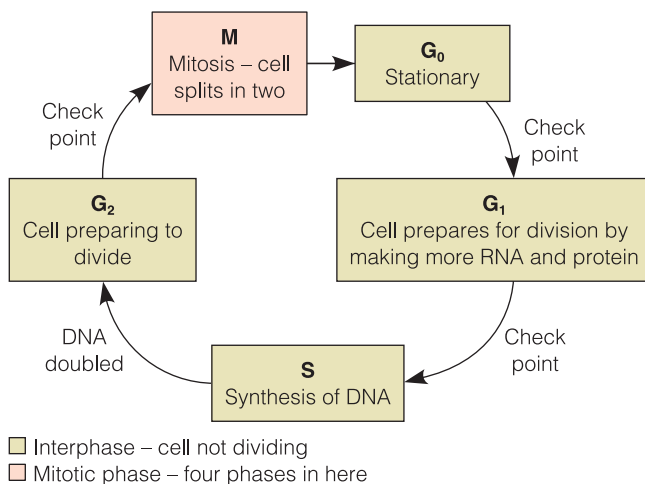


Figure 2.1 The cell cycle.

Some cyclins cause a 'braking' action and prevent the cycle from proceeding. Checkpoints in the cell cycle ensure that it proceeds in the correct order; if there are any abnormalities, apoptosis (or cell death) occurs through the action of certain enzymes. A malfunction of any of these regulators of cell growth and division can result in the rapid proliferation of immature cells. In some cases, these cells become cancerous. Knowledge of the cell cycle is used in the development of chemotherapeutic drugs, which are designed to disrupt the cancer cells during different stages of their cycle and kill them.

Differentiation

Cells in the body originated from 'stem' cells differentiate as the embryo grows; that is, they take on different shapes so that they can fulfil specific roles, some becoming skin cells and others becoming nerve cells. It is possible to determine where a cell has originated from microscopically because it has its own specific characteristics. When cells become cancerous, they alter so that they are not a copy of the parent cell. When a sample of tissue is taken, as in a biopsy, it is possible to see how much of the tissue has changed and how much of the tissue no longer represents the original.

If more than 75% of the tissue has changed, it is said to be poorly differentiated or undifferentiated; that is, most of it has altered and become cancerous. If only 50% of the tissue has changed, it is said to be moderately differentiated and if less than 25% has changed it is minimally differentiated. The significance of this is that it determines how progressive the disease is and it impacts on a person's cancer diagnosis. The less the tissue has changed, the more likely it is to respond to cancer treatment.

Aetiology of cancer

Intensive research efforts during the past decades have led to an increased understanding of how cancer develops. Cancer research has brought new options for treatment and improved overall survival rates. Factors that cause cancer are both external (chemicals, radiation and viruses) and internal (hormones, immune conditions and inherited genetic mutations). Causal factors may act together or in sequence to initiate or promote carcinogenesis (the development of cancer). Ten or more years often pass between exposures to substances or mutations of cells and detectable cancer.

THEORIES OF CARCINOGENESIS

There are various theories for how cancer develops, and all have certain credence. One theory is that a specific substance, a carcinogen, affects a cell's DNA causing it to mutate. Another theory is that specific genes, called oncogenes, trigger the development of cancer. Several oncogenes have been identified; for example, *BRCA-1* and *BRCA-2* which are associated with breast

cancer. It is thought a decrease in the body's immune response may allow the development of oncogenes; this can occur during times of stress or in response to certain carcinogens.

Another explanation is that tumour suppressor genes that normally suppress oncogenes can become inactive. An example is p53, a suppressor gene that causes apoptosis during the cell cycle if there is a problem detected during that process. Half of human cancers exhibit mutations of p53; unfortunately, it is not absent in all cancers, so measuring for this cannot be used in diagnosis.

Central to these theories are two important concepts about the aetiology of cancer. First, damaged DNA, whether inherited or from external sources, sets up the necessary initial step for cancer to occur. Second, impairment of the human immune system, from whatever cause, lessens its ability to destroy abnormal cells.

CARCINOGENS

A number of substances have a clear link with the development of certain cancers and they can be categorised in two groups:

- genotoxic carcinogens directly altering DNA and causing mutations; and
- promoter substances causing other adverse biological effects, such as hormonal imbalances, altered immunity or chronic tissue damage, which then go onto cause cancer.

Promoter substances do not cause cancer in the absence of previous cell damage (initiation) and often require high-level and long-term contact with the altered cells.

Other factors, such as genetic predisposition, impairment of the immune response and repeated exposure to the carcinogen, are necessary for a cancer to develop. Known carcinogens are:

- viruses because they weaken the immune system;
- drugs such as chemotherapy drugs which can affect normal cells as well as cancer cells;
- hormones such as those found in contraceptive pills which can cause breast cancer;
- chemical agents such as those found in soot or arsenic which is used in pesticides;
- physical agents such as sunshine or solar radiation.

Consider this . . .

- Why is it that some people who smoke escape from getting cancer?
- We all come into contact with carcinogenic substances, yet we do not all develop cancer; Why?

TYPES OF NEOPLASMS (NEW GROWTHS)

The term *neoplasm* is often used interchangeably with *tumour*, from the Latin word meaning 'swelling'. Neoplasms can be

either benign or malignant. Benign neoplasms are localised growths that form a solid mass with well-defined borders, and are encapsulated with connective tissue. They respond to the body's normal control which means they often stop growing when they reach the boundaries of another tissue (a process called *contact inhibition*). They are easily removed and tend not to recur. Although harmless, benign neoplasms can be destructive if they crowd surrounding tissue and obstruct the function of organs. For example, a benign meningioma (from the meninges of the brain and spinal cord) can cause increased intracranial pressure (ICP), which progressively impairs the person's cerebral function. Unless the meningioma can be successfully removed, the rising ICP will eventually lead to coma and death.

Malignant neoplasms grow aggressively and do not respond to the body's controls. They are not cohesive (do not stick together, break apart easily) and present with an irregular shape (normal cells have a defined shape and purpose). Instead of slowly crowding other tissues aside, malignant neoplasms invade surrounding tissues, causing bleeding, inflammation and necrosis (tissue death) as they grow. This invasive quality of malignant neoplasms is reflected in the word origin of *cancer*, from the Greek *karkinos*, meaning 'crab'. Malignant neoplasms are either primary, that is they have originated in that tissue, or secondary, where the tumour started in one tissue and is now spread elsewhere. A person who has a primary breast cancer can develop a secondary neoplasm in the bone. Besides growing into adjacent tissue, malignant cells can travel through the blood and lymph and seed themselves in other parts of the body. A secondary tumour is usually identified by the cells that have not totally mutated, that is they still bear a semblance to the original parent cell and these cells do not resemble the tissue in which they are found. Highly differentiated cancer cells try to mimic the specialised function of the parent tissue, but undifferentiated cancers, consisting of immature cells, have almost no resemblance to the parent tissue and so perform no useful function. To make matters worse, undifferentiated cancers rob the body of its energy and nutrition as they grow. To summarise, malignant cancer cells:

- lose the regulation of mitosis, they divide and grow rapidly;
- lose their specialist characteristics and do not perform as they should;
- cross tissue boundaries;
- are not subject to signals that cause apoptosis, so continue to grow;
- do not revert back to their normal function once the stimulus that made them cancerous is removed;
- develop different nuclei;
- travel to other parts of the body;
- develop their own blood supply, which is called angiogenesis.