Intravenous Therapy in Nursing Practice

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Edited by

Lisa Dougherty OBE MSc RGN RM ONCCert
Nurse Consultant Intravenous Therapy
The Royal Marsden Hospital NHS Foundation Trust, London

Julie Lamb BSc (Hons) DPSN RGN
General Manager, Cancer Services
Barts and The London NHS Trust

Foreword by

Tom Elliott
Divisional Director and Deputy Medical Director
University Hospital Birmingham NHS Foundation Trust

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Contents

Contributors

Liz Bishop RGN, BSc (Nurs) MSc (Adv Cli Prac)
Consultant Nurse (Haemato-oncology), Guy's Hospital, London

Karen Bravery RN RSCN BSc (Hons)
Nurse Practitioner/Practice Development Nurse, Elephant Day Care, Great Ormond Street Hospital for Children, NHS Trust, London

Lisa Dougherty OBE MSc RGN RM ONCCert (Advanced Clinical Practice – Cancer Nursing)
Nurse Consultant Intravenous Therapy, The Royal Marsden NHS Foundation Trust, London

Teresa Finlay RGN OncNC BSc (Hons) MSc PGDip HPEd
Senior Lecturer, School of Health and Social Care, Oxford Brookes University, Oxford

Janice Gabriel MPhil PgD BSc (Hons) RN FETC ONC, Cert MHS
Nurse Director, Central South Coast Cancer Network, Southampton

Sarah Hart MSc BSc (Hons) RGN FETC Infection Control Certificate
Clinical Nurse Specialist – Infection Control/Radiation Protection, The Royal Marsden NHS Foundation Trust, Surrey and London

Lorraine Hyde RGN ONc Diploma in Nursing Studies, BSc (Hons) Nursing
Senior Nurse Manager, Day Care Services, The Royal Marsden NHS Foundation Trust, Surrey

Jill Kayley MSc (Autonomous Health Care Practice) RN DN Certificate
Independent Nurse Consultant – Community IV Therapy, Reading, Berks

Julie Lamb BSc (Hons) DPSN RGN
General Manager, Cancer Services, Barts and The London NHS Trust, London

Michèle Malster BA (Hons) RGN FETC
Specialist Peri-operative Practitioner, David Beevers Day Unit, St James' University Hospital, Leeds

Chris Quinn MBA PgDMS RGN FETC ENB100
Patient Safety Advocate, Cardinal Health Basingstoke

Katie Scales PGDip (Ethics) BEd (Hons) HDQC Physiology DPSN RNT RN ENB 100, ENB 400, Charing Cross Hospital, London
Consultant Nurse Critical Care, Charing Cross Hospital, Hammersmith Hospitals NHS Trust, London

Clare Shaw BSc (Hons) PhD RD (Registered Dietitian)
Consultant Dietitian, The Royal Marsden NHS Foundation Trust, London

Zoe Whittington BSc (Hons) Dip Clin Pharm DMS MRPharmS
Pharmacy, The Royal Marsden NHS Foundation Trust, Surrey

Foreword

Intravenous therapy is an important component of patient care and is part of the role of both doctors and nurses. It is therefore essential that easy to read and informative texts are available for training of these healthcare workers. The second edition of this book offers such a text.

The book is conveniently divided into three sections: fundamentals, practice and finishes, with a review of four specialty areas. The chapters assume no previous knowledge and offer a comprehensive view point on all areas related to intravenous therapy.

The first chapter deals with the legal and professional aspects of intravenous therapy. The professional and legal accountability are reviewed, together with the responsibility of nurses and duty of care. Useful sections on record-keeping and consent to treatment compliment an excellent review of the guiding principles. Anatomy and physiology and fluid electrolyte balance are dealt with in chapters two and three. They are informative and well illustrated.

The text is augmented by useful tables identifying the important veins for vascular access. The various electrolyte inbalances are also clearly summarised in tables.

An important aspect of intravenous therapy is the risk of associated catheter related sepsis. Chapter four reviews all the major risk factors related to infections associated with catheters and summarises the approach to both prevention and treatment. A section outlining the additional risks to healthcare workers, such as needlestick injuries, is also presented. The pharmacological aspects of intravenous therapy are next discussed and include methods of administering medicine.

Section two deals with the practice associated with intravenous therapy and contains chapters on peripheral intravenous therapy, local and systemic complications, types of infusion devices, vascular access and long-term central venous access. This section includes a chapter on how to obtain peripheral venous access. This is a comprehensive and practical review including psychological effects on the patient, methods to reduce anxiety and pain, how to improve venous access, skin preparation and choice of veins. An excellent summary describes the procedure for cannulation and also gives an approach to problem solving techniques.

The text concludes with the review of four specific areas which include blood transfusion therapy, parental nutrition, paediatric intravenous therapy in practice and the safe handling and administration of intravenous cytotoxic drugs. The review of these different specialities will be essential reading for healthcare workers involved in any of these areas.

Without doubt this text provides an excellent update for any healthcare worker whose role includes intravenous therapy. It should be essential reading for nurses and also

doctors and will enable them to obtain an excellent knowledge base. The book is well referenced and written by authors' expert in their different areas. This book should become a standard reference text in the area.

Professor Tom Elliott
Divisional Director & Deputy Medical Director
University Hospital Birmingham NHS Foundation Trust
Birmingham, UK
November 2007

Preface

The administration of intravenous (i.v.) therapy is now a common part of most nurses' roles. The profession has moved a long way since the Breckenridge report in 1976 which first outlined nurses' responsibilities regarding the addition of drugs to infusion bags and their hanging—the sum total of a nurse's involvement in i.v. therapy in the United Kingdom at the time. Since then, i.v. therapy has become increasingly more complex, and as technology has advanced, so too has the degree of nursing involvement.

Nurses now not only prepare and administer drugs, but also assess, insert and remove both peripheral and central venous access devices; evaluate, select and purchase access devices and infusion equipment; and provide education and training in the many facets of this challenging area of practice.

There has also been a shift away from the hospital setting to the community, where i.v. therapy involves not only the healthcare professional, but also the patient and carer. As well as healthcare professionals in nursing and medicine, i.v. therapy also involves pharmacists, nutritionists and microbiologists. This has led to a demand for knowledge about i.v. therapy and its applications in all types of settings.

Over recent years The Royal College of Nursing Intravenous Therapy Forum has published guidance and standards for i.v. practice in the UK. The first definitive textbook written specifically for nurses in the UK was published in 1999; it is now time to provide an up-to-date comprehensive text based on recent evidence-based practice that includes practical procedures and problem-solving techniques.

The aim of this book is to provide the fundamental principles that underpin i.v. therapy, and any associated procedures, in a comprehensive and practical way.

Intravenous therapy is relevant to almost all areas of nursing, and features in specialities such as critical care and oncology. The book will help a wide range of healthcare professionals, including nurses and junior doctors. It will provide the student nurse with information on how to prepare and administer i.v. drugs for the first time, as well as informing the specialist nurse who wishes to expand her practice and insert peripherally inserted central catheters.

The book starts with the history of i.v. therapy and provides a comprehensive view of the development of the nurse's role and how practice has expanded. Professional, legal and ethical issues, including accountability and training, are also covered. No textbook on i.v. therapy would be complete without foundation chapters on anatomy and physiology, fluid and electrolyte balance and infection control.

The chapters on the pharmacology and safe administration and management of i.v. therapy are preparatory chapters for those healthcare professionals starting out in i.v. therapy. They set out the practicalities of how to prepare and administer i.v. therapy safely, along with the factors that influence the methods of drug administration and the responsibilities of each healthcare professional involved in the process. Another vital chapter concerns local and systemic complications: each complication associated with i.v. therapy is discussed, covering the recognition, prevention and treatment of each type. The chapter on flow control takes the reader from the simple gravity drip to the various complex electronic infusion devices, and includes guidance provided by the Medicines and Healthcare products Regulatory Agency on all intravenous equipment.

Venepuncture and cannulation are two of the most commonly performed invasive procedures and are now an integral part of many nurses' roles. The chapter on obtaining vascular access provides step-by-step instructions for performing these tasks, along with background on how these procedures impact on the patient.

Vascular access has always been a feature in the acute care setting, and there is a chapter to address the common issues related to the care and maintenance of central venous catheters, as well as complications of insertion. This theme is continued in the chapter on long-term central venous access, which provides readers with a step-by-step guide to the insertion and removal of peripherally inserted central catheters, and addresses the quality-of-life issues for patients living with a central venous access device. Most of these patients will be cared for in their own homes—hence the chapter on i.v. therapy in the community, which focuses on the advantages and disadvantages for patients and emphasizes the requirements for good information and teaching.

Finally, the last four chapters of the book focus on more specialist subjects. Blood transfusion and parenteral nutrition therapy are short but comprehensive chapters which provide the reader with a broad overview of the subjects. Paediatric i.v. therapy provides a view of many of the subjects covered throughout the book but from the paediatric perspective. The safe administration of cytotoxic drugs focuses specifically on the i.v. administration of these hazardous drugs and the problems associated with extravasation.

Many practices of i.v. therapy such as dressings and maintaining patency, still lack sufficient scientific evidence to support them. The aim of this book is to provide a balanced view of the available research and opinions of experts, which should enable the reader to come to his or her own conclusions regarding i.v. practice.

The contributing authors were selected for their expertise in the area covered in their chapters. They were felt to be clinically based practitioners with up-to-date knowledge and involvement in research and practice development in the field of i.v. therapy. The result is a book that will suit healthcare professionals, at every level and in almost every speciality, whose desire is to provide safe and evidence-based intravenous practice, with positive outcomes for the patient or client.

London, 2007

Lisa Dougherty
Julie Lamb

Acknowledgements

We were both delighted that the first edition was so well received and over the last few years we were asked when we were going to update the book. It is thanks to Blackwell Publishing that a second edition has become a reality and we would like to thank Beth Knight and Katharine Unwin for their support throughout the process.

We would also like to thank all the contributors—those who returned to update their chapters and the new authors who edited the remaining chapters. We feel that the book has been improved upon not only in content but also in layout.

I would like to again thank Val Speechley for inspiring me to become involved in the field of intravenous therapy—I never dreamt that I would still be excited by it 22 years on! I would also like to thank Liz who has supported me through all my writing and patiently waited 2 years for me to reappear from behind the computer screen!

Lisa Dougherty

My love and gratitude to my family; Mike for his enduring tolerance and patience and Beth and Tom, my *raison d'être*.

Julie Lamb

Section 1

Fundamentals

CHAPTER 1

Legal and Professional Aspects of Intravenous Therapy

Lorraine Hyde

Introduction

It is estimated that the majority of patients admitted to hospital at the beginning of the 21st century will require a vascular access device during some part of the patient journey (Petersen 2002). Technological advances and the vast range of vascular access used in different clinical settings have professional and legal implications for nursing practice. Infusion therapy is an integral aspect of nursing practice and can range from caring for a peripheral cannula to managing multiple and complex infusions and equipment (RCN 2005). Nurses must be aware of the law and how it relates to practice, especially in the dynamic arena of the NHS (*See* Box 1.1 for a history of intravenous therapy).

BOX 1.1

History of intravenous therapy

The recorded history of i.v. therapy began in 1492 when a blood transfusion from two Romans to the dying Pope Innocent was attempted. All three died.

In 1628, Sir William Harvey's discovery of the blood circulatory system formed the basis for more scientific experimentation. In 1658 Sir Christopher Wren predicted the possibility of introducing medication directly into the bloodstream, although it was Dr Robert Boyle who used a quill and bladder to inject opium into a dog in 1659, with J D Major succeeding with the first injection into a human in 1665.

A 15-year-old Parisian boy successfully received a transfusion of lamb's blood in 1667. However, subsequent animal to human transfusions proved fatal and eventually, in 1687, the practice was made illegal.

In 1834, James Blundell proved that only human blood was suitable for transfusion, and later that century Pasteur and Lister stressed the necessity for asepsis during infusion procedures.

In 1900 Karl Landsteiner led the way in identifying and classifying different blood groups, and in 1914 it was recognized that sodium citrate prevented clotting which opened the gate for the extensive use of blood transfusions.

Intravenous therapy was being used widely during World War II, and by the mid-1950s was being used mainly for the purposes of major surgery and rehydration only. Few medications were given via the i.v. route, with antibiotics more commonly being given intramuscularly.

(*Continued*)

BOX 1.1 (*Continued*)

Throughout the 1960s and 1970s, intermittent medications, filters, electronic infusion control devices and smaller plastic cannulae became available. Use of multiple electrolyte solutions and medications increased along with blood component therapy, and numerous i.v. drugs and antibiotics were being added to i.v. regimens.

The use of i.v. therapy has expanded dramatically over the last 35 years. This expansion continues to accelerate and can be attributed to the following factors:

- the understanding of hazards and complications
- improvement in i.v. equipment
- increased knowledge of physiological requirements
- increased knowledge of pharmacological and therapeutic implications
- increased availability of nutrients and drugs in i.v. solutions
- changes in the traditional roles of doctors and nurses, allowing nurses to develop skills that were traditionally the remit of the medical profession (e.g. insertion of central venous access devices).

In November 1992, the Department of Health's (DH's) Research & Development Division commissioned Greenhalgh & Company Ltd to undertake a 12-month research study into the interface between junior hospital doctors and ward nurses. The aim of the study was 'to contribute to the improvement in patient care' by examining the interface between junior hospital doctors and ward nurses with a view to enhancing the role of nurses and reducing the inappropriate workload of junior hospital doctors.

Within its terms of reference, three core questions were posed (Greenhalgh 1994):

1. What do junior doctors and nurses currently do?
2. What work is transferable between junior doctors and nurses for the benefit of patient care?
3. What model or exemplars of good practice in this interface between junior doctors and nurses can be identified and disseminated for the benefit of patients and the service?

At the end of the study, the report identified key findings and recommendations which showed an obvious need to look at current nursing and medical practice based upon technological advances in medical/nursing treatments and to move forward in partnership to provide an environment of care in which 'good practice' can flourish.

The expanding responsibility of nurses practising in intravenous (i.v.) therapy has both advantages and disadvantages. The nurse's emerging role offers rewards such as intellectual stimulation and professional satisfaction. However, the increase in responsibility brings with it the increased capacity for liability and the added potential of legal risks.

The nursing profession seeks to maintain and improve upon standards of care, and nurses on the register are accountable for an increasing range of responsibilities. Such responsibilities are increasingly complex in nature and some were traditionally the responsibility of the medical profession, such as insertion of central venous catheters. Therefore, nurses do require a working knowledge of the professional and legal responsibilities as it applies to their practice since it contributes towards best practice and enhances the therapeutic nurse–patient relationship (Cox 2001).

This chapter will focus upon the law as it applies to the nursing profession and the NHS. The professional dimension is discussed, focusing upon the Nursing and Midwifery Council (NMC) guidelines and principles for practice. The legal and professional dimension of intravenous therapy is explored using examples of practice issues.

Law and the Legal System

There are two main sources of law. The first is Acts of Parliament and Statutory Instruments which are enabled by the powers given to parliament (also known as statute law). 'Since 1688 the Crown in Parliament has been the supreme legislative body in

England, and subsequently in the United Kingdom' (Hodgson 2002, page 3). Statutes are formed in two ways. Firstly a statute is presented to the House of Commons as a bill. If this is sponsored by the government it will become legislation since it has government support. Private Members' Bills do not have the sponsorship of the government and will therefore only become law if they have government support (McHale 2001b). This type of law takes precedence over all other laws (Dimond 2005). There are many statutes which apply to nursing, such as the Nurses Midwives and Health Visitors Act 1997, the National Health Service Act 1977 and the Health Act 1999, to name but a few (Dimond 2005).

The second source of law is the common law (also known as case law), which is derived from decisions by judges in individual cases; these are often interpretations of statute law (Dimond 2005). Common law operates through a system of precedent. Therefore, a judge, in deciding upon an individual case, may be obliged to follow the decision of an earlier court. Decisions in the House of Lords, the highest court of the land, are binding in all lower courts (McHale 2001c).

In addition, English law is sometimes governed by laws laid down in Europe through our participation in the European Union (McHale 2001c, page 11). The European Union operates an agreement by member states to cooperate and collaborate in aspects of criminal justice and home affairs.

The legal system in England is divided into two main branches, criminal and civil law. Criminal law concentrates on crime and breaches can lead to prosecution, whilst civil law deals with all other cases (Hodgson 2002). Civil law is the branch of law whereby a negligence claim against a nurse would be heard. A patient who has suffered harm as a consequence of inadequate care whilst being treated by the nurse can claim compensation for a breach of duty of care. It is therefore important for the nurse to understand liability in relation to civil action. The legal aspects of nursing and the professional responsibilities of the nurse will now be explored.

Professional Guidelines

The main codes for nurses practising in the UK are:

- the International Council for Nurses (ICN) *Code of Ethics for Nurses* (ICN 2000)
- the NMC *Code of Professional Conduct: Standard for Conduct, Performance and Ethics* for nurses, midwives and specialist community public health nurses (NMC 2004a).

The first code of ethics was adopted by the ICN in Sao Paulo, Brazil, in July 1953. This code was subsequently revised at the ICN meetings in Frankfurt and Germany, and again in Mexico City in 1973, and further revised in 2000 (Tschudin 2003).

The first ICN code (1953) described the fundamental responsibility of the nurse as threefold:

- to conserve life
- to alleviate suffering
- to promote health.

Twenty years later, this duty was seen as fourfold:

- to promote health
- to prevent illness
- to restore health
- to alleviate suffering.

The ICN code (ICN 2000) is comprehensive in terms of ethical care and has four principal elements: nurses and people, nurses and practice, nurses and the profession,

nurses and co-workers. It acknowledges the universal need for nursing, the inherent respect for life and dignity, and the rights of humankind (Tschudin 2003).

Each man and woman who, following appropriate education and training, becomes a registered nurse, midwife or health visitor also becomes a member of one of the regulated health professions. The Nurses, Midwives and Health Visitors Act 1979 had empowered the then United Kingdom Central Council (UKCC) and the national boards to maintain the register and regulate nurses. A review of the statutory regulation of nurses was undertaken in 1999 and recommendations were made in the Health Act (1999). The UKCC was replaced by the Nursing and Midwifery Council (NMC) and new procedures for fitness to practice emerged (Dimond 2005). The NMC states that its principal function is 'to protect the public by ensuring that nurses and midwives provide high standards of care to their patients and clients'. To achieve its aims, the NMC:

- maintains a register of qualified nurses, midwives and specialist community public health nurses
- sets standards for conduct, performance and ethics
- provides advice for nurses and midwives
- considers allegations of misconduct, lack of competence or unfitness to practice due to ill health (NMC 2006).

In order to ensure that practitioners are fit for purpose and are able to provide relevant and evidence-based nursing interventions the NMC issued guidance to all practitioners as set out below.

'As a registered nurse, midwife or specialist community public health nurse, you are personally accountable for your practice. In caring for patients and clients, you must:

- respect the patient or client as an individual
- obtain consent before you give any treatment or care
- protect confidential information
- co-operate with others in the team
- maintain your professional knowledge and competence
- be trustworthy
- act to identify and minimise risk to patients and clients.'

These are the shared values of all the United Kingdom health care regulatory bodies' (NMC 2004a).

The document further states that there is a duty on all registrants to be aware of their personal accountability within the clinical context which means that the practitioner is 'answerable for their actions and omissions, regardless of advice or directions from another professional' (NMC 2004a). It is vital, therefore, that nurses maintain their knowledge and skills and embrace the notion of lifelong learning since health care is dynamic and nursing interventions need to be responsive and relevant. The code is requiring the nurse to apply clinical judgement which ensures safe practice and this can only be achieved through continuous learning and updating. Nurses are required by the NMC to maintain a professional portfolio which demonstrates knowledge and skill acquisition, and the document can be requested for scrutiny by the council at any time. In 2002, the NMC issued the *Code of Professional Conduct* which infers that the individual practitioner should be directed to recognizing and serving the interests of patients. Its purpose was to:

> 'inform the professions of the standard of professional conduct required of them in the exercise of their professional accountability and practice; inform the public, other professions and employers of the standard of professional conduct that they can expect from a registered practitioner' (NMC 2002).

It leaves no room for uncertainty or ambiguity, stating clearly that nurses are personally responsible for their practice. In 2004, the NMC reproduced the code, changing its name to *The NMC Code of Professional Conduct: Standards for Conduct, Performance and Ethics*. All references to 'nurses, midwives and health visitors' were replaced with 'nurses, midwives and specialist community public health nurses'. A new section was added to include indemnity insurance which reflects the growing culture of litigation within healthcare today (NMC 2004b).

Professional Registration

The Nursing Midwifery Order 2001 requires the NMC to have specific statutory functions and committees (Dimond 2005). One of the fundamental aspects of the NMC's functions is the maintenance of the register. The professional register is a means of declaring, to all those interested, that a reasonable standard of competence and conduct is expected from those named in it. Additionally, it is stating that these are the people to whom the NMC has declared its expectations, given its advice and presented its standards, and whom it can call to account.

Removal from the register

Under article 21 of the Nursing and Midwifery Order 2001, the Council is required to establish and review the standards of conduct, performance and ethics of registrants and prospective registrants and to give guidance on these matters and keep under review effective arrangements to protect the public from persons whose fitness to practice is impaired (Dimond 2005) (*See* Box 1.2). Fitness to practice implies a registrant's suitability to be on the register without restrictions. The NMC will deal with allegations that fitness to practice is impaired due to:

- misconduct
- lack of competence
- a conviction or caution (including a finding of guilt by a court martial)
- physical or mental ill health
- a finding by any other health or social care regulator or licensing body that a registrant's fitness to practice is impaired
- a fraudulent or incorrect entry in the NMC's register (NMC 2004b).

BOX 1.2

Issues that the NMC are regularly asked to consider (NMC 2004b)

- Physical, sexual or verbal abuse.
- Theft.
- Failure to keep proper records.
- Failure to provide adequate care.
- Deliberately concealing unsafe practice.
- Committing criminal offences.
- Continued lack of competence despite opportunities to improve.
- Impairment of fitness to practice due to physical or mental ill health include:
  - alcohol or drug dependence
  - untreated serious mental illness.

Anyone can make a complaint about a registrant to the NMC. The NMC committees that deal with all allegations of unfitness to practice are:

- the Screeners and Practice Committees who consider the allegation and establish if the complaint is well founded but who may refer the matter to the other committee for consideration
- the Investigating Committee (IC)
- the Conduct and Competence Committee (CCC)
- the Health Committee (HC).

When a complaint is received and the registrant is involved in a criminal investigation in relation to the allegations made against them, the NMC will wait for the outcome before proceeding. Fitness to practice procedures operate upon the principle that the individual is innocent until proven guilty, which means that a registrant can continue to practice until a judgement has been made. However, if patients, clients or the public would be exposed to an unacceptably high level of risk if the registrant continued to practice then the IC can impose an interim order. Interim orders are imposed for a maximum of 18 months. They must be reviewed for the first time within 6 months and thereafter every 3 months until the order is revoked or the case concluded (NMC 2004b).

Where the IC considers that there is a case to answer it may undertake mediation or refer the case to screeners for them to undertake mediation to the HC or the CCC. The CCC operates to the same high standard of proof as a court and hearings are generally held in public to encourage transparency and reflect the NMC's public accountability. The panel has a range of powers which include:

- issuing a caution
- suspension from the register or
- removal from the register.

Health Commitee proceedings are usually held in private because of the confidential nature of the medical evidence being considered. They can:

- issue a caution
- suspend from the register
- remove from the register.

When an HC panel removes a registrant's name from the register they may not apply for restoration to the register for 5 years from the date of the removal. Anyone who has been removed from the register has the right to apply to be restored to it. Restoration cases are considered by panels of either the CCC or the HC as appropriate.

Professional Accountability

It is important for the nurse to appreciate the differences in terms of accountability within the four arenas in Figure 1.1 since there can be an overlap between professional accountability and legal accountability. An example of this may be the situation where a nurse fails to stop at the scene of a road accident. This is not a violation of the law but from a professional perspective the NMC may call her to account since there was a breach of its code of professional conduct (Dimond 2005). The code states: '8.5 In an emergency, in or outside the work setting, you have a professional duty to provide care. The care provided would be judged against what would reasonably be expected from someone with your knowledge, skills and abilities when placed in those particular circumstances' (NMC 2004a).

Accountability must be regarded as implicit within any area of practice where the professional practitioner delivers care. The practitioner has to make judgements and be answerable

for those judgements. The NMC define accountability as 'responsible for something or to someone' which means that the nurse has an obligation or duty of care to the patient. To be responsible, however, it is necessary to have knowledge, and this includes knowledge of the law. Ignorance of the law is no defence, and therefore the nurse should be aware of the limits that the law imposes upon her as well as the power it gives (Dimond 2005).

Clark (2000) describes accountability as meaning 'the professional takes a decision or action not because someone has told him or her to do so, but because, having weighed up the alternatives and consequences in the light of the best available knowledge, he or she believes that it is the right decision or action to take'.

The NMC assert that although a nurse can be responsible for an action, accountability means being able to explain why. In exercising their professional duty nurses must be able to justify their actions and decisions, and clearly this is not possible unless a nurse has the necessary knowledge. Therefore, accountability requires knowledge (Cox 2001). As well as knowledge this means accountability is concerned with how far the nurse can be held in law to account for her actions. Certainly any profession will use the term accountability as a fundamental measure of its status as a profession.

Because of its dependence on such issues as authority and autonomy, the concept of accountability is closely related to the concept of professionalism. The modern concept of accountability, applied to nursing, assumes that the nurse is a member of a profession (McGann 2004). Watson (2004) maintains that 'accountability is the hallmark of a profession' since it is a framework for exercising the professional aspects of the work of nurses and midwives: those parts of their roles and jobs for which they have been trained.

Nursing has some of the features of a profession in that training and a registered qualification are both required in order to practise. By virtue of this, nurses become accountable to the general public for their practice and this accountability is regulated by a statutory body, the NMC, which as stated earlier is responsible for the training of nurses and holds the authority to remove individuals from the register and thereby their right to practise (Watson 2004).

The NMC states that registrants have a duty to the profession to behave in a manner which upholds codes of conduct, maintains the reputation of the profession and justifies public trust and confidence (NMC 2004a). This principle applies whether the nurse is on duty or not, or indeed is in employment or not. Therefore nurses have personal accountability in terms of their values and belief system. For example, if a nurse is negligent then he or she has to come to terms with the decision taken and be able to justify the misconduct if required.

Tschudin (2003) discusses accountability not only as meaning having to answer for an action when something goes wrong, but also as a continuous process of monitoring how a nurse performs professionally. The responsibility differs in different situations, but there is a need to be aware that one is constantly accountable. A distinction needs to be made between legal and moral accountability. This viewpoint is shared by Tingle (2004, page 56) who states 'accountability is a worthy pursuit for nurses and that the periodic exercising of accountability—when things go wrong—is only really possible if nurses learn to be accountable continually.'

Legal Accountability

Legal accountability is the principal form of accountability for every citizen, and nurses like all other professionals are personally accountable through the law for their actions or omissions. This individual legal accountability is channelled through the criminal and civil law in the courts (Tingle 2004). The law assumes that ignorance of accountability will not be an excuse should a legal action result. Consequently, it is imperative that nurses are aware of the legal aspects of their role (Figure 1.1).

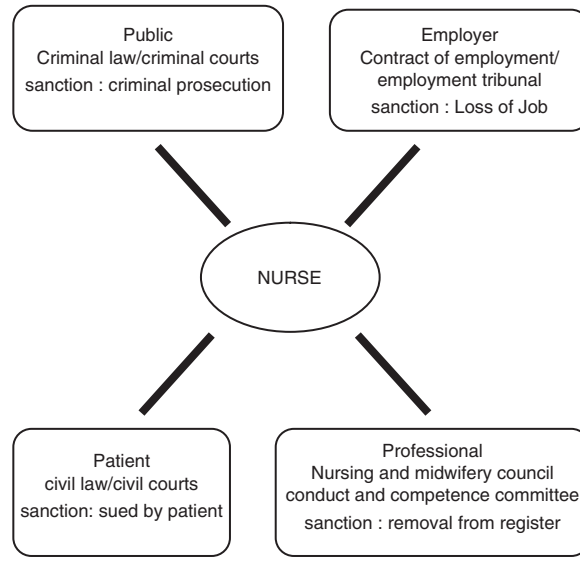

Figure 1.1 The four areas of accountability.

Litigation within healthcare in the United Kingdom (UK) has increased over the years and has huge financial implications for the NHS (Dougherty 2003). It has been estimated that almost £4 million is required to settle the actual and potential claims from events that have occurred within healthcare (Dimond 2005). Many nurses are becoming involved in providing expert advice to the courts when a clinical negligence claim is being pursued by a patient or relative. Since most judges have no medical or nursing expertise they rely on information provided by expert witnesses in order to come to a decision about an individual case. An expert witness is defined as 'a non-lawyer specialist in a particular field who is asked by a solicitor to give an independent opinion on a particular case' (Dougherty 2003, page 29). The expert witness uses their knowledge and expertise to provide non-biased information on the case to the solicitor and therefore requires good analytical, writing and communication skills.

The reality of nursing within an increasingly complex healthcare delivery system, with its risks of litigation, is reflected in the NMC Code of Conduct which suggests that healthcare professionals ensure that they have indemnity insurance (NMC 2004a).

Nursing Responsibility

The increase in knowledge and technological advances in i.v.-related equipment within i.v. therapy and the expanding use of toxic drugs have led to a growing appreciation of the need for accuracy and vigilance in the administration of i.v. drugs and fluids. Organizations are now concerned with clinical risk, and there are many strategies advocated by organizations such as the National Patient Safety Agency (NPSA), to reduce the potential for error—for example, standardizing i.v. infusion devices to avoid the healthcare worker becoming confused by the range of different pumps. The NPSA was set up in response to the government report *An Organisation with a Memory* (DH 2000a) and its prime function was to improve patient safety by reducing the risk of harm through error. The report states that every year 400 people die or are seriously injured in adverse events involving medical devices. One of the targets identified in the report was to reduce serious error in the use of medicines by the end of 2005.

The NPSA links in with the The Reporting of Injuries, Diseases and Dangerous Occurences Regulations 1995 (RIDDOR 95) reporting scheme. It examines the extent to which the NHS organizations learn from untoward incidents and service failures to ensure that similar situations are avoided in the future, draws conclusions and makes recommendations. The premise is that the NHS moves away from the culture of 'blame' and embraces a true understanding of the root causes of failures and errors (Dimond 2005). This type of transparency ensures that healthcare is responsible and accountable for its functions but is responsive to the ever changing arena of healthcare. Nurses must be aware of their responsibility to ensure that their practice is safe and to report untoward incidents immediately. The NMC states that it is important that an open culture of reporting medication errors is encouraged, and the nurse is responsible for immediately reporting errors or incidents in the administration of medicines (NMC 2004c).

The concept of responsibility can be divided into:

- the personal aspect of being responsible
- the legal aspect of having responsibility (Tschudin 2003).

There may be circumstances where a nurse could be held morally responsible but where there is no legal liability. For example, if a nurse fails to volunteer her services at the scene of a road accident, the law at present recognizes no legal duty to volunteer help and thus any legal action brought against the nurse would fail. However, many would hold that there is a moral duty to use her skills to help a fellow human being. Obviously the law and ethics overlap, but each is both wider and narrower than the other (Dimond 2005).

Nurses, however, have responsibilities not only to their patients, but also to the profession and to society as a whole. They have a responsibility not only to improve their own knowledge and skills, but also to contribute to the development of knowledge and skills within the profession as a whole (NMC 2004a).

Responsibility is not complete without accountability. Many responsibilities and duties are only seen clearly when something goes wrong. Values are only discovered through challenges. The NMC code is essentially a document outlining nurses' responsibilities.

Duty of Care

All nurses owe their patients a duty of care. Liability is likely to follow if that duty is breached. A breach will consist of a failure to meet the requisite standard of care. Difficulties can occur as to whether a duty of care exists, especially in circumstances outside the employment situation. A duty of care is not owed universally and the claimant bringing the action has to show that a duty of care was owed to him or her personally (Dimond 2005). However, if the nurse at the scene of an accident declares she is a nurse and helps, then from the professional context she has taken on a duty of care (NMC 2004a , page 11). However, in law there is no duty required of her unless there is 'a pre-existing relationship between the parties' (Dimond 2005, page 40).

The standard of care required is determined by the Bolam test: 'the standard of the ordinary skilled man exercising and professing to have that special skill. A man need not possess the highest expert skill at the risk of being found negligent. It is a well-established law that it is sufficient if he exercise the ordinary skill of an ordinary man exercising that particular art' (Bolam v Fern Hospital Management Committee 1957). This standard is a well-established principle (Dimond 2005, page 42). However Bolitho (1997) asserted that when challenged, if expert opinion could not withstand logical analysis then the judge has the right to conclude that the body of opinion is not reasonable or responsible (Foster 2002). Therefore, when justifying a clinical decision practitioners would be expected to acknowledge the risks and benefits in the particular situation. The competencies of the

individual as well as their ability to consider national and local clinical guidelines in order to make a decision would be scrutinized, if the practitioner's clinical judgement was the subject of litigation. Healthcare practitioners would also be required to demonstrate that their knowledge was relevant and up to date, a principle which is reflected by the NMC Code of Conduct which embraces the notion that lifelong learning and being fit for purpose are fundamental to the role of the nurse (NMC 2004a).

Lord Aitkin laid down the basis of the duty of care that we owe to others in Donaghue v Stevenson (1932) (Dimond 2005). A person must take reasonable care to avoid acts or omissions that he can reasonably foresee would be likely to injure a person directly affected by those acts. This concept forms a cornerstone of the civil wrong of negligence where a breach of duty with resultant harm constitutes liability, and later cases have only served to refine this (Dimond 2005).

For a successful litigation outcome, the plaintiff must establish three principles based on the balance of probabilities:

- that a duty of care is owed by the defendant to the plaintiff
- that there has been a breach of that duty
- that, as a result of that breach, the plaintiff has suffered harm of a kind recognized in law and which is not too remote.

For example, a litigation claim could be evoked if in the course of her duty, a nurse made a drug administration error which caused the patient distress and injury.

Vicarious Liability

NHS trusts and other employers have two forms of liability: (1) direct liability, i.e. the Trust itself is at fault; and (2) vicarious or indirect liability, i.e. the Trust is responsible for the faults of others, mainly its employees (Dimond 2005). It is a necessary requirement that the employee was acting within the course of their employment when the incident occurred and that the employee was authorized to perform the procedure (Tingle 2001a). For example, a nurse is employed on a surgical unit and obtains a blood sample from a patient. However, she has not had the training to undertake the task and has not been authorized to perform the task by the hospital. The patient could then sue the nurse. If a nurse commits a negligent act then he or she is personally responsible and accountable for the negligence. It is possible that the employer could seek to recover any compensation which may be paid out. However, the Department of Health (DH) advises against this in practice (Tingle 2001a; Dimond 2005).

Indemnity insurance is provided for the nurse via professional organizations or trade unions. In a consultation paper (2002) the NMC considered making it a compulsory requirement for nurses but decided against it (Dimond 2005). It recommended instead that a registered nurse, midwife or specialist community public health nurse, in advising, treating and caring for patients/clients, has professional indemnity insurance. This is in the interests of clients, patients and registrants in the event of claims of professional negligence (NMC 2004a; Dimond 2005).

Legal Aspects of Medicines

The main legislation controlling the supply, storage and administration of medicines is the Medicines Act 1968 (DH 1968) and the Misuse of Drugs Act 1971. Nurse should be familiar with subsequent statutory instruments such as the Misuse of Drug Regulations (2001) which makes provision for the classification of controlled drugs, their possession,

supply and manufacture. The previous Medicines Control Agency has now been incorporated into the Medicines and Healthcare products Regulatory Agency (MHRA) (Dimond 2005). Guidance on the administration of medicines is provided by the NMC's document *Guidelines for the Administration of Medicines* (2004c) and whilst this has no legal force it is the standard by which the nurse would be measured in terms of her professional accountability. Nurses should be familiar with the *British National Formulary* as an excellent resource for accurate information on medicines.(Before administering each drug, the nurse should complete the following checklists.

- Correct patient—consent, information.
- Correct drug—side-effects, reconstitution, diluent.
- Correct dose.
- Correct site and method of administration—check patency of venous access device if to be given intravenously.
- Correct procedure—level of competence of nurse, safe reconstitution, safe equipment, asepsis.
- Correct record-keeping.

One such document, the *Guidelines for the Administration of Medicines* (NMC 2004c) states clearly that the Council has prepared these standards to assist practitioners to fulfill the expectations it has of them, to serve more effectively the interests of patients and clients, and to maintain and enhance standards of practice. It continues to list a number of principles in which the practitioner must exercise their professional judgement (*See* Box 1.3).

Nurse Prescribing

The history of nurse prescribing is a long one. It began in 1978 when the Association of Nursing Practice (ANP) and the Royal College of Nursing (RCN) presented a report to its parent body entitled *District Nurses' Dressings* (RCN 1978) which had raised concerns over the reliance on GP prescriptions in order for the district nurse to deliver care (Jones 1999, page 6). At that time the government had commissioned a review of community nursing provision in England under the chairmanship of Julia Cumberledge.

BOX 1.3

Guidelines for the administration of medicines (NMC 2004c, page 4)

Principles in relation to the prescription

- Be based, whenever possible, on the patient's informed consent and awareness of purpose of the treatment.
- Be clearly written, typed or computer-generated and be indelible.
- Clearly identify the patient for whom the medication is intended.
- Record the weight of the patient on the prescription sheet where the dosage of medication is related to weight.
- Clearly specify the substance to be administered, using its generic or brand name where appropriate and its stated form, together with the strength, dosage, timing, frequency of administration, start and finish dates and the route of administration.
- Be signed and dated by the authorized prescriber.
- Not be for a substance to which the patient is known to be allergic or otherwise unable to tolerate.
- In the case of controlled drugs, specify the dosage and the number of dosage units or total course; if in an out-patient or community setting, the prescription should be in the prescriber's own handwriting; some prescribers are subject to handwriting exemption but the prescription must be signed and dated by the prescriber.

Nurse prescribing is an acknowledgement and endorsement of the current contribution of nurses to patient care and a recognition of the need to supply items necessary for effective nursing treatment.

To prescribe effectively, nurses need:

- an increased awareness of professional accountability
- a full understanding of the process of assessment and diagnosis that results in the act of prescribing
- knowledge of therapeutics and practical prescribing (Andrews 1994).

It was the Cumberledge Report (Cumberledge 1986) that first identified the need for limited nurse prescribing:

> The DHSS should agree a limited list of items and simple agents which may be prescribed by nurses as part of a nursing care programme and issue guidelines to enable nurses to control drug dosage in well defined circumstances.

The report was positively received by government, and Dr June Crown was asked to lead an advisory group to report back to government by 1 October 1987. Following a number of subsequent reports which recommended that nurses should prescribe from a limited formulary, the Nurse Prescribing Advisory Group (DH 1989) Crown Report ('the First Crown Report') made 27 recommendations addressed to the DH, the UKCC, health authorities and the professions. These recommendations relate to six core areas:

- practice
- education
- administration
- legal issues
- communication
- public safeguards.

The nurse's prescribing powers have developed dramatically in recent years. Following the publication of the First Crown Report, legislation has been passed to allow nurses to prescribe (DH 1992). There are currently four pieces of legislation that define the legal situation for nurses involved in the supply and administration of 'prescription-only medicines' (Dimond 2005).

- The Medicines Act 1968—this is the starting point; Section 58 describes current requirements.
- The Medicines Order (1983)—this legislation explains in further detail particular aspects of the Medicines Act 1968 and gives legal definitions of the terms used.
- Medicinal Products: Prescribing for Nurses Act 1992 (DH 1992)—this provides legal authorization to nurses to be involved in the supply and administration of 'prescription-only medicines' and states in Section 1 that 'registered nurses, midwives and health visitors … who comply with such conditions as may be specified' could become appropriate practitioners.
- Medicines Order (1994)—this outlines the conditions to be met by nurses who are to be prescribing practitioners.

On page 2 of the DH document *Improving Patients' Access to Medicines: A Guide to Implementing Nurse and Pharmacist Prescribing within the NHS in England* (DH 2006) independent prescribing is defined as 'Prescribing by a practitioner responsible and accountable for the assessment of patients with diagnosed or undiagnosed conditions and for decisions about clinical management required, including prescribing'. The document emphasizes the fundamental requirement for all healthcare professionals involved in

prescribing to have relevant education, experience and competence according to professional codes of practice. Among other issues, the document is a guide on levels of responsibility, educational requirements and clinical governance issues.

In summary, nurse prescribing has developed rapidly and the law now allows nurses in hospitals and primary care to issue prescriptions from the BNF for any drug within their area of competence (DH 2006). These additional responsibilities must, however, be coupled with the necessary education and competence as well as a systematic approach to maintaining knowledge.

Record-keeping

Record-keeping is an integral part of nursing, midwifery and specialist community public health nursing practice. It is a tool of professional practice and one that should help the care process. It is not separate from this process and it is not an optional extra to be fitted in if circumstances allow (NMC 2005). The NMC guidelines on record-keeping was revised in 2004 to bring it in line with changes brought about by the Nursing and Midwifery Order 2001, and was further revised in 2005 to clarify information supplied regarding current legislation (NMC 2005).

Accurate, accessible and comprehensive documentation of the care given to and condition of a patient is essential for effective and high-quality patient care, and continuity of care between different health practitioners (Cox 2001). In 2000 the Health Service Commissioner stated that poor record-keeping was a feature of many of the complaints that he investigated. Consequences of poor record-keeping are threefold:

- patient care is compromised
- the practitioner and employer lose protection against negligence claims
- the practitioner is acting contrary to her professional code of practice (Cox 2001).

Furthermore, the NMC states that the quality of record-keeping is also a reflection of the standard of a practitioner's professional practice. Good record-keeping is a mark of the skilled and safe practitioner, whilst careless or incomplete record-keeping often highlights wider problems with the individual's practice (NMC 2005). The NMC also states that it is good practice to retain records in relation to the Human Rights Act 2001 and the Caldicott Report 1997 (DH 1997).

The government's commitment to computerized record-keeping and investment in computer technology means that these types of record will become the norm and it is important that the nurse is familiar with good practice guidelines. Clarity of records as well as legibility and avoiding use of abbreviations will help ensure high standards of record-keeping. The DH document *Winning Ways: Working together to reduce Healthcare Associated Infection in England* (DH 2003) gives guidelines on documenting details regarding the vascular access device including date and time of insertion and removal of device. Accurate record-keeping in terms of infection control is viewed as pivotal to the reduction in catheter-related infections.

The Caldicott Committee was established to undertake a review of the information sources for patient data within the NHS organizations and other agencies for purposes other than direct care or medical research or where there is a statutory requirement for information (DH 1997). It recommended that guardians should be appointed to ensure that shared information between healthcare providers should be given on 'a need to know' basis with confidentiality health checks performed each year (McHale 2001b). These principles help ensure that patient details are recorded, stored and disseminated appropriately.

The importance of nurses keeping accurate and thorough records can never be underestimated, and to neglect this area of practice is to open oneself to professional and legal

complications. Failure to maintain reasonable standards of record-keeping could be evidence of professional misconduct and subject to professional conduct proceedings. Furthermore, any documents produced in a court of law will be subject to close scrutiny and therefore any weaknesses in record-keeping would compromise the professional when they came to give evidence (Dimond 2005).

Consent to Treatment

The notion of informed consent stems from the 1947 Nuremberg trials of 23 Nazi doctors accused of crimes involving human subjects. The Nuremberg Code (1947) laid down 10 standards to which doctors must conform when carrying out experiments on human subjects. Subsequently, guidance in the Declaration of Helsinki 1964, updated in 2000, states 'the ethical principles to provide guidance to physicians and other participants in medical research involving human subjects' (Tschudin 2003, page 94).

The idea of consent is based on the principle of respect for the person and thus on the concept of human rights of life and liberty (Tschudin 2003). Central to thinking about the nursing care of the patient is the philosophical concept of autonomy. On the premise that people know what is in their best interest, the ethical principle states that the choices of mature people must be respected and, reflecting this principle, the law insists that consent is, in the vast majority of cases, a prerequisite to the care of the patient (Cox 2001).

As a registered nurse, midwife or specialist community public health nurse, you must obtain consent before you give any treatment or care. Furthermore, when obtaining valid consent you must be sure it is:

- given by a legally competent person
- given voluntarily
- informed

(NMC 2004a)

Consent can be given in a variety of ways and, as far as the law is concerned, there is no specific requirement that consent for treatment should be given in any particular way. Verbal, implied, written and expressed consent are all equally valid; however, they can vary in their value as evidence in proving that consent was given (Dimond 2005). Consent is not just about the patient saying 'yes', but also about them saying 'no', which can be a challenge for some healthcare professionals (Tschudin 2003).

Some examples of different types of consent follow.

Verbal consent, for example, would be where the nurse asks the patient's permission to obtain a blood sample and the patient agrees to the procedure.
Implied consent is given if the nurse asks the patient for permission to insert a peripheral cannula and the patient holds out their arm for the procedure.
Written consent is obtained by asking the patient to sign a document to state that they understand the procedure, for example, insertion of a central venous catheter.

The DH updated its guidance on consent to examination and treatment in 2001, the intention being that it was a reference document which should be regularly updated (Dimond 2005).

Essentially, most nursing actions are invasions of a person's privacy. Most of these actions are considered necessary and consent is given implicitly by going into hospital. This, however, should never be taken for granted. Giving full explanations of what is being done, and why, how and when, is essential for the patient to remain a free agent and exercise the right to say no (Tschudin 2003).