



POSITION STATEMENT ON THE MINIMUM EDUCATION AND SAFETY REQUIREMENTS FOR NURSES INVOLVED IN THE ADMINISTRATION OF CYTOTOXIC DRUGS

Preamble

Cytotoxic drugs are therapeutic agents intended primarily for the treatment of cancer. The use of cytotoxic agents as a component of cancer treatment has increased rapidly over the past few decades, largely due to scientific developments in the area of cancer biology¹. Cytotoxic drugs have thus become a standard form of treatment for a large number of people with cancer.

Traditionally, people receiving cytotoxic therapy have been managed in specialised tertiary treatment facilities in major metropolitan cities. However, improvements in side effect management combined with demands for cost containment, advances in technology and a greater emphasis on consumer preferences has contributed to increased numbers of smaller centres providing chemotherapy services in metropolitan, rural and remote communities. Cytotoxic drugs today are thus delivered in many different health care settings throughout Australia.

Cytotoxic drugs are highly toxic to cells, are administered via a variety of routes and formulations, and are typically delivered over extended periods. The person receiving cytotoxic therapy can thus experience a wide range of stressors and acute and chronic adverse effects requiring specialised clinical and supportive interventions¹.

Cytotoxic drugs also present specific risks for health care personnel, as they are known to be mutagenic, carcinogenic and teratogenic². Exposure to cytotoxic drugs and their waste during preparation, administration and disposal thus presents an occupational hazard for health care workers³. Nurses with specialised knowledge and skills therefore play a major role in ensuring safe and competent administration of cytotoxic drugs and care of people receiving these treatments.

CNSA Beliefs

The Cancer Nurses Society of Australia believes that nurses should abide by legislation, guidelines and professional standards relevant to their scope of practice. As stated in the Code of Professional Conduct for Nurses in Australia⁴ and the Code of Ethics for Nurses in Australia⁵, this requires that:

- The nurse is personally accountable for the provision of safe and competent nursing care. Therefore, it is the responsibility of each nurse to maintain the competence necessary for current practice.
- Maintenance of competence includes participation in ongoing professional education to maintain and upgrade knowledge and skills relevant to practice in a clinical, management, education or research setting.
- A nurse must be aware that undertaking activities that are not within their scope of practice may compromise the safety of an individual. The scope of practice is based on each nurse's education, knowledge, competency, extent of experience and lawful authority.
- Nurses must be familiar with relevant laws to ensure that they do not engage in practices prohibited by such laws or delegate to others activities prohibited by those laws.

In addition, the Cancer Nurses Society of Australia believes that:

- Specific education and training is necessary for health care personnel involved in the administration of cytotoxic agents, in order to minimise the risk of exposure of health care personnel and ensure safe and quality health services for people receiving cytotoxic therapy.
- Only registered nurses with specialised education and training in the safe handling of cytotoxic drugs and related waste should administer cytotoxic chemotherapy.
- Employers should ensure nurses involved in administering cytotoxic drugs have access to education, training, and other resources necessary to ensure minimum professional and safety standards are met.
- Employers should ensure that processes are in place to allow nurses to maintain their competency and scope of practice in this field.

Rationale

Cytotoxic therapy regimens are highly toxic to cells, and can result in a range of acute and chronic adverse effects for persons receiving these treatments¹. A number of these adverse effects are potentially life threatening. The safe and effective delivery of these drugs therefore requires highly complex clinical assessment, technical and problem solving skills. Furthermore, there is considerable evidence that people who receive cytotoxic treatment for cancer experience considerable psychological distress, and will have high levels of need for specialised information and support⁶. Since cytotoxic treatments are often delivered over extended periods of time and require ongoing monitoring and follow up for the patient, coordination of care for the person receiving them also requires advanced nursing skills.

Cytotoxic drugs are classified as hazardous substances, since they are capable of causing toxicity to personnel who are exposed to them⁷. While the actual effects of low level occupational exposure to cytotoxic agents remains unclear, a recent review of evidence suggests that internal exposure to cytotoxic agents can lead to mutagenic, teratogenic and/or carcinogenic consequences⁷. This exposure can occur through absorption of drugs direct contact, inhalation of aerosols and drug particles, ingestion, or injection through accidental needle stick injury. Relevant State and Territory guidelines therefore recommend safety procedures to avoid exposure and minimise potential hazards from cytotoxic drugs by highlighting a responsible approach to practice^{8,9,10}. Evidence suggests that if measures such as those outlined in these professional guidelines are employed, the potential risks associated with occupational exposure to cytotoxic drugs and related waste may be minimised⁷.

Minimum Requirements

The Cancer Nurses Society of Australia recommends the following minimum educational requirements for nurses involved in the administration of cytotoxic drugs.

A nurse must have satisfactorily completed education in cytotoxic administration prior to administering any cytotoxic agent. This education should include both theoretical and clinical components and address as a minimum the following topics:

- Cancer cell biology and principles of cytotoxic drug development.
- Principles of safe chemotherapy administration.
- Drug preparation, storage and transportation.
- Principles of safe handling of cytotoxic agents and related waste.
- Adverse effects and toxicities associated with cytotoxic agents, early identification, ongoing monitoring, and principles of prevention and management of these adverse effects and toxicities.
- Education and psychological support for persons receiving cytotoxic drugs.
- Ethical and legal issues associated with the administration of cytotoxic therapy.

Nurses should demonstrate a minimum level of theoretical knowledge and practical skills in each of the above areas prior to administering cytotoxic drugs.

Further education and training for nurses involved in administering cytotoxic drugs should be undertaken when new agents, protocols or equipment are introduced or when procedures change. A nurse's continuing competence in the administration of cytotoxic agents should be maintained through participation in relevant professional development and education activities regularly, ideally on an annual basis.

The Cancer Nurses Society of Australia recommends that, prior to the administration of any cytotoxic drug, nurses involved in the administration of cytotoxic agents have access to the following information and resources as a minimum requirement for ensuring the safety of the patient and nurse:

- A written order, signed by an appropriately qualified medical practitioner.
- Relevant information on medical and surgical conditions including allergies.
- All recent records, including investigations and pathology results to enable identification of any contraindications and/or factors that increase an individual's risk for toxicities associated with the cytotoxic drug/s. These should include, but is not limited to, a full blood count and differential.
- All recent investigations and pathology results to enable adequate assessment of patient responses to previous cycles of cytotoxic drug/s.
- Emergency drugs and emergency procedure protocols.
- Protocols and equipment for management of extravasation.
- Protocols and equipment for managing spillage.
- Information on prescribed drugs and drug protocols, their actions, side effects and any specific implications for administration and patient care.
- Record of patient height and current weight as well as formula or nomogram to calculate body surface area.

- Presentation of drugs in a ready to administer form.
- Personal protective equipment.
- Cytotoxic waste management equipment/facilities.
- An environment for administering chemotherapy, which has adequate lighting and space.
- Material data safety sheets.
- A medical practitioner who has training and experience in the management of adverse events.
- Guidelines and institutional policies and procedures regarding safe administration and handling of cytotoxic drugs and related wastes.

References

1. Perry, MC. (Ed). (1996) The Chemotherapy Source Book. 2nd ed. United States of America: Williams & Wilkins.
2. Jones, L. S., Whittenberg, J., Nail, L., Greene, D., & Flannery, M. (1987). Occupational hazards for nurses exposed to radiation and antineoplastic agents. N.Y.S.N.A. Journal, 18, 3, 42-60.
3. Baker, E. S., & Connor, T. H. (1996). Monitoring occupational exposure to cancer chemotherapy drugs – Review Article. Am J Health-Syst Pharm. 53, 2713-2723.
4. Australian Nursing Council (2003) Code of Professional Conduct for Nurses in Australia.
5. Australian Nursing Council Inc (1993) ANCI Code of Ethics for Nurses in Australia.
6. National Health and Medical Research Council (2001) Psychosocial Clinical Practice Guidelines.
7. Oncology Nursing Society (2003) Safe Handling of Hazardous Drugs Oncology Nursing Society : Pittsburgh.
8. Department of Training and Industrial Relations (1997). Guide for Handling Cytotoxic (Antineoplastic) Drugs and Related Waste. Queensland Government.
9. Workcover Authority of New South Wales (1995). Guidelines for handling cytotoxic drugs and related waste in health care establishments (2nd edition). New South Wales Government.
10. Victorian Workcover Authority (2003). Handling cytotoxic drugs in the workplace. Victorian Government.

For further information, please contact:

Chair, Cancer Nurses Society of Australia

c/- GPO Box 4708

Sydney, NSW, 2001

Ph: 02 9036 3100

Email: info@cnsa.org.au

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