CANADIAN PAEDIATRIC SOCIETY STATEMENT

FN 2000-03

Enhanced roles for health professionals in newborn care

In recent years, there have been considerable improvements in the care and outcome for newborn infants, particularly those with complex health care needs (1,2). In addition to physicians and nurses, an increasing number of health care professionals, including respiratory therapists, physiotherapists, pharmacists, dietitians, occupational therapists and others, have become important members of the neonatal health care team. The current statement should not diminish the present or future roles of physicians in newborn care but is intended to provide information and guidance in support of enhanced roles for other health professionals in the care of newborn babies.

The evolution of enhanced roles in neonatal care began with the development of increased interests, knowledge and skills among all health care professionals. Just as paediatricians subspecialized in neonatology, neonatal nurses, respiratory therapists, dietitians, social workers and pharmacists developed a range of knowledge and skills specific to the performance of clinical service in the neonatal unit, and in neonatal research and education.

Subsequently, practitioners developed skills that previously had been limited to other groups of health care professionals, most often physicians. Nurses and respiratory therapists performed such delegated acts as arterial puncture or intubation following a process of certification. Dietitians and clinical pharmacists ordered parenteral nutrition; a counter signature by a physician was often required.

The third stage in the evolution of enhanced performance was the development of staff with a wider range of specialized knowledge and technical and nontechnical skills designed to meet specific needs in a limited practice environment. This is exemplified by the development of roles, such as a transport nurse or transport respiratory therapist, through a process of hospital-based certification that may follow university or college courses and/or educational programs developed in individual hospitals.

The final and most recent stage has been the development of entirely new roles with a wide range of knowledge, skills and interdisciplinary responsibilities. Advanced practice is the term used to describe a health care professional (usually a nurse) who, in collaboration with the physician, provides comprehensive care for a group of patients, including skills strictly within the scope of medicine (3-5). The clinical nurse specialist/neonatal practitioners (CNS/NP), with university preparation at the master's level, have been shown to provide a quality of care equivalent to that of paediatric residents, when measured by neonatal mortality, morbidity, length of stay and cost of patient care (6-8). In addition, reported benefits include enhanced levels of parental satisfaction. The roles of CNS/NPs are addressed in "Advanced practice nursing roles in neonatal care" (9).

While enhanced roles have developed somewhat differently among various nonmedical health professional groups, they share several common factors:

- the increasing complexity and range of technology provided in neonatal care;
- the availability of a different set of qualifications and skills provided by other professionals;
- increasing survival, particularly of very low birth weight infants, resulting in increasing patient numbers requiring specialized care;
- the need to supplement declining numbers and availability of residents working in the neonatal intensive care unit (NICU); and
- the need for all health care professionals to develop or establish a broader scope of practice and increased academic responsibility.

Nurses

Neonatal intensive care has significant implications for both human resources and economic resources in Canada (10). Although master's-prepared nurses have been successful in Canada (8), there is a perception that sufficient numbers are neither available now nor are they likely to be in the near future to meet anticipated needs for patient care. Enhanced roles for other nurses in neonatal care assist the professional development of nurses while helping to meet important patient needs. Nurses certified with specialized education and nurses with master's degrees have worked successfully and cooperatively in the same NICU (11). Formal educational requirements, and in some cases reporting structure, appropriate for advanced practice nurses may be less applicable to other health care professionals and nurses working in more defined roles.

Respiratory therapists

In addition to their traditional roles, which have expanded from ventilation management to pulmonary function measurements and monitoring, respiratory therapists have been given responsibilities for newborn resuscitation, including leadership of the resuscitation team in selected circumstances (12,13). In one study, duties also included patient evaluation, feeding, skin and oral care, and procedures such as obtaining arterial and venous blood sampling for laboratory tests (14). Participation as members of neonatal transport teams has also facilitated the development of specialized aspects of care, such as the administration of nitric oxide during neonatal transport (15).

Pharmacists

Contributions of clinical pharmacists in the NICU have been shown to improve the appropriate use of medications and detection of potential adverse effects on neonates (16,17). Neonatal pharmacists provide a specialized form of neonatal assessment and may attend daily clinical care rounds as partners in the health care of seriously ill neonates (18). In some NICUs, pharmacists have additional responsibilities related to the ordering of parenteral nutrition, parent education, and research into the efficacy and safety of medications administered to neonates (17,18).

Dietitians

With improvement in the survival of extremely low birth weight infants, complex nutritional issues have emerged (19). Neonatal dietitians or nutritionists provide ongoing assessment of an infant's nutritional status, assist in the development of nutritional care plans, and are involved in both educational programs and research in the neonatal area (19-23). The National Research Council in the United States recommends that level III NICUs include a registered dietitian with either advanced paediatric training that involves clinical neonatal nutrition or clinical experience in the nutritional care of critically ill newborn infants (24). A recent Canadian survey showed that dietitians worked in 24 of 26 reporting level III NICUs, although their educational preparation and specific contributions to patient care may not be well defined (25).

Occupational therapists and others

Occupational therapists are members of the health care team in many NICUs. They provide important assistance with the development of oral motor skills, motor and postural development and fostering of parent-infant attachment (26). A recent report indicated that the primary source of education and training for occupational therapists was 'on the job', and the need for more standardized educational preparation and ongoing evaluation has been recognized (27). A defined structure is equally applicable to other health care professionals working in the neonatal area, including physiotherapists, psychologists, audiologists, social workers and others. Although not described in this document, these health care team members also may have enhanced roles that effectively contribute to newborn and family care.

Role development includes both the planned evolution of professional activities in neonatal care (eg, specialization of dietitians in newborn nutrition) and the assumption of responsibilities that have previously belonged to physicians (eg, neonatal stabilization and transport). In both areas, there is need for defined mechanisms that can be understood and supported by all members of the health care team.

Needs assessment

A needs assessment should be the first component of any new activity or program. This should include asking the following questions.

- What are the patient care needs at present and in the foreseeable future?
- Is a 'new' system required to meet these needs?
- What personnel need to be involved?
- What educational or documentation programs must be developed?
- What changes in communication and reporting structure are required?
- How should the satisfaction of health care professionals be addressed?
- What are the implications of acceptance by families?
- Are changes required to obtain information to evaluate the program?

Statement of purpose

The statement of purpose should be based on the needs assessment and should clearly define the type(s) of health care professional(s) involved. Human resources surveys of the quantity, distribution and roles of existing personnel within the service as it currently exists should be analyzed. The introduction of a new role should be justified, based on human resources availability, trends in

patient numbers and acuity, family needs, and the anticipated benefits of introducing enhanced roles. An economic analysis should also be undertaken. The framework for introducing and evaluating new roles of health care professionals should follow accepted standards.

Involvement of stakeholders

'Buy in' of all stakeholders should be sought early in the process of program development. Key stakeholders include those most directly affected by role changes, as well as those who are indirectly affected.

Title/role definition

While not all roles require a title, those titles chosen should provide uniformity and clarity for both health care team members and the families of the patients. Where possible, they should follow locally accepted standards and those at the provincial and national levels. It may be desirable for roles that encompass a limited extension of functions to remain untitled to avoid confusion.

Role definition is essential. Responsibilities and reporting structures should be clearly defined with supporting documents, including:

- occupational profile (job description);
- transfer of function components and documentation as applicable;
- practice privileges and delegative authority;
- clinical practice guidelines;
- administrative, research and educational activities; and
- mechanisms for demonstrating initial and ongoing competence.

Educational requirements

Enhanced or extended care skills, such as intubation and neonatal transport, may require specifically designed educational programs that evaluate both knowledge and technical skills. All health care providers should offer educational programs according to their needs and those for whom they will care. Existing educational programs, such as the American Neonatal Resuscitation Program, should be incorporated into the educational system when applicable (28).

It is important to address knowledge and skills separately. When new skills are required (eg, intubation, placement of percutaneous intravenous catheters), the educational program should include an opportunity for supervision and documentation of ability. A certification process should be used with specific standards set by those developing the program, with the opportunity for modification as the need arises.

Reporting structure

With the development of enhanced roles, flexibility in the reporting structure is important. This often includes a dual reporting structure with the individual in the enhanced role being responsible to the attending physician for specific aspects of patient care, while maintaining overall responsibility for professional development and maintenance of standards within their own profession. Regardless of the system used, the reporting structure should be clearly defined for both those within an enhanced role and others with whom they work.

Medicolegal considerations

The scope and nature of responsibility that might be accepted varies among provinces. Often there is a mechanism for the delegation or transfer of function that will allow individual hospitals to develop roles to meet specific needs of patients. Professional organizations and provincial regulatory bodies may need to be involved in the development of the program.

Ongoing education and evaluation

Mechanisms in place to evaluate the goals and objectives of newly developed programs should also ensure that opportunities exist for ongoing education. Evaluation should include performance appraisal of participants, with immediate and long term outcome measurements of the program itself. Criteria for evaluation agreed upon in principle by the directors of the program and relevant stakeholders should be in accordance with governing organizations affiliated with the role. Although these should be established at the inception of the program, it is recognized that these may need to be modified on a regular basis. All new educational programs introduced should be evaluated, with the results published in a recognized manner.

CONCLUSIONS

The Canadian Paediatric Society strongly supports the development and implementation of enhanced roles for health care professionals to better meet the health care needs of neonates. Such roles should complement care by paediatricians and other physicians, which also continue to develop. Success of programs may be enhanced by prior needs assessment, careful consideration of educational requirements, implementation in an appropriate milieu with the support of all members of the health care team, and an evaluative mechanism to define realized benefits and assist in the development of similar programs in other areas.

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The recommendations in this statement do not indicate an exclusive course of treatment or procedure to be followed. Variations, taking into account individual circumstances, may be appropriate.