A model of paediatrics: Rethinking health care for children and youth

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Part 1. Child and youth health care in Canada

Children and youth represent 25% of the Canadian population and 100% of the country’s future. Supporting their health from birth is a responsibility and a tremendous opportunity to foster generations of healthy Canadians. To do this, we must not only care for them when they are sick, but do everything possible to keep them healthy and safe.

Health starts outside the medical system – supportive families and communities, education, employment, proper nutrition, hygiene, and adequate housing and income are, of course, among the key determinants of health. Most chronic conditions affecting adults develop during childhood. When children and youth come in contact with the health care system, they need timely access to trained professionals who support their growth and development, promote health and safety, and provide quality care for acute and chronic problems. Ensuring that our health care system better meets the needs of children and youth is not only a moral obligation, but also a wise economic investment.

Paediatricians are integral to child and youth health care in Canada. (Throughout this document, ‘paediatrician’ is used to refer to all paediatricians, regardless of the location [eg, hospital-, university- or community-based] or the nature [eg, generalist or specialized] of their practice.) While some believe that fewer paediatricians will be required as the population ages, there is already a shortage of paediatric specialists and subspecialists. Overall, the paediatric workforce is aging, and there are not enough trainees to replace those leaving practice. This shortage is expected to worsen at a time when the needs of children and youth are, in fact, increasing.

Increasingly, effective health care requires a coordinated team approach, and paediatricians working with other professionals are critical to such teams. In November 2006, the Paediatric Chairs of Canada and the Canadian Association of Paediatric Health Centres brought together a range of experts to determine how to best plan paediatric resources [1]. The consensus was that the health needs of children and youth are unique and complex, and that no single health care professional can meet all of these needs. A commitment to a coordinated team approach – with family physicians, paediatricians, child and adolescent psychiatrists, nurses, psychologists, speech language pathologists, dieticians, physiotherapists, occupational therapists and many others – was one of the major outcomes of the meeting.

The purpose this document is twofold:

• It aims to clearly set out the broad health needs of children and youth (meeting those needs requires a coordinated approach across disciplines and sectors)
• It describes the specific role of paediatricians to meet those needs.

The paediatrician: A child and youth health specialist

Like physicians who care for adults, paediatricians are a diverse group. They differ in the nature, scope and setting of their practice. Depending on the needs of their community, a paediatrician may fulfill any one or more of the roles listed below:

• provide emergency and critical care to acutely ill children and youth;
• work in tertiary care hospitals and clinics;
• provide consulting care in their offices or in regional and community hospitals, treating patients referred from diverse sources such as family physicians, nurses and school authorities;

• provide comprehensive care to children and youth living with complex chronic conditions or developmental challenges;

• provide primary and preventive care in the community;

• work in community organizations such as children's mental health centres;

• work in academic settings, providing patient care while teaching medical students and residents, and/or doing research;

• work in administrative roles within hospitals and universities;

• work in public health departments and other areas of government; and

• work in child protective services, assessing and treating children and youth who have suffered abuse or neglect.

Despite advocacy by the CPS and other organizations, no progress has been made to meet the health needs of children and youth. Of particular note are some of the findings of the most recent National Physician Survey (2007) [3]:

• Paediatricians work longer work weeks than most physicians, reporting an average of 52.5 h per week (not including on-call services), which includes patient care, teaching, administration and research.

• Paediatricians have one of the highest on-call rates among physicians. Nearly 70% report that they provide on-call services, with 40% of those doing more than 30 h per week (on average 34 h per week).

• Nearly one-third of paediatricians said that they plan to reduce their workload (excluding on-call) in the next two years.

• When asked about factors that impede patient care, paediatricians cited the lack of available services to support their work, including other physicians and professional services, and the increasing demands on their time.

• When asked what accounts for the increasing demands on their time, paediatricians reported the following top three factors: increasing complexity of patient caseload, management of patients with chronic diseases or conditions, and increasing patient expectations.

• There is an urgency involved in the care of children and youth, which paediatricians respond to. They report one of the lowest waiting times for urgent referrals: nearly 60% of paediatricians said that patients with urgent needs are seen within one day, despite the fact that 28% reported that their practices are partially closed to new patients. Another 3.9% said that their practices are completely closed.

A 2007 CPS report [4] identified that no province or territory has a paediatric human resource plan. A recent Canadian Medical Association report on the future of specialty care found a critical need for general specialists in areas such as internal medicine, psychiatry and paediatrics. Comprehensive national processes, including A Canada Fit for Children [5] and Canada's Child and Youth Health Charter [6], continue to assert that young people have a right to the best specialized medical professionals, working

Current state of the paediatric workforce

In 2001, the Canadian Paediatric Society (CPS) published the results of a comprehensive survey of paediatricians conducted in 1999 and 2000 [2]. The survey found an aging paediatric workforce, with not enough trainees in the system to replace retiring physicians. Smaller and remote communities were identified as particularly vulnerable.

In 2005, approximately 11% of paediatricians surveyed said that they will retire by 2010, while another 36% planned to reduce their work hours. Smaller and remote communities were again noted to be particularly vulnerable: more than 80% of Canadian paediatricians work in towns or cities with populations of more than 100,000 (unpublished data). The retirement of even a single practitioner can leave a community in a crisis.
collaboratively with others in health, to meet their acute and chronic health needs and to optimize their physical, emotional, behavioural and cognitive development.

Rethinking health care for children and youth: why it cannot wait
To effectively plan paediatric services, it is critical to understand why the health needs of children and youth are increasing and/or changing. Consider the following:

- Many children now survive extreme prematurity.
- The number of children and youth with chronic health conditions is steadily rising.
- The rate of obesity continues to rise.
- More children and youth experience mental health problems.
- Many children with malignancies, chronic cardiac problems, diabetes and severe behavioural challenges receive their ongoing medical care in the community.
- Many conditions that once required treatment in a paediatric teaching hospital are now being handled closer to home, coordinated by a community paediatrician.

As the health status of children and youth changes, paediatrics must adapt to best serve young Canadians.

Where we need to go
An extensive review of the literature revealed that Canada lacks a robust body of research on child and youth health care delivery. There is minimal literature describing the specific roles of various professionals in improving the health of children and youth. In light of the available evidence, the CPS has thoroughly deliberated how paediatricians can contribute to meet the particular health needs of children and youth in Canada. The conclusions reached form the basis of the recommendations in this document and were used to develop a ‘model of paediatrics’ for the evolving Canadian health care environment.

The model of paediatrics that follows describes the optimal role of paediatricians within the current and future health care environment, working collaboratively with other health professionals. This flexible model allows communities, regions, provinces and territories to use it to meet the unique needs of the children and youth in their jurisdictions. Some of the central features of the model are as follows:

- The priority for paediatricians should be the delivery of comprehensive consulting care, regardless of the location (hospital-, university- or community-based) or the nature (eg, generalist or specialized) of their practice.
- Paediatricians should be available to provide ongoing comprehensive care to children and youth with complex medical needs, both in the community and when hospitalization is needed.
- Paediatricians should, where possible, give preference to collaborative medical practice, including working with other professionals such as family physicians, psychologists, social workers and nurses.
- Governments should ensure there are appropriate numbers of all child and youth health professionals to meet the needs and to participate in teams.

Part 2. Model of paediatrics

Overview
The foundation of this model of paediatrics is the health needs of children and youth. Some of the key assumptions are as follows:

- All children and youth must have a primary care provider. Family physicians, nurse practitioners and physician assistants should receive adequate training, in collaboration with paediatricians.
- Timely access to care and services, including early intervention, is critical to promote health and prevent problems. Evidence shows that the long-term prognosis for children with developmental and mental health conditions, for example, is significantly improved when diagnosis and treatment are not delayed.
- Continuity of care is essential. When needed, children and youth must have regular access to a paediatrician who knows their history and can work with their family and other professionals to provide ongoing comprehensive care. A strong collaborative relationship with the primary care provider will ensure adequate follow-up care.
• There are many ways to ensure access to paediatricians, depending on health needs, population and geography. Among the various models are:
  – paediatricians practicing in the community and working in groups (ie, outside the hospital setting) – they are critical to the effective delivery of health care for young Canadians;
  – paediatricians working in community hospitals, either full time or through on-call;
  – paediatricians working in university teaching hospitals; and
  – paediatricians visiting rural and remote areas on a regular basis, or supporting them through telemedicine.
• Access to care can be improved through better distribution and support of community paediatricians, who must be adequately resourced to provide comprehensive care.
• Access to care can also be improved through teamwork, collaboration with other health professionals, and flexibility among support staff to ensure that the majority of paediatricians’ time is spent on those activities requiring their expertise.
• Paediatric subspecialists must be appropriately distributed and accessible.
• Further investment and enough protected time are required to allow paediatricians to participate in the teaching of other child and youth health professionals and in research.

What do children and youth need from paediatricians?
All children and youth in Canada should have timely access to paediatric expertise that meets their needs.

As a population, young Canadians and their families require the following:

Care for acute and chronic health problems
• Appropriate hospital care: Children and youth who are hospitalized should have access to quality, specialized paediatric expertise that meets their needs. Smaller, remote and northern communities should have adequately resourced visitation or telemedicine programs to ensure access to this paediatric expertise.
• Newborn care: Newborns with serious illness (eg, significant prematurity, respiratory distress, malformation) should have access to specialized neonatal or paediatric expertise that meets their needs. All newborns should have access to a neonatal intensive care unit, designated as such by government authorities, as required. These units should meet Canadian standards for human resources (medical specialists, nursing personnel), training and physical resources (space, equipment). All newborns requiring transportation should have access to an appropriate transport system/team to a neonatal intensive care unit designated as such by government authorities.
• Critical care: All children and youth who require emergency transportation should have access to an appropriate transport system and, as needed, a hospital with paediatric expertise. Paediatricians must actively participate in the implementation of appropriate transport teams. When required because of the state of their physical health, all children and youth should have access to a paediatric intensive care unit, designated as such by government authorities. These units should meet Canadian standards for human resources (paediatric intensivists and nursing personnel), training and physical resources (space, equipment).
• Child/youth protection services: Children and youth who have suffered abuse – whether physical, sexual, psychological or neglect – should have timely access to a specialized age-appropriate health assessment by a properly trained and resourced team that meets their needs. All paediatricians should receive training to recognize and treat cases of child/youth maltreatment.
• Palliative care services: Children and youth with a terminal illness should have access to paediatricians with specific training in palliative care and pain control.

Care that meets the needs of specific populations
• First Nations, Inuit and Métis children and youth: All First Nations, Inuit and Métis children in Canada should have timely access to culturally appropriate paediatric expertise, regardless of their geographic location.
• Vulnerable populations: Children and youth at risk of health problems (eg, new Canadians,
children from disadvantaged socioeconomic groups) should receive paediatric care that considers their environment and, in conjunction with professionals from various disciplines, minimizes the potential for poor health outcomes.

• Children with developmental problems: Children and youth with developmental problems should have timely access to specialized assessment, diagnosis, treatment, and/or follow-up by a paediatrician or, when needed, a developmental paediatrician in addition to the other health professionals such as dietitians, speech language pathologists, occupational therapists and physiotherapists. With preventive and anticipatory care, children and youth have a better chance of meeting their developmental milestones. A collaborative relationship with the primary care physician may be required to provide follow-up care.

• Children and youth with mental illness: Children and youth with mental illness should have timely access to a specialized assessment by a paediatrician, in addition to a mental health assessment by a psychiatrist, psychologist, social worker, nurse or another subspecialist trained in child/youth mental health. As needed, paediatricians should be part of the team and, where appropriate, the care coordinator. When necessary, paediatricians may provide ongoing mental health care.

• Children and youth with serious acute or chronic illness: Children and youth with serious acute or chronic disease should, regardless of where they live, have a paediatrician involved in their care, whether in a community or hospital setting or through telemedicine. As appropriate, the paediatrician will manage the illness alone or in cooperation with family physicians and subspecialists, and/or with a multidisciplinary team.

• Youth: All adolescents should have access to expertise that meets their specific needs, based on their age group, as required. When needed, adolescents should have access to appropriately trained paediatric expertise. When youth with serious chronic diseases reach adulthood, after having been cared for up to that point by paediatric specialists or subspecialists, there should be a properly planned transition to the appropriate primary care family physician and adult medical specialist or subspecialist, to ensure continuity of care.

An assurance of quality care
Assuring quality care means setting standards for practice, ensuring a continued focus on teaching and research, and fostering a healthy community of care providers.

• Care that meets standards of practice: Paediatric practice should at all times reflect Canadian standards or, if such standards do not exist, those established internationally.

• Evidence-based guidelines for care: Paediatricians must develop and regularly update guidelines on the physical, emotional, cognitive and mental health of children and youth. These guidelines must take into account geographical, ethnic and cultural differences, which affect health and well-being. Guidelines must be developed by professionals with subject-specific expertise. These guidelines must be widely disseminated to all health professionals who care for children and youth. It is also essential that public education tools be provided to health professionals to help translate the guidelines into practice. Paediatricians must develop and regularly update evidence-based positions in key areas for child and youth advocacy for use at the federal, provincial/territorial or regional levels.

• Centres of excellence: To ensure the highest quality care for children and youth who require very specialized interventions, centres of excellence must be established and sustained to ensure that a critical mass of expertise is developed and maintained. For example, centres already exist for complex cardiac surgeries and transplants.

• Educational collaboration: Education on child and youth health must be offered at the undergraduate and postgraduate levels in all medical schools and for trainees in other health disciplines (eg, nursing, dental medicine, pharmacy). Paediatricians should have a key role in the teaching of child and youth health.

• Research: Innovative and adequately funded research programs – specifically focused on the needs of children, youth and families – must be developed and sustained. Knowledge translation and transfer programs must be developed to ensure that scientific advances improve child and youth health outcomes. Research agendas should facilitate the involvement of both hospital- and community-based paediatricians.
• **Administration:** Children and youth are best served when professionals who understand their health and health care needs are in positions of leadership within the institutions and organizations that provide services. Paediatricians should receive leadership training and administrative education.

• **Clinical collaboration:** To best meet the health needs of children and youth in Canada, it is essential to promote:
  – collaboration between family physicians and paediatricians;
  – collaboration between general paediatricians and paediatric subspecialists;
  – collaboration between all child and youth health professionals and paediatricians;
  – establishment of evidence-based referral guidelines to ensure efficient and appropriate referrals to specialists and subspecialists; and
  – establishment of multidisciplinary teams where appropriate.

• **A healthy paediatric workforce:** To best support the current and future health needs of children and youth, it is vital to have a healthy, satisfied, vibrant and sustainable workforce. Paediatricians should also lead by example by ensuring that their work/family balance optimizes their own family's health and well-being. Human resource plans must allow paediatricians to achieve a balanced lifestyle, respecting their personal and family needs. Policies must support parental and adoption leave, as well as educational leave.

**Part 3. From model to practice: Recommendations**

The following are generally accepted:

• There is a shortage of primary care providers for children and youth.

• There is a current and projected shortage of paediatricians in Canada. The needs of children and youth are not always being met in a timely manner.

• The number of paediatricians must be sufficient to meet the specialized medical needs of all children and youth in Canada.

Given this reality, and the scope of paediatric expertise, the following recommendations will move provinces and territories toward this model of paediatric practice.

**A. Recommendations for provincial/territorial governments and health care planners**

Provinces, territories and district health planners must work with paediatric leadership from provincial associations and, where appropriate, university hospitals and department chairs to create human resource plans that meet the following criteria.

1. **Ensure access to a regular primary health care provider**
   **Every child and youth** requires a primary health care provider, family physician or nurse practitioner to provide primary care on a regular basis.

2. **Meet the needs of children and youth**

   The number of paediatricians required to meet the needs of children and youth should be established for each given jurisdiction, and should specify those required:

   • to meet the needs of children and youth suffering from serious chronic diseases or multisystemic illnesses (involving many organs or systems in the body);
   • to meet the assessment needs of children and youth with suspected mental illness;
   • to meet the needs of newborns, especially those born prematurely or ill;
   • to meet the needs of children and youth with developmental delay or disorders;
   • to meet the needs of children and youth with acute illness;
   • to meet the needs of children and youth by serving as consultants to family physicians, public health professionals, midwives and nurse practitioners.

3. **Consider the broad scope of paediatric expertise and leadership**

   Evaluating the required number of paediatricians should take into account clinical, teaching, research, government and administrative responsibilities, as well as the role of paediatricians as:

   • experts in the development, update and dissemination of guidelines promoting child and youth health;
• child/youth advocates; and
• experts in child/youth protection.

4. Meet the unique needs of communities
Paediatricians should be encouraged to work in the community as well as in hospital settings. Community paediatricians, as a result of their education and training, have the ability to adapt their practices to meet the needs of the children and youth in a given population. Where possible and appropriate to their needs, children and youth should be able to have paediatric services delivered in their local community hospital setting rather than in a centre farther from their homes.

5. Establish appropriate on-call services
The number of paediatricians and methods of remuneration should facilitate reasonable call schedules in all areas. In view of limited human resources in paediatrics and the various health needs of children and youth in Canada, paediatricians should consider it their responsibility to participate in on-call activities, including during evenings and on weekends.

6. Facilitate health care teams
A critical mass of all child and youth health professionals, including paediatricians, is necessary to offer continuity of care to children, youth and communities. Governments must work with child and youth health professionals to ensure optimal human resources. Attention must also be given to creating child- and youth-specific electronic health records to facilitate communication between team members and to ensure continuity of care.

7. Re-examine models of remuneration
All methods of remuneration in provinces/territories should be re-examined to maximize the involvement of paediatricians in the type of care as described in this model as well as teaching, research and administration.

Remuneration models should encourage paediatricians to work with others in the community to meet the needs of children and youth. In addition to providing acute and complex care, paediatricians may need to collaborate with schools, public health, child and youth mental health centres, or child welfare agencies. In some communities, paediatricians may be the primary care provider if that meets the health needs of the children and youth.

8. Ensure access to appropriate care in a timely manner

Provincial and territorial governments must engage the child and youth health professionals and their leadership to determine how to improve access to care for children, youth and their families. This is especially urgent for mental health and developmental disorders.

B. Recommendations for paediatric leadership

1. Ensure paediatricians play a leadership role in complex cases
Paediatricians should play a leadership role in the coordination of care and in the management of children and youth suffering from serious acute, chronic and/or multisystemic illness. Coordination and continuity of care in these instances is essential to prevent or minimize fragmented care.

2. Facilitate the involvement of paediatricians in undergraduate and postgraduate education
Paediatricians in Canada should participate in the education of medical and health science students, paediatric and family medicine residents and fellows.

3. Facilitate the involvement of paediatricians in continuing professional development
Paediatricians in Canada should participate in the continuing medical education of colleagues in nursing, family medicine, paediatric specialties or subspecialties. Paediatricians should also be encouraged and supported to meet their own lifelong learning needs.

4. Ensure appropriate standards of care are in place
To optimize resources, guidelines and standards for the appropriate referral of children and youth to paediatric subspecialists should be better defined and disseminated. Paediatricians should be involved in assessing health outcomes for children and youth as well as quality improvement projects.

5. Transition of care
To ensure the smooth transition of youth to adult care, family physicians, paediatricians and adult specialists must develop methods to identify appropriately trained professionals to provide continuing care for young adults with complex medical needs. Professional development and care protocols are needed to support those who take over the care of youth with these complex health care needs.
C. Recommendations to ensure continuity of care

Using this model to plan health care services for children and youth could result in changes to how paediatrics is practiced. In some communities, paediatric practice will evolve over time. However, this can only be done when certain conditions have been met:

• There must be enough family physicians and nurse practitioners with child and youth health training in a given region to meet the primary health care needs of children and youth. In the meantime, paediatricians may be obliged to provide some primary care services to fulfil some crucial unmet needs.

• A full complement of child and youth health professionals must be properly resourced to meet the health needs of children and youth. These professionals include child and youth psychiatrists, psychologists, nurses, dieticians, occupational therapists, physiotherapists and speech-language pathologists.

• Remuneration models must recognize the time required to provide optimal care to children and youth with chronic or acute health care needs who require the specific expertise of a paediatrician.

• Remuneration models must recognize the contributions paediatricians make to their communities by educating other health professionals, residents and medical students, and by participating in research, public health projects and planning, and their own professional education.

References


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