



**PROVINCIAL PAEDIATRIC
PANDEMIC INFLUENZA PLANNING**

(P4)

Triage Working Group

DRAFT Paediatric Triage Document

April 2008

Executive Summary

In January 28, 2008 a meeting of the Provincial Paediatric Pandemic Planning (P4) Triage Working group convened in Ottawa at the Childrens' Hospital of eastern Ontario. The purpose of the meeting was to develop a set of draft guidelines and ethical principles that would provide a framework for paediatric triage during a pandemic. The following document was prepared based on the outcomes of January meeting and has subsequently been revised through the ongoing collaboration and support of the triage working group membership.

This document highlights the definition of triage, the concepts associated with ethical decision making, the grounding assumptions and the proposed guidelines for paediatric triage. The working group, in consultation with the Ministry of Health and Long term Care plan to vet this document more broadly seeking consultation with key stakeholders in order to stimulate dialogue, and engage in further planning regarding paediatric triage for the province.

Introduction

During an influenza pandemic, a variety of strategies will need to be employed to meet the medical needs of the paediatric population within the province. Specifically, surge capacity will need to be created for the delivery of paediatric acute and critical care across the health system (refer to OHPIP Chapter 17; Chapter 11 & 13 OHA Pandemic Toolkit for Small, Rural and Northern Hospitals). There will be a point during the pandemic however, when resources become scarce and these strategies are no longer able to sufficiently respond to the growing numbers of children and youth requiring care. In these situations, providers will need to develop processes for decision-making to ensure that very scarce resources and interventions (e.g. antivirals, ventilators, intensive care beds etc.) are optimally allocated. Decisions regarding allocations of resources should be made on the basis of effectiveness, as informed by best current evidence, rather than by criteria of social worth (such as social status, perception of social contribution, age, disability, ethnicity.).

Defining Triage

During a non-pandemic situation, "routine" triage involves identifying patients who require medical attention and then prioritizing the order in which they will receive care. This prioritization is based on the severity of symptoms and the threat to life imposed by their condition. Within this definition of triage, those who are the most sick and those whose life is the most threatened are attended to first while others are attended to later. The degree and/ or extent of care provided is only rarely if ever, limited due to lack of available resources.

During a pandemic situation, once surge capacity strategies have been exhausted and health care resources have become extremely limited, this type of prioritization is no longer sufficient and the concept of “TRUE Triage” or “Targeting Resources to achieve Ultimate Ends” needs to be considered (refer to OHPIP Chapter 17). To date, this particular model has focused primarily on decision-making and allocation of scarce resources for adults requiring admission to critical care and has not taken the unique circumstances and vulnerabilities of children and youth into account.

Paediatric Triage

The following “paediatric triage” model is therefore proposed for consideration. It would only begin after all other surge capacity and resource allocation strategies have been exhausted.

Under this definition, triage does not become a method of deciding which child **will** or **will not** receive care. Instead, “paediatric triage” presumes that every paediatric patient **will** receive care. However, as the pandemic evolves, the surrounding environment shifts and the availability of resources becomes limited, processes and criteria for decision-making as to how, when and what health resources can and will be allocated to each child needs to be determined.

Ethical Decision Making During a Pandemic

Ethical standards and principles that guide decision making for infants, children, and adolescents under non-pandemic conditions, to the greatest extent possible, should be adhered to throughout all stages of a pandemic (see **Table 1**). In a crisis situation however, this may not always be possible. Parents and guardians may not be available to act as substitute decision-makers, the comforting presence of family for the hospitalized child may not be available and tragically, it may not be possible to provide life-saving interventions to all those who may benefit. Decision-making in this context will require a difficult balancing of interests, rights, responsibilities and duties. Providers can only strive to choose the least harmful course of action and should consider the best available scientific evidence as the starting point of decision-making. This is a key value that underpins “paediatric triage,” ensuring that the decision-making processes are based on common, known and transparent parameters and that allocation of scarce resources is based on best possible outcomes rather than criteria associated with social worth.

Table 1: Principles & assumptions facilitating decision making for infants, children and adolescents.

- All infants, children and adolescents – regardless of physical or mental disability – have dignity, intrinsic value, and a claim to respect, protection, and medical treatment that serves their best interests.
- Although family issues are important and must be considered, the primary concern of health professionals who care for children and adolescents must be the best interests of individual children and adolescents.
- Decision-making for children and adolescents should be interdisciplinary and collaborative, and should actively involve the family and, when appropriate, the child or adolescent.
- Children and adolescents should be appropriately involved in decisions affecting them. Once they have sufficient decision-making capacity, they should become the principal decision maker for themselves.
- All information presented to patients, families, or the child or adolescent’s legal guardian should be truthful, clear and presented with sensitivity. This information should include evidence available in the literature, and the clinical experience of the physician and his or her colleagues.
- A physician’s personal and professional values can influence patients and families. The reflective practitioner is aware that personal values should not be allowed to restrict or bias such things as options offered to patients or families.
- The principal obligation of the physician is to the individual patient rather than to society or the health care system. Physicians should act as advocates for their individual patients when scarce resources seem to limit access to care.

Source: Canadian Paediatric Society POSITION STATEMENT (B 2004-01) Paediatric Child Health Volume 9 No 2 February 2004

Responsible Decision Makers

Clinicians caring for children and youth, along with the parents/guardians and when appropriate the children themselves, should make specific treatment decisions that allocate resources based on best possible outcomes. Should a pandemic reach a stage where all surge capacity strategies are exhausted and life-saving interventions and resources cannot be made available, specially trained decision-makers (i.e., triage officers) or teams may be asked to decide whether or not a specific patient fits a pre-determined category to receive the scarce resources; if not, then they may determine what level of care will be provided.

Families will also need to be advised about the need to consider a plan for their children, including an alternative care provider/decision-maker, in the event that the parent becomes incapacitated.

Grounding Assumptions

In addition to the core values of best scientific evidence and social justice, decision-makers should also consider the following grounding assumptions in their deliberations regarding allocation of resources and provision of care to paediatric patients.

Grounding Assumptions cont'd

1. Unique Considerations of infants, children and youth

Infants and children are vulnerable and in need of protection. They are typically embedded in families who care for them and provide them with their ongoing needs. Their parents or guardians are their surrogate decision-makers for health care. Healthcare decisions are often challenging, as decision-makers must try to determine what is in a child's best interests, usually without having access to the child's wishes. Medications and interventions may not have been studied in children, and clinical outcomes are often less certain.

As children develop they may become increasingly interested in their bodies and able to understand more complex concepts. They may wish to receive more information and even be involved in decision-making. Respect for their developing autonomy supports practices that encourage children to participate in a developmentally appropriate way. At some point, adolescents will become the primary decision-maker for their own care. Those who care for children have a duty to advocate for them as they cannot speak for themselves. Presently, there are regional inequalities with regards to resources for paediatrics (even more so than adult resource inequalities). Pandemic planning should include paediatric capacity enhancement (i.e., pre-pandemic) in order to deal with these inequities.

2. Legal/ ethical obligation to care for children/ youth

From a legal and ethical standpoint, decisions made for children and youth by others should be consistent with their best interests. Preserving life and minimizing undue suffering are primary considerations. Options such as shifting efforts to provide comfort care and enhancing quality of life when death seems inevitable, or when ongoing treatment poses greater burdens than benefits, may be reasonable and even encouraged in some situations. It is expected that parents/guardians and healthcare professionals will collaborate in these decisions, involving the child as appropriate.

3. Dynamic pandemic environment

A pandemic represents a dynamic environment whereby specific care decisions that are made for a specific child will change over time as resource availability shifts. Decisions should be based primarily on the physiological status of the child rather than just categories of disease, illness or treatment. There needs to be consideration and review of each patient on an individual basis that takes into account the patient's physiology, the presence of co-morbidities (and the relevant impact on prognosis with or without influenza), predicted response to influenza (or another presenting illness) and the demand for resources based on the patient's condition.

4. Ethically non-relevant considerations (i.e. what should not be a deciding factor or an "exclusion criteria")

"Best interests" decisions should focus on considerations that are ethically relevant. For example, the Canadian Paediatric Society suggests consideration of the following:

- chances of survival;
- the harms and the benefits of treatment;
- evidence regarding long- and short-term medical outcomes of the treatment; and
- long-term implications for the child or adolescent's suffering and quality of life.

It would be unjust, not ethically relevant, and inconsistent with the Canadian Charter of Rights and Freedoms, to deny treatment solely on the basis of the child's age, gender, race, religion, socioeconomic status, geographical location (urban versus rural; north versus south etc.) and/or the existence of a physical or mental disability.

Communication

In the case of an influenza pandemic, clear and concise communication with the community at large will be essential to ensuring the provision of appropriate and timely care for all children and youth. The communication strategy should include various modalities, such as television, radio, billboards, and flyers and should provide information on a variety of topics .

Ideally, educational information would start to be provided prior to the full pandemic and could become more complex as the pandemic proceeds. Families and the community at large should be informed of the triage principles that will be used and how they will be implemented, prior to pandemic occurring. As the pandemic begins, families should be provided, as early as possible, with information regarding prevention and infection control. In addition, families will require information regarding the signs/symptoms that require assessment, strategies for managing children at home, where assessment should take place and current hospital practice. Families will also need to be advised about the need to consider a plan for their children, including the designation of an alternative care provider/decision maker, in the event that the parent/guardian becomes incapacitated. A provincial 'hotline' may also be helpful in allowing individual questions to be answered and hopefully will prevent some unnecessary medical assessments.

Paediatric Patient Assessment

The first level of assessment should ideally be performed by the child's usual primary care provider. Families who do not have a primary care provider will need clear direction as to where the initial assessment should take place. The Parent/Caregiver algorithm (OHPIP – 18A-7,8) outlines the signs and symptoms which warrant assessment by various levels of care providers (i.e., ER, family physician, telephone advice) and where to seek more information. A recommended change to the current tool would be to direct families to their usual primary care provider rather than the Influenza Assessment Centre (unless the government decides to go ahead with these assessment centers). This algorithm should be made readily available to all families through a variety of sources such as physicians' offices, schools, daycares, provincial Best Start hubs, recreation

programs, cultural community centres and on-line via the world wide web. (It might be effective to place the algorithm on a refrigerator magnet so that it can be displayed for easy reference.) The 'hotline' should also direct families to websites or other centers where this information can be accessed. The provider performing the initial assessment should use the Paediatric Pandemic Influenza Office Assessment Form (Chapter 18A-14,15) to guide clinical decision-making. This assessment form outlines the clinical parameters to be assessed, when further investigation is warranted, possible treatment options and criteria for referral to a higher level of care. If the child is deemed well enough to return home, parents should be directed to use the Parent/Caregiver algorithm as a guide for determining when to return to a healthcare provider for reassessment. When children are triaged to return home, consideration must also be given to the ability of the caregiver to adequately provide for the child. If the caregiver is deemed unable to care for the child, secondary to their own health, she/he may need assistance to access the designated alternative care provider.

Children who are not well enough to return home will likely need to be treated in an emergency department or admitted to hospital, unless the province has sent out a directive indicating an alternative. Community hospitals will need to be provided with guidelines that outline criteria for admission and management strategies for hospitalized children. Children should only be hospitalized if they require a level of care above that which can be provided within the home. This care would include oxygen, IV hydration, IV antibiotics for secondary infection and ventilation (see guidelines below). Ideally, patients would remain in their own community unless they required ventilation and more intensive care. Each hospital will need to determine its own capacity for paediatric patients. Given that some smaller centers may be less familiar or comfortable with managing paediatric patients, there will need to be a mechanism for providing education and support to local physicians or nurse practitioners. This could be provided via specific instructions on the algorithm (e.g., formula for calculating IV rates in children) and telephone consultation with a paediatrician or paediatric intensivist, perhaps in conjunction with the patient 'hotline'. Hopefully, this support would enable hospitals to expand their capacity beyond what is usually provided during normal operations. If a child's condition deteriorates to the point that care can no longer be provided locally, clinicians will need to know how to arrange higher level care, understanding that triage will need to occur provincially (see Critical Care section).

Admission to hospital should be based on immediate need (as outlined in the admission criteria). Children with chronic illness should not be admitted 'early' in an attempt to prevent a more severe clinical course. Given that treatment of influenza is primarily supportive in nature, it is unlikely that this practice would be effective; moreover, it would tie up beds with children not requiring hospital level care. Families of children with chronic illness should be educated, in advance, about effective prevention strategies

for their child. These families may want to consider ‘self-quarantine’ as a preventive strategy.

During a pandemic, it will be expected that community physicians may need to scale back their practice to allow for the timely assessment and triage of children with suspected/actual influenza. Non-urgent follow-ups will need to be re-scheduled once the pandemic is resolved. A link with the OHPIP Primary Care Working Group will be helpful in planning for the financial ramifications of this practice.

In summary, effective communication with all members of the community, including healthcare providers is essential to effectively managing an influenza pandemic. Families will need to be aware of appropriate prevention strategies, when assessment by a physician is necessary, where to bring the child for assessment and how to manage sick children at home in order for successful management of a pandemic. Healthcare providers need access to all available guidelines in order to effectively triage children during a pandemic and to manage the children in their own community, until a higher level of care is required.

Guidelines for Hospitalized Children

Children should be hospitalized when:

- 1) Vital signs are unstable (tachypnea, tachycardia, hypotension)
- 2) Oxygen saturations are less than 92 %
- 3) Change in neurologic status (signs of encephalopathy / encephalitis, seizure)
- 3) Hydration is deemed to be inadequate (decreased urine output, weight loss, tachycardia) or child is unable to tolerate oral fluids
- 4) Secondary infection has failed to respond to oral antibiotics or it is felt oral antibiotics will not be effective (e.g. vomiting)
- 5) Child is felt to have an invasive infection such as sepsis or meningitis

Critical Care

To date, the paediatric critical care triage subcommittee has proposed that triage in this patient population could be based on two concurrent levels of resource allocation. The first is centered on resource utilization as the basis of allocation, where the provision of specific resource-intensive therapies is limited for all patients regardless of prognosis as the ability to provide rudimentary critical care becomes compromised. The second is centered on patient-specific prediction of outcome as the basis for allocation, where the intent is to match the provision of critical care to those patients with the greatest potential for benefit, i.e., maximal survival and minimal morbidity (see Table 2).

While the issues of triage are clearly linked to capacity, it is not the mandate of this group to make specific recommendations about interventions to increase, maintain or shift capacity within healthcare institutions or settings. Although there will be some overlap between the concurrent levels, each has been organized explicitly in this draft to reflect the step-wise shift from providing care to all patients to caring for as many as possible as

the pandemic progresses. The levels of resource allocation for both categories have been numbered starting with the early phase, where there is still the ability to flex surge capacity, going up to the late phase, where severe resource limitations will dictate who will receive critical care and what therapies will be provided.

Table 2: Levels of Resource Allocation for Paediatric Triage

Levels of Resource Intensity Provision during a Pandemic	Levels of Paediatric Patient-specific Triage during a Pandemic
<p><u>Level 1: Early Pandemic Period</u> Continue to provide the full range of pediatric/neonatal ICU therapies by maximizing access to technological and human resources</p>	<p><u>Level 1: Early Pandemic Period</u> Maximize capacity within units, within hospital (e.g., paediatric and adult ICU, ED, NICU), and within region to provide critical care to all patients.</p>
<p><u>Level 2: Mid Pandemic Period</u> Limit specific resource-intensive therapies which are only available in paediatric/neonatal ICUs (see examples of resource-intensive therapy*) *Examples of Resource-intensive Therapy:</p> <ul style="list-style-type: none"> - Continuous Renal Replacement Therapy (CCRT), Extracorporeal Membrane Oxygenation (ECMO), nitric oxide 	<p><u>Level 2: Mid Pandemic Period</u> Time-limited trials of ICU therapy (e.g., 24 hours) and accelerated decision-making processes to withhold/withdraw life support for patients not predicted to survive ICU-related diagnoses (see examples of ICU-related diagnoses*) * Paediatric Examples:</p> <ul style="list-style-type: none"> - post-cardiac arrest patients, severe sepsis with multi-organ failure, severe head trauma with GCS(Glasgow coma scale) = 3 and refractory Intracranial Pressure, patients with greater than 30% third-degree burns, severely immunocompromised patients with sepsis <p>* Neonatal Examples:</p> <ul style="list-style-type: none"> - prolonged neonatal resuscitation, Hypoxic-ischemic encephalopathy (HIE) Sarnat III or with multi-organ failure, severe Intraventricular hemorrhage (IVH) (bilateral grade III/IV), severe Persistent Pulmonary Hypertension of the Newborn (PPHN) unresponsive to nitric oxide or High Frequency Oscillatory Ventilation (HFOV) , gastroschisis and omphalocele with Oxygenation Index (OI) > 40
<p><u>Level 3: Late Pandemic Period</u> Limit resource-intensive therapies for conditions that require care beyond paediatric ICU or require prolonged NICU stay. In a full-blown pandemic, there may be interventions or programs that would be suspended. Provision of intensive care as a bridge to the interventions or programs that are suspended would not be a judicious use of resources as the burden of treatment would be experienced without any hope of benefit. (see examples of resource-intensive conditions*) * Examples Resource-intensive Conditions:</p> <ul style="list-style-type: none"> - Organ transplantation, bone marrow 	<p><u>Level 3: Late Pandemic Period</u> Limited access to ICU for patients with underlying chronic conditions associated with known or predicted severe morbidity as well as those patients included in level 2 (see examples of underlying diagnoses*) * Paediatric Examples:</p> <ul style="list-style-type: none"> - spinal muscular atrophy on chronic ventilation, lethal chromosomal/genetic disorders such as Trisomy 13/18, late-stage neurodegenerative disorders such as adrenoleukodystrophy, persistent vegetative state

transplantation, neonatal surgery for complex cyanotic congenital heart disease, prematurity < 25 weeks gestation	<i>* Neonatal Examples:</i> - prematurity < 25 weeks gestation, weight < 1000 g, lethal chromosomal/genetic disorders such as Trisomy 13/18, congenital diaphragmatic hernia with severe pulmonary hypoplasia, complex cyanotic heart disease
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Next Steps

The Provincial Paediatric Pandemic Influenza Planning (P4) Triage Working Group has developed draft principles and recommendations for the triage of pediatric patients during a pandemic situation. The working group will be seeking input from key stakeholders regarding these principles and will continue to refine the information accordingly based on feedback that is obtained. A resource document will be prepared to support triage officers in decision making and application of the principles and recommendations during a pandemic. In addition, the paediatric critical care subcommittee will be seeking input to develop specific triage guidelines for pediatric and neonatal critical care patients.

Proposed survey questions

1. Do you feel that the proposed draft principles for pediatric triage during pandemic are appropriate?
2. Do you feel that there are additional principles that must be considered that have not already been highlighted?
3. Do you feel that the proposed triage levels are defined and ordered appropriately?
 - a. Patient-specific triage?
 - b. Resource intensity provision?
4. Are there other categories or diagnoses of patients who should have restricted access to acute care at level 2?
 - a. To a neonatal ICU?
 - b. To a pediatric ICU?
5. Are there other categories or diagnoses of patients who should have restricted access to acute care at level 3?
 - a. To a neonatal ICU?
 - b. To a pediatric ICU?
6. What additional resource-intensive therapies should be limited at level 2?
 - a. That would be provided in a neonatal ICU?
 - b. That would be provided in a pediatric ICU?
7. What additional resource-intensive therapies should be limited at level 3?
 - a. That would be provided in a neonatal ICU?
 - b. That would be provided in a pediatric ICU?
8. Who else should be consulted regarding these guidelines?

9. How should the triage principles best be communicated to
 - a. Community based practitioners
 - b. Community hospitals
 - c. Tertiary care pediatric centers
 - d. The general public

Conclusion

As an influenza pandemic progresses, the strategies aimed at enhancing surge capacity and maximizing resources will eventually be exhausted, therefore prompting providers and organizations to adjust the type of care that can be provided to their patients. Planning must consider the unique features and vulnerabilities of children and youth. Moreover, planning must include the structure, processes and protocols for decision-making to ensure that very scarce resources and interventions are allocated on the basis of effectiveness, as informed by best current evidence, rather than solely by criteria of social worth (such as social status, perception of social contribution, age, disability or ethnicity).