Alberta Health Services Acute Childhood Vomiting & Diarrhea Pathway

For Emergency / Urgent Care

Step 1 - Should the child be placed into the Pathway?

Inclusions:
- Children > 3 months and < 10 years with vomiting* and/or diarrhea with or without accompanying nausea, fever or abdominal pain.

Exclusions: Children with
- episodes of vomiting and/or diarrhea lasting longer than 7 days
- localized abdominal pain
- chronic medical conditions such as diabetes, PKU, immunodeficiency or those affecting major organ systems
- signs suggesting GI obstruction such as abdominal distension, bilous vomiting or absent bowel sounds
- significant blood in vomit or diarrhea

Step 2 - Assessment at Triage

Consider need for isolation

Gorelick Score (1 point for each sign listed below)
- capillary refill > 2 secs
- absent tears
- dry mucous membranes
- ill general appearance

Assess for shock
- vital signs - (T, HR, BP), CRT, LOC (see vital signs table for age)

Step 3 - Staff Nurse Assessment

Weigh child

Gorelick Score One or less points

Maintain Hydration (< 5% dehydration)

- Place in waiting room until bed available
- Teach (video and/or bedside nurse)

- Encourage regular diet
- If BF continue with more frequent smaller feeds.
- If active vomiting, encourage frequent small volumes of fluids
- Encourage replacement if child vomits or has diarrhea - assume ~ 8 ml/kg for the volume lost per one vomit or one diarrhea

- Document intake volume, # episodes of V & D, & urination if occurs (not required for discharge)
- Repeat Gorelick Score (no need to reweigh) at discharge

Gorelick Score Two points

Needs Oral Rehydration (5-10% dehydration)

- Arrange for ED/UCC bed as soon as possible
- Reassess & take VS q hour

- If active vomiting, give Ondansetron (see back page for ***Nursing Directive - Section A***)
- Teach (video and/or bedside nurse)
- Oral rehydration with Pedialyte® (see back page for ***Oral Rehydration Table - Section B***)
- If BF, continue along with ORS

- Document intake volume, # of episodes of V & D, & urination
- Repeat weight & Gorelick Score at discharge or admission

See back page for ***Criteria for Determining Success or Failure of Oral Rehydration - Section C***

Suggested Criteria for discharge home
- Hydration < 5% BW (Gorelick Score ≤ 1)
- Expect child can maintain hydration at home

Suggested Criteria for Admission to hospital / or consult
- Continued significant vomiting and/or diarrhea
- Hypo or hyper natremia
- Significant social issues
- Diagnostic uncertainty
- Required resuscitation because of abnormal VS or decreased LOC
- Persistant metabolic acidosis

Gorelick Score Three or four points with normal VS

Needs IV Rehydration (> 10% dehydration)

- Arrange for ED/UCC bed as soon as possible
- Reassess & take VS q 30 min x 2, then q hour

- IV NS 20 ml/kg over 30 min
  - If can't obtain venous access, consider NG administration (ORS) & contact Children's Hospital via RAAPID for further management
- Recommended Labs - Electrolytes, Urea, Creatinine, Glucose
  - If glucose and Na normal, start NS 20 ml/kg/hr and continue for 2 - 5 hrs (40 - 100 ml/kg) as needed
  - If Na ≤ 128 or ≥ 155 do not use rapid rehydration; consider consulting PICU/Nephrology (if outside Children's Hospital consult with Children's Hospital via RAAPID) before further rehydration
  - If glucose < 4 use D5NS; monitor serum glucose q 1 - 2 hrs

- Teach (video and/or bedside nurse)
- If outside Children's Hospital, consider consulting with Children's Hospital via RAAPID

- Document intake volume, # of episodes of V & D, & urination
- Repeat weight & Gorelick Score at discharge or admission

Abnormal VS - ↑HR, ↓BP, ↓LOC, ↑CR

Needs Resuscitation

- Take immediately to resuscitation room
- Nurse remains at bedside until patient's VS & LOC are normal
- IV NS 20 ml/kg over 5 min
- Consider IO if IV access cannot be obtained
- Chem Strip for Glucose
- Reassess HR, BP, CR, LOC
- Repeat bolus NS 20 ml/kg and reassess as needed

- Consider PICU consult (if outside Children's Hospital consult with Children's Hospital via RAAPID)

- Once VS & LOC normal, reassess and take VS q hourly
- Recommended Labs - Electrolytes, Urea, Creatinine, Glucose, VBG/ABG, lactate, Ca
  - If glucose and Na normal, start NS 20 ml/kg/hr and continue for 2 - 5 hrs (40 - 100 ml/kg) as needed
  - If Na ≤ 128 or ≥ 155 do not use rapid rehydration; consider consulting PICU/Nephrology (if outside Children's Hospital consult with Children's Hospital via RAAPID) before further rehydration
  - If glucose < 4 use D5NS; monitor serum glucose q 1 - 2 hrs

- Intake documented & output weighed and measured
- Document urination
- Repeat weight & Gorelick Score at admission

* CAUTION

In children with just vomiting - especially those who are younger - carefully consider other causes such as bowel obstruction or serious bacterial illness (E.G. Urinary Tract Infection or Sepsis / Meningitis)

Alberta Health Services

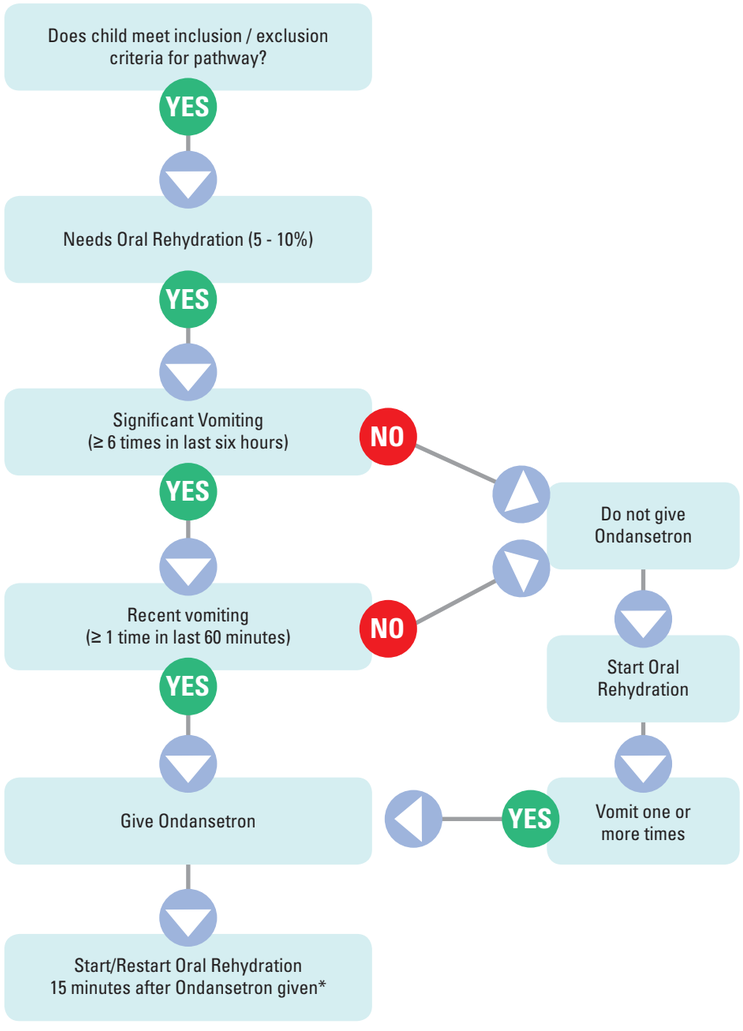
RAAPID NORTH 1-800-282-9911
RAAPID SOUTH 1-800-661-1700
Referral, Access, Advice, Placement, Information, and Destination

NOVEMBER 2011

Alberta Health Services Acute Childhood Vomiting & Diarrhea Pathway

For Emergency / Urgent Care

SECTION A Nursing Directive for Ondansetron Use



* If patient vomits within 15 minutes, repeat dose

Ondansetron Dosing*

Oral Solution
- 0.2 mg/kg if child < 8 kg

Dissolve Tabs
- 2 mg if child is between 8 - 15 kg
- 4 mg if child is between 15 - 30 kg
- 8 mg if child is > 30 kg

* A single dose is sufficient. Repeat dosing may increase risk of diarrhea.

Abbreviations

BF.....Breast Feeding
BP.....Blood Pressure
BW.....Body Weight
CRT.....Capillary Refill Time
D5NS.....5% Dextrose in Normal Saline
ED.....Emergency Department
GCS.....Glasgow Coma Scale
GI.....Gastrointestinal
HR.....Heart Rate
LOC.....Level of Consciousness
NG.....Nasogastric Tube
Normal VS.....see Vital Signs Table below
NS.....Normal Saline
ORS.....Oral Rehydration Solution
PKU.....Phenylketonuria
T.....Temperature

Vital Signs Tables

Definition of Hypotension by Systolic Blood Pressure and Age

Age	Systolic Blood Pressure (mm Hg)
Infant (3 - 12 mos)	< 70
Children (1 - 10 yrs) 5th BP percentile	< 70 + (age in yrs x 2)
Children (> 10 yrs)	< 90

Normal Heart Rates (per minute) by Age

Age	Awake Rate	Mean	Sleeping Rate
3 mos - 2 yrs	100 to 190	130	75 to 160
2 yrs - 10 yrs	60 to 140	80	60 to 90
> 10 yrs	60 to 100	75	50 to 90

(Source for charts - Pediatric Advanced Life Support (PALS))

Prolonged Capillary Refill ≥ 2 seconds
Decreased LOC = GCS ≤ 14

Major Teaching Points

- Provide all parents with video teaching & standard teaching pamphlet
- Emphasize:
  - Use regular and preferred diet
  - May use a range of fluids (see pamphlet for list); do not need to use Pedialyte®, Gastrolyte® or other ORS at home
  - Give replacement fluids if have frequent vomiting and/or having diarrhea
  - If child does not tolerate fluids, emphasize need to give frequent small sips of fluid using a syringe, **without stopping for vomiting**
  - Signs or symptoms of dehydration and when to return to care
- Treatment with ondansetron, other anti-emetics, Immodium and anti-biotics at discharge are not recommended

SECTION B Oral Rehydration Table

Start children at smaller volumes & increase as tolerated to the volumes outlined in the table.

Weight Kg	Sip Volume per 5 min*
< 10	10 ml
10 - 15	15 ml
15 - 20	25 ml
20 - 25	30 ml
25 - 30	35 ml
30 - 35	40 ml
35 +	50 ml

* Calculated based on 15 ml/kg/1 hour or 60 ml/kg/4 hours
** May round off to nearest half or full ounce (30 ml = 1 ounce)
Pedialyte® Freezer Pops = 62.5 ml each

SECTION C Criteria for Determining Success or Failure of Oral Rehydration

At 1 Hour*
- Well appearing and normal VS
- Gorelick Score ≤ 1
- Taken ≥ 15 ml/kg Pedialyte®
- ≤ 1 vomit or diarrheal stool

ALL YES → **At 2 Hours***
- Well appearing and normal VS
- Gorelick Score ≤ 1
- Taken ≥ 30 ml/kg Pedialyte®
- ≤ 4 vomits or diarrheal stools

ALL YES → **At 4 Hours***
- Well appearing and normal VS
- Gorelick Score ≤ 1
- Taken ≥ 60 ml/kg
- Urine present

ALL YES → **At 6 Hours***
- Well appearing and normal VS
- Gorelick Score ≤ 1
- Taken ≥ 60 ml/kg
- Urine present

ANY NO → MD assess for DC

*** If any of the following occur at anytime, have MD assess re: starting IV Rehydration**
- Abnormal VS and/or ↓LOC
- < 6 ml/kg hour intake
- Ongoing losses from V & D* > intake

* Assume one vomit or diarrhea = ~ 8 ml/kg

NOVEMBER 2011