



INCLUSION

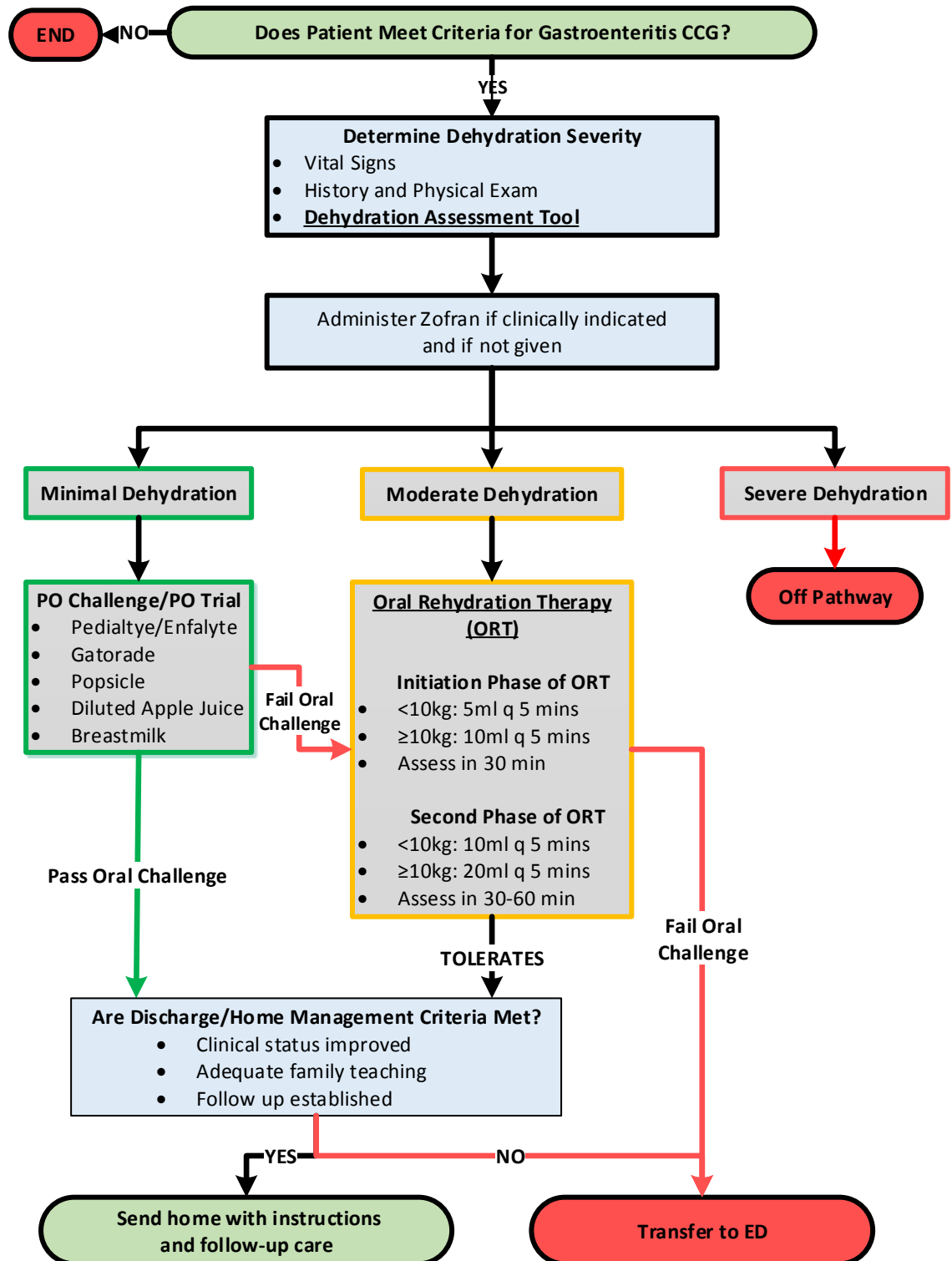
Vomiting and/or diarrhea of recent onset not due to chronic disease, with or without fever, nausea, abdominal pain

EXCLUSION

- Patient < 2 months of age
- Vomiting with no diarrhea for >48 hrs
- Severe dehydration, toxic appearance or meets sepsis criteria
- Comorbid conditions (medically complex children, renal failure, cardiac disease, IBD, liver disease, VP shunt, short gut syndrome, myocarditis)
- ICU admission for similar symptoms
- Bilious emesis (consider bowel obstruction)
- Acute surgical abdomen
- Head injury within 72 hours

ORT FLUID

Pedialyte/Enfalyte
Gatorade
Diluted Apple Juice
Breastmilk



A nonrandomized prospective study by Bailey et al (2010) validates the use of the CDS for the prediction of LOS in the ED (after being seen by a physician) in patients 4 months to 4 years of age with gastroenteritis. A nonrandomized prospective study by Goldman et al (2008) validates the use of the CDS in pediatric patients with AGE assessed in the ED to aid in predicting requirements for IV fluid rehydration and hospital LOS. The study finds that a higher CDS score is associated with an increased requirement for IV fluid rehydration and longer hospital LOS, but that there is no association between the CDS score and level of serum bicarbonate or pH level.

To obtain total CDS score, choose the most-appropriate characteristic related to each clinical feature. The sum of the 4 scores will determine the level of dehydration. For example, general appearance thirsty = 1; eyes slightly sunken = 1, mucous membranes (tongue) sticky = 1, tears absent = 2; total CDS score = 5 (moderate-to-severe dehydration).

Clinical Features	Characteristic and Score (choose 1 for each clinical feature; sum of scores = total CDS score)
General Appearance	0 = Normal 1 = Thirsty, restless, lethargic but irritable when touched 2 = Drowsy, limp, cold, or sweaty, comatose or not
Eyes	0 = Normal 1 = Slightly sunken 2 = Very sunken
Mucous membranes (tongue)	0 = Moist 1 = Sticky 2 = Dry
Tears	0 = Present 1 = Decreased 2 = Absent

Total CDS Score: 0 = no dehydration; 1-4 = some dehydration; 5-8 = moderate-to-severe dehydration

Back to
Algorithm



Evidence

General

Guarino A, Albano F, Ashkenazi S, Gendrel D, Hoekstra J. H, Shamir R, Szajewska H. The ESPGHAN/ESPID Guidelines for the Management of Acute Gastroenteritis in Children in Europe: J Pediatr Gastroenterol Nutr 2008; 6;619-21.[5a]

Harris C, Wilkinson F, Mazza D et al. Evidence-based guidelines for the management of diarrhea with or without vomiting in children. Aust Fam Physician. 2008;37:22-9. Full text at <http://www.mihsr.monash.org/hfk/pdf/diarrhoea-sh-infect-cont-20051122.pdf> [5a]

Hydration Assessment

Freedman SB1, Vandermeer B2, Milne A2, Hartling L2; Pediatric Emergency Research Canada Gastroenteritis Study Group. Diagnosing clinically significant dehydration in children with acute gastroenteritis using noninvasive methods: a meta-analysis. J Pediatr. 2015 Apr;166(4):908-16.e1-6. doi: 10.1016/j.jpeds.2014.12.029. Epub 2015 Jan 29.

Falszewska A, Szajewska H, Dziechciarz P. Diagnostic accuracy of three clinical dehydration scales: a systematic review. Archives of Disease in Childhood, 2018;103:383-388.

Jauregui J1, Nelson D2, Choo E2, Stearns B3, Levine AC2, Liebman O2, Shah SP. External validation and comparison of three pediatric clinical dehydration scales. PLoS One. 2014. May 2;9(5):e95739. doi: 10.1371/journal.pone.0095739. eCollection 2014.

Steiner MJ1, DeWalt DA, Byerley JS. Is this child dehydrated? JAMA. 2004 Jun 9;291(22):2746-54

Maintenance IV Fluid

Alves JT1, Troster EJ, Oliveira CA. Isotonic saline solution as maintenance intravenous fluid therapy to prevent acquired hyponatremia in hospitalized children. J Pediatr (Rio J). 2011 Nov-Dec;87(6):478-86.doi:10.2223/JPED.2133.

Friedman JN1, Beck CE1, DeGroot J1, Geary DF2, Sklansky DJ3, Freedman SB4. Comparison of isotonic and hypotonic intravenous maintenance fluids: a randomized clinical trial. JAMA Pediatr. 2015 May;169(5):445-51. doi: 10.1001/jamapediatrics.2014.3809

Wang J1, Xu E, Xiao Y. Isotonic versus hypotonic maintenance IV fluids in hospitalized children: a meta-analysis. Pediatrics. 2014 Jan;133(1):105-13. doi: 10.1542/peds.2013-2041. Epub 2013 Dec 30.

Padua AP1, Macaraya JR, Dans LF, Anacleto FE Jr. Isotonic versus hypotonic maintenance IV fluids in hospitalized children: a meta-analysis. Pediatr Nephrol. 2015 Jul;30(7):1163-72. doi: 10.1007/s00467-014-3033-y. Epub 2015 Jan 11.

Probiotic

Freedman SB, Williamson-Urquhart S, Farion KJ, et al. Multicenter Trial of a Combination Probiotic for Children with Gastroenteritis. N Engl J Med 2018; 379:2015-2026. doi: 10.1056/NEJMoal802597

Schnadower D, Tarr PI, Charles CT, et al. Randomised controlled trial of *Lactobacillus rhamnosus* (LGG) versus placebo in children presenting to the emergency department with acute gastroenteritis: the PECARN probiotic study protocol. BMJ Open 2017;7:e018115. doi:10.1136/bmjopen-2017-018115

Back to
Algorithm