PHILIPPINE CLINICAL PRACTICE GUIDELINE FOR ACUTE INFECTIOUS DIARRHEA

This is a summary of the CPG for acute infectious diarrhea. This pocket guideline serves as a quick reference for the healthcare worker and does not contain the rationale or appendices of the full version.

Recommendations were assessed using the GRADE criteria. After each statement in this guideline, the strength of recommendation and quality of evidence are presented in brackets.

DIAGNOSTIC

I. When is the diagnosis of acute infectious diarrhea suspected?

Definitions

Acute infectious diarrhea is suspected if a patient present with passage of 3 or more loose, watery or bloody stools within 24 hours that may be accompanied by any of the following symptoms: nausea, vomiting, abdominal pain, and fever. (Operational definition) (Strong, Low to Moderate)

Acute diarrhea is the passage of three or more loose, watery or bloody stools from an immunocompetent person's normal baseline in a 24-hour period lasting less than 14 days. The patient should not have received any antibiotics within the last three months, has had no previous hospitalizations and/or has not developed diarrhea after more than 48 hours of hospital admission.[1] In considering if a patient has diarrhea, the change from the previous consistency of stool is the more important parameter to observe compared to change in frequency.

According to the WHO, a young infant has diarrhea if the stools have changed from the usual pattern. The normally frequent or semi-solid stools of a breastfed baby is not considered diarrhea.[2]

II. What pre-treatment clinical evaluations are recommended for immunocompetent patients presenting with acute infectious diarrhea?

- Extensive clinical history should include consumption of raw, ill-prepared, or rotten food and/or intake of contaminated food and/or water as this could provide clues to the possible etiologies. (Strong, low to moderate)
- Complete physical examination should be done to assess the severity of the disease, degree of dehydration presence of complication and presence of comorbid condition. *(See question 4 for discussion.)* (Strong, low to moderate)

III. What is the clinical utility of diagnostic tests in children and adults with acute infectious diarrhea?

- Diagnostic tests should be based on the assessment of the patient's clinical status. (Strong, low)
- Routine stool examination should not be done in most cases of acute watery diarrhea except in cases where parasitism is suspected or in the presence of bloody diarrhea. (Strong, low)
- Stool cultures are indicated only for: severe cases (significant dehydration, high fever, persistent vomiting or severe abdominal pain, dysenteric stool), high risk for transmission of enteric pathogens (food handlers), increased risk of complications, for epidemiologic purposes, where there is suspicion of an outbreak that is enteric in origin. The yield is highest when requested within 3 days of symptoms and before administration of antibiotics. (Strong, low)
- There is insufficient evidence to support the use of biomarkers (CRP, calprotectin, ESR, PCT, total serum WBC) in distinguishing the cause of acute infectious diarrhea. (Strong, low)
- Rapid diagnostic tests may be used during suspected outbreaks of diarrhea and shigella, but confirmation with stool culture is still recommended. (Strong, low)

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☞ Clinical correlation is necessary in interpreting tests done using molecular diagnostics. Although sensitivity is high, the tests are unable to distinguish between viable and non-viable organisms. (Strong, low)

IVA. What are the clinical parameters that would indicate presence of dehydration in children with acute infectious diarrhea?

☞ Physical examination findings indicative of hydration status include the following: vital signs (tachycardia, tachypnea), level of consciousness (depressed sensorium), presence of depressed fontanel, presence of sunken eyeballs, presence of tears, skin turgor, capillary refill time, abnormal respiratory pattern, and history of urine output. (Strong, moderate)

Table 1. Clinical manifestation of dehydration in children according to severity.

Parameters	**No signs of dehydration**	**Mild to Moderate dehydration**	**Severe dehydration**
	Fluid deficit (% body weight)		
Infant	<5%	5-10%	>10%
Child	3%	6%	9%
Condition[a]	Well, alert	Restless, irritable	Lethargic or unconscious
Thirst	Drinks normally, not thirsty	Thirsty, drinks eagerly	Drinks poorly, or not able to drink
Fontanel/Eyes[a]	Normal	Slightly depressed/ slightly sunken	Sunken
Tears	Present	Present or Decreased	No tears
Cutaneous Perfusion/ Capillary Refill	<2 seconds	Around 2 seconds	> 3 seconds
Respiration	Normal	Deep, may be rapid	Deep and rapid 2mo-12mo:≥50breaths/min 12mo-5yo: ≥40breaths/min
Skin Pinch[a]	Goes back quickly	Goes back slowly	Goes back very slowly
History of Urine Output	Normal	Decreased (<0.5ml/kg/hr x8hours)	Little (<0.3 ml/kg/hr in 16hrs) or none (no urine output in 12hrs)
Interpretation		**If the patient has two or more signs, there is MILD to MODERATE DEHYDRATION**	**If the patient has two or more signs, there is SEVERE DEHYDRATION**

[a]These parameters are unreliable for patients with severe malnutrition. Use other parameters to distinguish malnutrition from dehydration.[3-7]

IVB. What are the clinical parameters that would indicate presence of dehydration in adults with acute infectious diarrhea?

☞ Clinical and laboratory parameters indicative of hydration status include the following (Strong, low):

- Clinical parameters: fatigue, thirst, sunken eyes, orthostatic hypotension, increased respiratory rate, cold, clammy sin, lethargy, dry oral mucosa, muscle weakness, decreased skin turgor (>2 seconds)
- Laboratory parameters: Increased urine specific gravity (≥1.010), increased urine osmolality (>800msom/kg), increased serum osmolality (≥ 295 msom/kg), increased BUN/creatinine ration (>20 mg/dL), metabolic acidosis (pH <7.35, HCO3 < 22)

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Table 2. Clinical manifestations of dehydration in adults according to severity.

	Mild	Moderate	Severe
fatigue	+/-	+	+
thirst	+/-	+	+
sunken eyes	-	+	+
blood pressure	Normal BP	orthostatic hypotension	shock
respiratory rate (breaths per minute)	Normal	21 - 25	≥ 25
heart rate (without fever)	≥80 bpm	≥100 bpm	faint or thready
Peripheral (circulation)	warm to touch extremities	cold, clammy skin	
level of consciousness	Alert	lethargic	coma/stupor
oral mucosa	moist	dry	
muscle weakness	None	mild-moderate	severe
skin turgor (anterior forearm, anterior thigh, subclavicular, sternum, anterior chest)	≤ 2 seconds	> 2 seconds	
capillary refill (middle finger at heart height)	≤2 seconds	> 2 seconds	
urine output (ml/kg/hr)	≥ 0.5	< 0. 5	

References[8-10]

Table 3: Other parameters used in assessing dehydration in adults.

	Mild	Moderate	Severe
body weight change	reduction of 3% to 5% of body weight within seven days or less, OR an increase of 3% to 5% of body weight within seven days as an indication that a person was dehydrated before rehydration	Current dehydration corresponded to changes of more than 5% of body weight	
Urine Specific Gravity	≥1.010	≥1.020	
Urine Osmolality (mosm/kg)	>800		
Serum Osmolality (mosm/kg)	295-300	>300	
BUN/Creatinine Ratio (mg/dL)		>20	
ABG (pH < 7.35, HCO3 < 22)	-	-	+

References[8,9,11,12]

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V. What laboratory test should be done to assess for the presence of complications with acute infectious diarrhea?

- Complications such as acute kidney injury and electrolyte imbalances can occur in pediatric and adult patients with acute infectious diarrhea. For patients suspected to have complications of acute infectious diarrhea, the following laboratory tests may be requested: complete blood count, urinalysis, serum electrolytes (Na, K, Cl), BUN and creatinine, serum bicarbonate or total CO2 if available or ABG (optional). (Strong, Low)

VI. What is the role of colonoscopy in the evaluation of acute infectious gastroenteritis in adult and pediatric patients?

- Colonoscopy is not warranted in the initial evaluation of acute infectious diarrhea. (Strong, Moderate)

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TREATMENT: CHILDREN

IA. Who should be admitted among children presenting with acute infectious diarrhea?

- Children with acute infectious diarrhea with any of the following clinical history and physical findings should be admitted: (Strong, Very Low to Low)
    - *Based on clinical history:* unable to tolerate fluids, suspected electrolyte abnormalities, conditions for a safe follow-up and home management are not met.
    - *Based on physical findings:* altered consciousness, abdominal distention, respiratory distress, hypothermia (temperature <36C)
- Pediatric patients with acute infectious diarrhea with the following co-existing medical conditions should be admitted: presence of co-existing infection/s (such as pneumonia, meningitis/encephalitis, sepsis), moderate to severe malnutrition, suspected surgical condition. (Strong, Very Low to Low)

IIA. What is the recommended management for dehydration among children with acute infectious gastroenteritis?

- For breastfed infants, breastfeeding should be continued in addition to hydration therapy. (Best practice statement)
- Sports, carbonated, caffeinated and sweetened drinks are not recommended. (Best practice statement)

Table 4. Recommended management for children according to level of dehydration.

No dehydration	Mild-moderate dehydration	Severe dehydration
Reduced oral rehydration solution is recommended to replace on-going losses	Reduced osmolarity ORS via oral route is recommended to replace ongoing losses. If oral rehydration is not feasible, nasogastric tube is preferred before IV hydration.	Rapid intravenous rehydration is recommended with either plain Lactated Ringer's Solution or 0.9% Sodium Chloride (with or without 5% glucose).
If commercial ORS is not available, home-made ORS may be given		
(Strong, Low)	(Strong, Low)	(Strong, Low)

- Frequency of monitoring (Strong, Low)
    a. Check the child from time to time during rehydration to ensure ORS is being taken satisfactorily and that signs of dehydration are not worsening.
    b. Evaluate status of hydration at least hourly.

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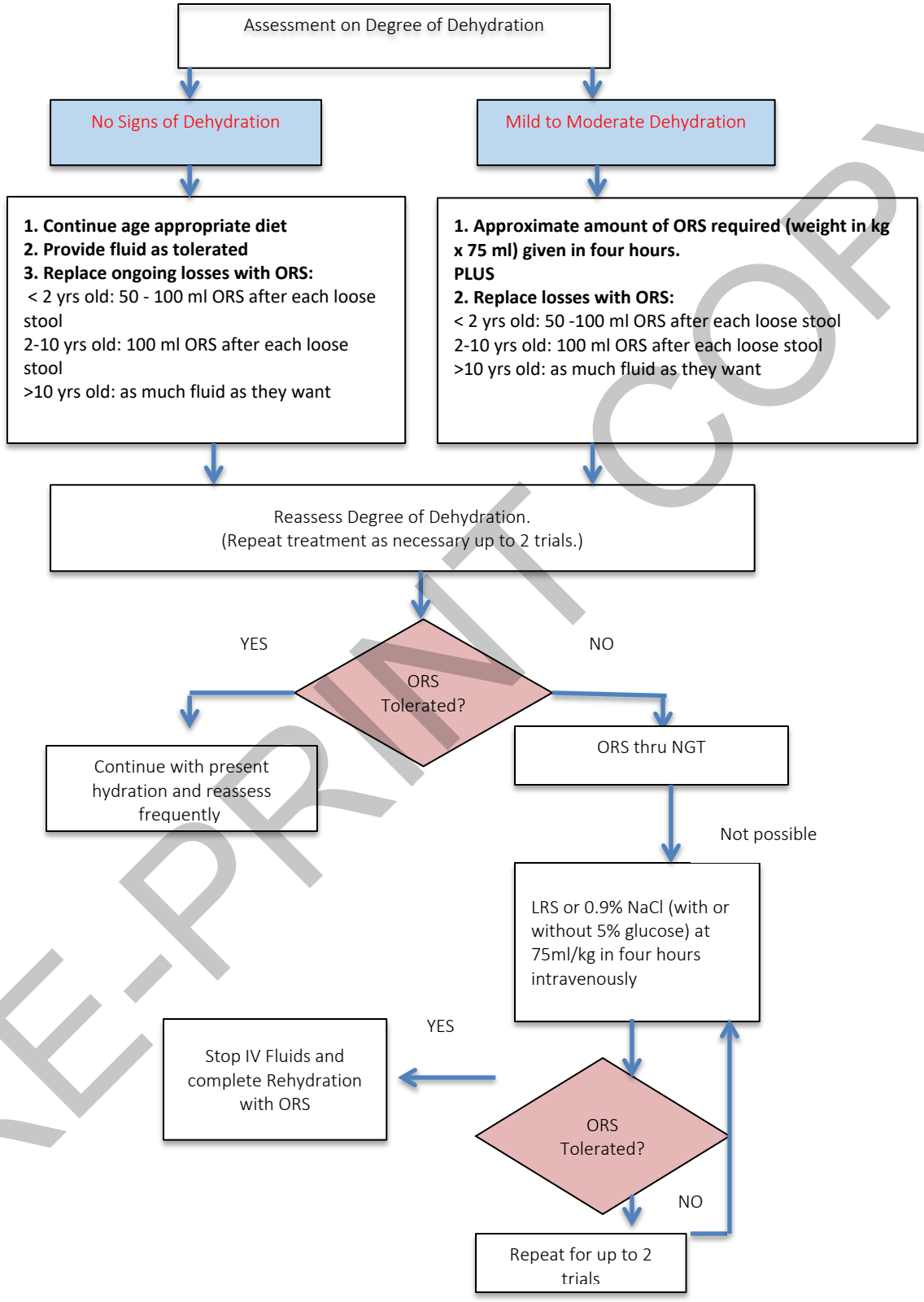

Fig.1 Protocol for mild dehydration and moderate dehydration (Adapted from WHO, 2005, ESPHGAN 2014)

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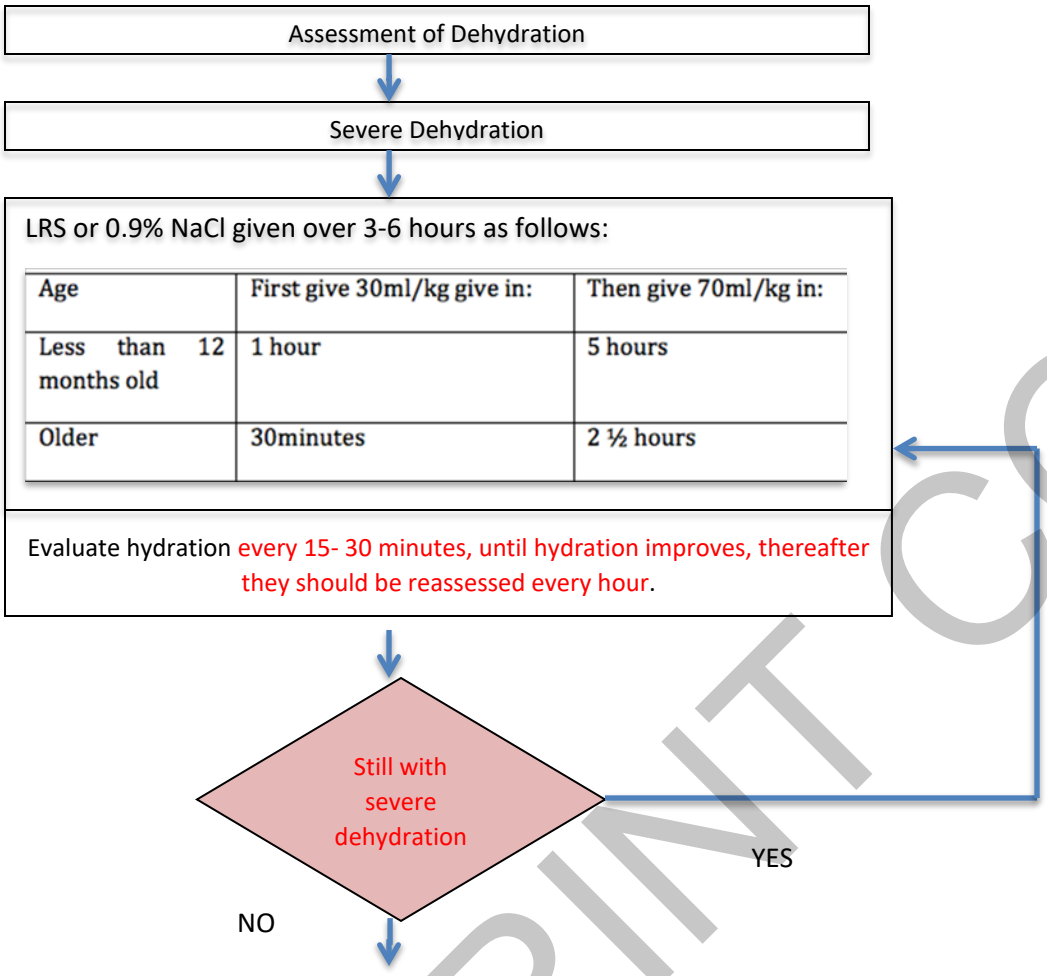

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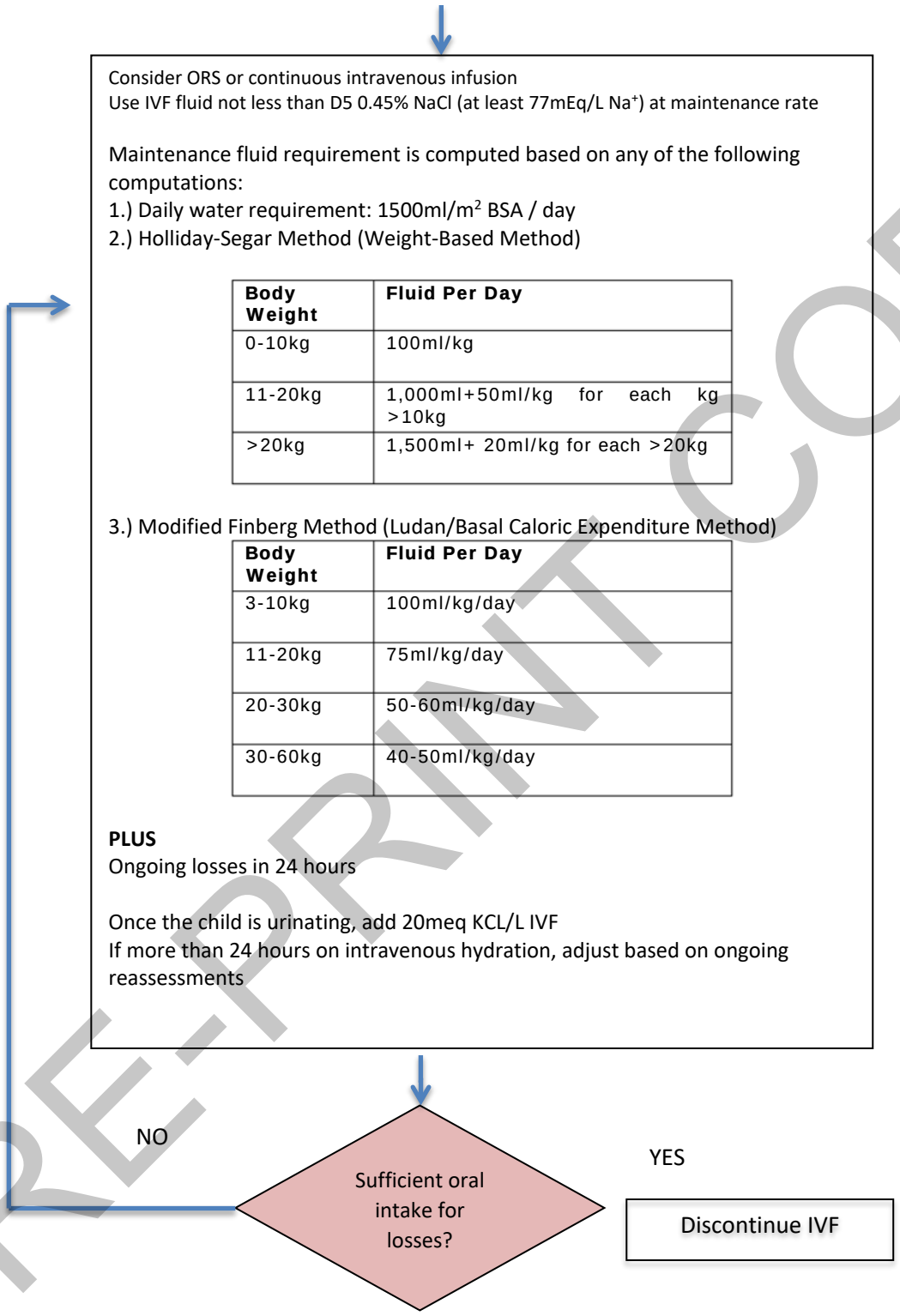

Figure 2. Treatment protocol for severe dehydration (Adapted from WHO, 2005, ESPHGAN 2014)

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IIIA. What are the indications for empiric antibiotic treatment in children with acute infectious diarrhea?

- ☞ Primary management in acute infectious diarrhea in children is still rehydration therapy. Routine empiric antibiotic therapy is NOT recommended. (Strong, Very Low)
- ☞ Antimicrobials may be recommended for the following conditions: suspected cases of cholera, cases of bloody diarrhea and diarrhea associated with other acute infections (e.g. pneumonia, meningitis, etc.) (Strong, Very Low)

IVA. What are the recommended antimicrobials for the following etiologies of acute infectious diarrhea in children?

21. *Table 5. Directed therapy for specific organisms causing acute infectious diarrhea in children*

Etiologic agent	Antimicrobial
Suspected or confirmed cholera (Strong, low to moderate)	• Azithromycin 10 mg/kg/dose, once a day for 3 days or 20mg/kg x 1 dose (max dose 500 mg/24 hr) • Doxycycline 300 mg single dose (FOR >8 years old: 2mg/kg; max 100mg) • Alternatives (when susceptible) include: - Co-trimoxazole 10mg/kg/day of trimethoprim and 50 mg/kg/day of sulfamethoxazole twice a day for 5 days (Max dose: 160mg/dose BID) OR - Chloramphenicol 50-100 mg/kg/day four times a day for 3 days (max dose: 750 mg) OR - Erythromycin 12.5 mg/kg/dose four times a day x 3 days (max dose 4g/24 hours)
Suspected or culture-proven shigella (Strong, Moderate)	• Ceftriaxone IV 50-75 mg/kg/d every 12-24 hours (max dose 2g/24 hr) for 2-5 days • Ciprofloxacin 30 mg/kg/d divided into 2 doses x 3 days (max dose of IV 800 mg/24hrs). • Azithromycin 10 mg once a day for three days (max 500mg/dose)
Non-typhoidal Salmonella (NTS) (Strong, Low)	Antibiotic treatment is NOT recommended for children with non-typhoidal *Salmonella* EXCEPT in high risk children with certain underlying conditions to prevent secondary bacteremia, including: • neonates or young infants (<3 months) • underlying immune-deficiency • anatomical or functional asplenia • corticosteroid or immunosuppressive therapy, IBD, or achlorhydria
Amoebiasis (strong, very low)	Metronidazole 10 mg/kg/dose 3 times a day (max dose 750 mg/dose) for 5 to 10 days is recommended for confirmed cases of amoebiasis.

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VA. What non-specific medications may be given in children with acute infectious gastroenteritis?

- Zinc supplementation (20mg/day for 10-14 days) should be given routinely as adjunctive therapy for acute infectious diarrhea in children more than 6 months old. (Strong, Low to Moderate)
- Zinc supplementation is NOT routinely given as adjunctive therapy for acute infectious diarrhea in children less than 6 months old. (Strong, Low to Moderate)
- Racecadotril (1.5 mg/kg/dose) 3 times a day during the first 3 days of watery diarrhea may be given to infants and children as adjunctive therapy to shorten duration of diarrhea. (Weak, Low)
- Loperamide is NOT recommended for children with acute infectious gastroenteritis due to serious adverse events. (Strong, Moderate)

VIA. What is the role of anti-emetics in the management of vomiting in children with acute infectious diarrhea?

- Anti-emetics are NOT recommended in children presenting with vomiting with acute infectious diarrhea due to safety issues. (Strong, Low)

VIIA. What is the role of probiotics in the management of acute infectious diarrhea in children?

- Probiotics are recommended as an adjunct therapy in children throughout the duration of the diarrhea in children. Probiotics have been shown to reduce symptom severity and duration of diarrhea. (Strong, Moderate)
- Probiotics may be extended for 7 more days after completion of antibiotics. (Strong, Moderate)
- The following probiotics may be used:
    a. *Saccharomyces boulardii* 10^{10} units (Strong, Moderate)
    b. *Lactobacilllus rhamnosus* GG 10^{10} units (Strong, Moderate)
    c. *Lactobacillus reuteri* (Weak, Very Low)
    d. There is insufficient evidence to recommend *Bacillus clausii*.

VIIIA. What is the recommended diet for children with acute infectious diarrhea?

- Breastfeeding should be continued in breastfed infants. (Strong, Low to Moderate)
- In general, feeding should be continued. However, if feeding is not tolerated, early refeeding may be started as soon as the child is able. Resumption of age-appropriate usual diet is recommended during or immediately after rehydration process is completed. (Strong, Low to Moderate)
- If diarrhea persists for more than 7 days, or for patients being treated in the hospital due to severe diarrhea, lactose free diet may be given to children who are predominantly bottle-fed to reduce treatment failure and decrease the duration of diarrhea. (Strong, Very Low to Low).
- No change in diet is recommended. (Strong, Low)
- Diluted lactose milk is NOT recommended. (Strong, Low)

IXA. What is the recommended management for complications of acute infectious diarrhea in children?

- Acute kidney injury is a serious and potentially life-threatening complication therefore it is best to refer the patient immediately to a specialist at the first sign of AKI. (Best Practice Statement)
- ORS is safe and effective therapy for nearly all children with hyponatremia.
- Hospital treatment and close monitoring is recommended for patients suspected to have hyponatremia. Referral to specialist is advised.

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TREATMENT: ADULT

IB. Who should be admitted among adults presenting with acute infectious diarrhea?

☞ The following adult patients with the following clinical history and physical findings should be admitted (Strong, Low to Moderate)

- Poor tolerance to oral rehydration
- Moderate to severe dehydration
- Acute kidney injury and/or electrolyte abnormalities
- Unstable comorbid conditions (e.g. uncontrolled diabetes, congestive heart failure, unstable coronary artery disease, chronic kidney disease, chronic liver disease, immunocompromised conditions)
- Frail, elderly (60 years old and above) and/or with poor nutritional status
- Patients with unique social circumstances (living alone, with residence far from a hospital)

IIB. What is the recommended management for dehydration in adults?

Table 6. Recommended management for adults according to level of dehydration.

Mild dehydration	Oral rehydration solution is recommended at 1.5 to 2 times estimated amount of volume deficits plus concurrent gastrointestinal losses. (Strong, low)
Moderate dehydration	500 to 1000 ml of PLRS IV in the first two hours is recommended. (Strong, Low) Once hemodynamically stable, give 2 – 3 ml/kg/hr PLRS for patients with actual or estimated body weight of < 50 kg and 1.5 – 2 ml/kg/hr PLRS for patients with actual or estimated body weight of > 50 kg. Use ideal body weight for overweight or obese patients. (Strong, Low) PLR boluses vol/vol to replace ongoing losses or oral rehydration solution if tolerated may be used for moderate dehydration. (Strong, Low)
Severe dehydration	1000 to 2000 ml of PLRS within the first hour is recommended. (Strong, Low) Once hemodynamically stable, give 2 – 3 ml/kg/hr PLRS for patients with actual or estimated body weight of < 50 kg and 1.5 – 2 ml/kg/hr PLRS for patients with actual or estimated body weight of > 50 kg. Use ideal body weight for overweight or obese patients. (Strong, Low) We recommend vol/vol replacement with PLR boluses to replace ongoing losses for severe dehydration because at this point the mental status of the patient may already be compromised therefore the risk for aspiration is high. (Strong, Low)

☞ Sports drinks and soda **are not recommended** to replace losses**.** (Strong, Low)

☞ The use of actual/estimated body weight for maintenance fluid rate calculations and ideal body weight for overweight or obese patients is suggested. (Weak, Low)

☞ Patients who are elderly and those at risk of fluid overload (patients with heart failure, kidney disease) should be referred to a specialist for a more individualized fluid management. (Strong, Low)

☞ Recommendations for type of fluid:

- The use of Plain Lactated Ringer's Solution (chloride – restrictive IVF) as fluid of choice in the hydration and fluid resuscitation of dehydrated patients caused by gastroenteritis is

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recommended. However, if Plain Lactated Ringer's Solution is not available, Plain Normal Saline Solution may still be used. (Strong, Low)

- During the initial resuscitation, hourly monitoring of the vital signs, mental status, peripheral perfusion, and urine output must be done. Subsequent frequency of monitoring will be based on the judgment of the clinician. (Strong, Very low)
- The routine use of albumin, HES, or dextran and gelatins as fluids for resuscitation of dehydrated patients is not recommended. (Strong, Moderate)

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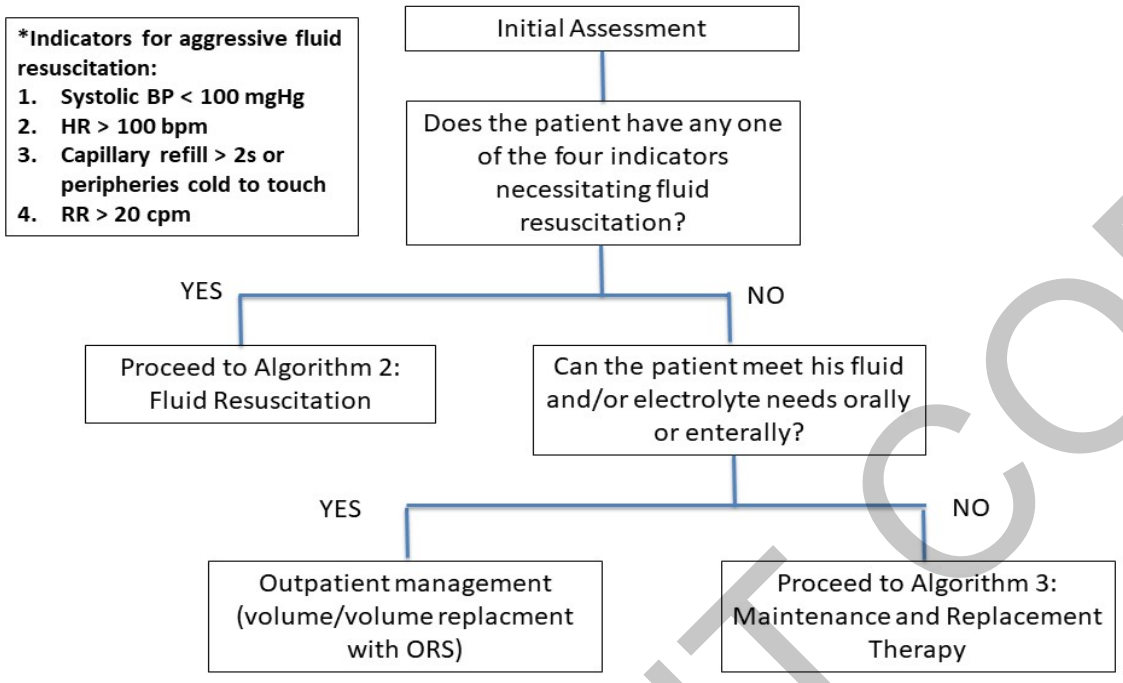

Fig. 3 Algorithm for initial assessment of dehydration for adult patients.

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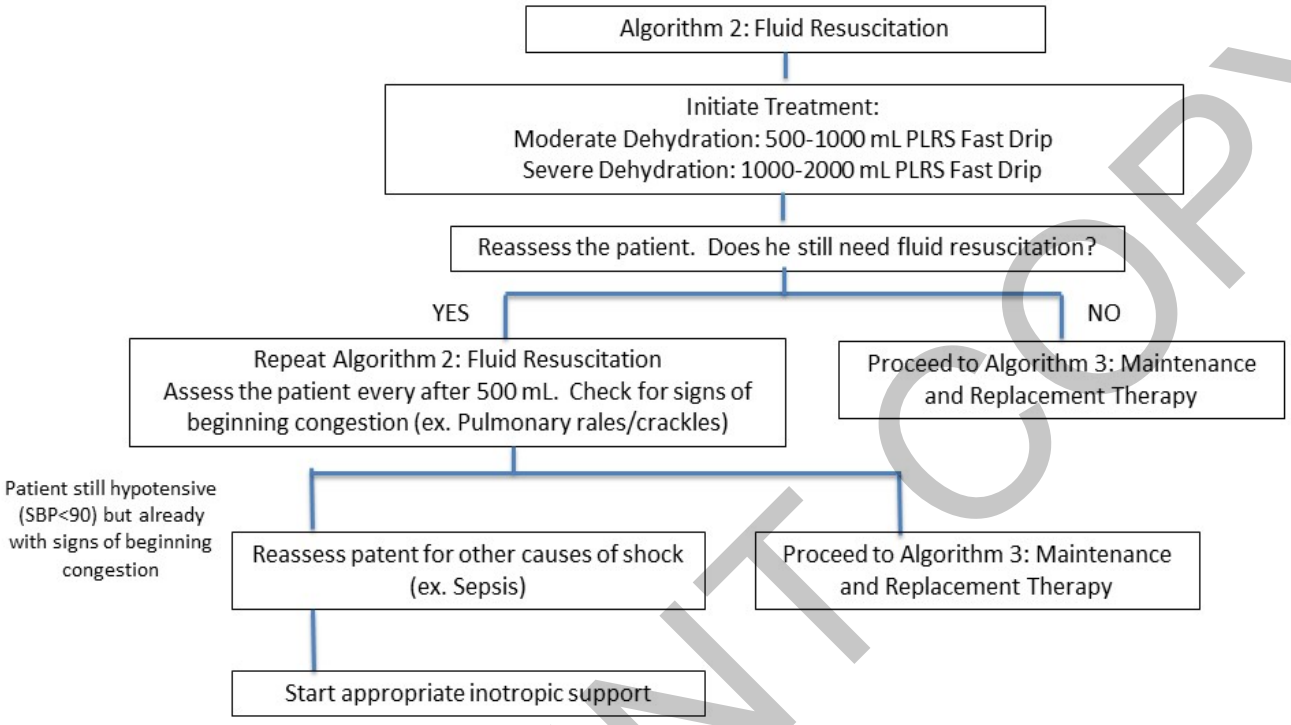

Fig 4. Algorithm for fluid resuscitation of adult patients.

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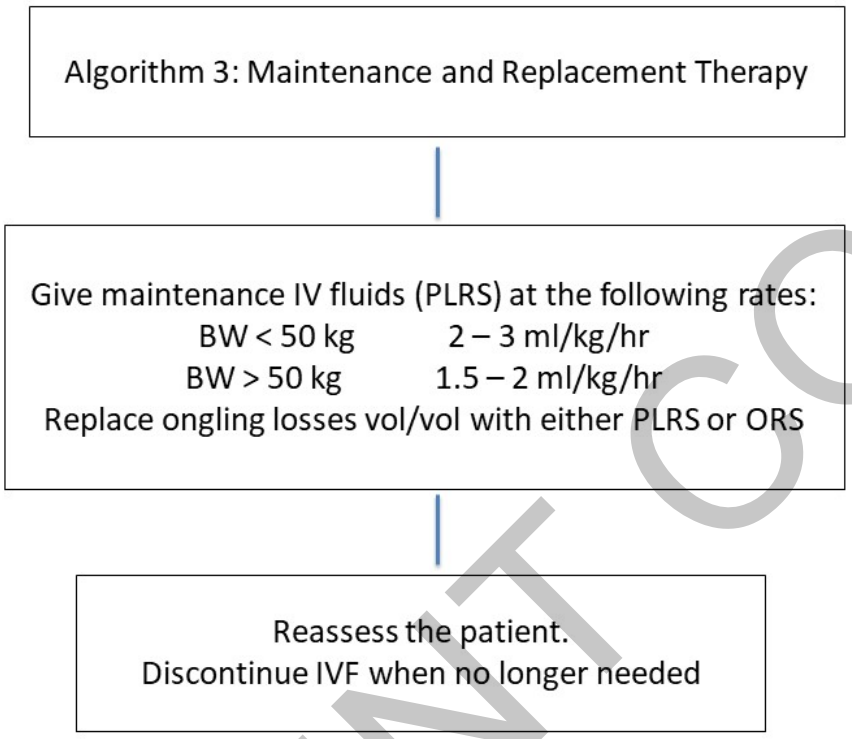

Fig. 5 Algorithm for maintenance and replacement therapy.

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IIIB. What are the indications for empiric antimicrobial treatment in adults with acute infectious diarrhea?

- ☞ Empiric antimicrobial treatment is **NOT recommended** for acute diarrhea with the following clinical features: mild to moderate dehydration only, non-bloody stools, symptoms less than 3 days. (Strong, Low)
- ☞ Empiric antimicrobial treatment is recommended for patients with acute diarrhea with moderate to severe dehydration plus any of the following clinical features: fever alone, fever and bloody stools, symptoms persisting for more than 3 days. (Strong, Low)
- ☞ The following antimicrobials are recommended for empiric treatment of acute infectious diarrhea:
    - o Azithromycin 1g single dose OR
    - o Ciprofloxacin 500 mg twice daily for 3-5 days
    - o Once suspected organism is confirmed, antimicrobial therapy may be modified accordingly.

IVB. What are the recommended antimicrobials for the following etiologies of acute infectious diarrhea in adults?

Table 7. Directed therapy for selected etiologic agents causing diarrhea in adults.

Etiologic agent	**Antimicrobial**
Suspected or confirmed cholera	• Azithromycin 1g single dose (Strong, high) • Ciprofloxacin 1-2 gm single dose or 500 mg BID for 3 days (Strong, low to moderate) • Alternative: Doxycyline 100 mg BID for 3 days (Strong, low to moderate)
Suspected or culture-proven shigella	• Ceftriaxone 1 g once a day for 5 days (Strong, Moderate to high) OR • Ciprofloxacin 500mg twice a day for 5 days (Strong, Moderate to high) OR • Azithromycin 1g single dose (Strong, Moderate to high) *Once with culture, antimicrobial therapy can be modified accordingly.
Suspected or confirmed non-typhoidal salmonella dysentery in adults	• Ciprofloxacin 500mg twice a day for 5 days (Strong recommendation, low to high quality evidence) • Ceftriaxone 1g IV OD for 5 days *Once with culture results, antimicrobial therapy may be modified accordingly.
Confirmed amoebiasis	• Metronidazole 500-750 mg tab three times a day for 10 days. (Strong, High) • Alternative: Tinidazole 2 g OD for 3 days; secnidazole 2 g single dose (Strong, High) • Diloxanide furoate 500mg three times a day may be added to metronidazole, if available.

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VB. What non-specific medications may be given in adults with acute infectious diarrhea?

- Loperamide is NOT recommended in adults with acute infectious diarrhea. (Weak, Low)
- Racecadotril (100 mg three times a day) may be given to decrease the frequency and duration of diarrhea. (Weak, Low)

VIB. What is the role of probiotics in the treatment of acute diarrhea among adults?

- There is insufficient evidence to recommend probiotics in adults. (Weak, Very low to low)

VIIB. What is the recommended management for complications of acute infectious diarrhea in adults?

- Acute kidney injury is a serious and potentially life-threatening complication therefore it is best to refer the patient immediately to a specialist at the first sign of AKI. (Best Practice Statement)
- Hospital treatment and close monitoring is recommended for patients with severe hyponatremia/hypernatremia and/or symptomatic patients regardless of degree of sodium imbalance. Approach to therapy depends on the risk stratification. Referral to specialist is advised. (Best Practice Statement)
- Hospital treatment and close monitoring is recommended for patients with severe hypo/hypkalemia and/or symptomatic patients regardless of degree of potassium imbalance. Referral to specialist is advised. (Best Practice Statement)

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PREVENTION

I. What interventions are effective in the prevention of acute infectious diarrhea?

Hand hygiene

- The promotion of hand hygiene in all settings, on all occasions is recommended to reduce transmission of causes of acute infectious diarrhea. (Strong, Low)
  - Handwashing with soap and water is the best method to reduce the number of microbes.
  - If soap and water are not available, alcohol based hand sanitizers (at least 60%) may be used. Hand sanitizers and moist hand wipes or towelletes are not recommended when hands are visible dirty or greasy.
- All efforts should be made to provide access to clean water, soap and hand drying materials. (Strong, Moderate)

Water safety Interventions

- Drinking water should be clean and safe. Measures recommended in providing clean and safe water include boiling, chemical disinfection, ultraviolet and filtration. (Strong, Moderate)

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- Any drinking water should comply with the Philippine National Standards for Drinking water. (Best Practice Statement).

Proper food handling

- There is no specific recommended screening test for food handlers in the Philippines
- No person shall be employed in any food establishment without a health certificate issued by the city/municipal health officer based on the "Implementing Rules and Regulations of Chapter III Food Establishments On The Code on Sanitation Of the Philippines (P.D. 856)". (Best Practice Statement)
- Food industry workers need to notify their employers if with any of the following: Hepatitis A, diarrhea, vomiting, fever, sore throat, skin rash and other skin lesions, discharge from ears, eyes or nose. (Best Practice Statement)

Proper Excreta Disposal

- Combination of safe stool disposal and hand hygiene are key behaviors to prevent infectious diarrhea. (Strong, Low to moderate)
- Per DOH recommendation, the following are the approved excreta disposal facilities (Strong, Low to Moderate)
  - Flush toilet connected to: community sewer, imhoff tank, septic tank, digester tank, chemical tank
  - Pit privy: VIP latrine, Pit type and "antipolo" toilet
  - Any disposal device approved by the Secretary of health or his duly authorized representative.
- Open defecation is not recommended. (Strong, low to moderate)

Vaccines

- Killed Oral cholera vaccine may be given to children and adults living in an endemic area and during outbreaks to prevent acute infectious diarrhea caused by cholera. (Strong, Moderate to high)
- Universal immunization of infants against rotavirus is recommended. Rotavirus vaccines are effective in preventing rotavirus diarrhea and rotavirus diarrhea-associated hospitalization. (Strong, Moderate)

Supplements

- The following probiotics may be given to children and adult to prevent occurrence of acute infectious diarrhea (Strong, low)
  - *Bifidocaterium lactis*
  - *Lactobacillus rhamnosus GG*
  - *Lactobacillus reuteri*
- Zinc supplementation is recommended to prevent acute infectious diarrhea for 6 months to 12 years old. (Strong, Moderate)
- Vitamin A supplementation may be given to children (6 months and above) to prevent incidence of acute infectious diarrhea. The recommended doses are (Strong, Low):
  - 100,000 IU every 4-6 months for infants 6-12 months
  - 200,000 IU every 4-6 months for children over 12 months

Breastfeeding

- Exclusive breastfeeding is recommended during the first 6 months of life to prevent diarrhea. (Strong, Moderate)
- All healthcare providers should promote breastfeeding. (Strong, Moderate)

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OUTBREAK

Outbreak detection and management

- Outbreak is suspected in the following scenarios:
  - *"Cases of acute infectious diarrhea in excess of what would normally be expected in a defined community, geographical area or season lasting a few days or weeks or for several years"(World Health Organization)*
  - *"A single case of communicable disease that has been absent from a population, or caused by an agent not previously recognized in the community, or the emergence of a previously known disease"(Center for Disease Control)*
- Suspected cases of outbreaks should be reported immediately to disease reporting unit or disease surveillance coordinators.
- Collection of demographic data and specimen is mandatory. Stool samples via rectal swab or bulk stool should be sent to designated laboratories for analysis and confirmation. Water and food samples may also be collected, to determine the source of outbreak.
- Response to outbreak should involve epidemiologic investigation and formation of hypotheses, treatment of cases, implementation of control and prevention measures, and risk communication.

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