

**Covenant School of Nursing**  
**Instructional Module 4 Learning Guide**  
**Topic: Fluid and Electrolyte Balance**

**Learning Goals/Outcomes**

**Upon completion of this lesson, you will be able to:**

- Teach a fellow student about mechanisms that lead to fluid shifting and edema.
- Compare and contrast clinical manifestations of hypervolemia and hypovolemia.
- Compare and contrast clinical manifestations of potassium, sodium, calcium, and magnesium imbalances.
- Discuss laboratory tests determining fluid and electrolyte disorders.
- Identify and classify medications administered for fluid/electrolyte disorders.
- Assess patient response to treatment for patients with fluid and electrolyte imbalance.
- Implement a plan of care for a patient with disorders of fluid and electrolyte balance
- Apply the nursing process to promote normal fluid and electrolyte regulation in providing culturally competent care for individuals experiencing a fluid/electrolyte imbalance.

**Pre-Class Preparation**

**Required:**

- Read Lewis (11<sup>th</sup> Ed.): Ch. 16, pp. 268-283; Ch. Ch. 49, pp. 1147-1149
- Read Burcham & Rosenthal (Lehne's Pharmacology for Nursing Care, 10<sup>th</sup> Ed.): Ch. 41,42 (potassium, magnesium), 75 (hyper/hypocalcemia)

**Additional Resources:**

- You Tube videos
  - <https://www.youtube.com/watch?v=GhxQr6gMcrk> Hypokalemia (13:41)
  - <https://www.youtube.com/watch?v=-6b8svtDWys> Hyperkalemia (13:40)
  - <https://www.youtube.com/watch?v=cxVKcUiAUuE> Hyponatremia (13:56)
  - <https://www.youtube.com/watch?v=gHt3iwdpwQc> Hypernatremia (9:49)
  - <https://www.youtube.com/watch?v=lCOdq2RuMv0> Hypocalcemia (13:00)
  - <https://www.youtube.com/watch?v=-BO-AK4Z670> Hypercalcemia (10:16)
- Potter/Perry (9<sup>th</sup> Ed.): Ch. 42
- Extra Resources (pictures, graphs) in LMS

**Learning Activities**

Classroom Activities:

- Case studies
- Short lectures

Laboratory/Clinical Activities:

- Apply fluid and electrolyte concepts and medication administration to Med/Surg Clinical

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| <b>Computer Assisted Activities:</b> <ul style="list-style-type: none"> <li>HESI Case Studies / Fundamentals / Fluid Balance</li> <li>HESI Adaptive Quizzing 0920 / IM4 Graded: Fluid &amp; Electrolyte Material</li> </ul>                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                             |
| <b>Evaluation Methods</b> <ul style="list-style-type: none"> <li>Unit Exam</li> <li>HESI Fundamentals examination, proctored and non-proctored</li> <li>HESI Pharmacology</li> </ul>                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                             |
| <b>Texas DECs</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <b>QSEN Competencies</b>                                                                                                                                                                                                                                                                                                    |
| <b>Knowledge</b><br>II.A.1.a;II.A.1.b;II.A.2.a;II.A.2.b;II.B;II.B1;II.C;<br>II.D;II.D.1.b;II.E;II.E.1.a;II.E.1b;II.E.6.a;II.F;II.F.1;<br>II.G;II.G.1.a;II.G.2.a<br><b>Clinical Judgements &amp; Behaviors</b><br>I.A.2; I.B. 2a, 3a,3b,3c,5a;II.A.2a;B.5;C.1,2,4,5,<br>6,7;II.D.1;2a,2b,2d,3b;II.E.1.,2a,2b,c,3b,4,5a,b,6a,<br>b,c,d,7c,11,12a,B,13;II.F.1.c;2,a,3,4,5a,b,6;II.G.<br>1,2a,4,5a,b,6,7;III.A.2,3,4;B.1,3a,b,4,5,6,9;C.1,2a,<br>b;D.1,2,3;F1;IV.A,1a,B,1a,2a,b,3c5aC.1a,b,c;<br>2a,b;D.1a,b,2,3b;E.b,2a,b. | Evidence Based Practice<br>Patient Centered Care<br>Quality Improvement<br>Safety<br>Teamwork and Collaboration                                                                                                                                                                                                             |
| <b>IM Student Learning Outcomes</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <b>NCLEX Test Plan</b>                                                                                                                                                                                                                                                                                                      |
| 1/1,2/2,3/3,4/4,5/5,6/6,7/7, 8/8                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Safe and Effective Care<br>Managing and providing care for patients with fluid and electrolyte imbalances including IV fluids and medications<br>Physiological Integrity-Physiological Adaptation (alterations in body systems, pathophysiology)<br>Health Promotion and Maintenance<br>Providing care across the life span |
| <b>Concepts</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <b>Faculty</b>                                                                                                                                                                                                                                                                                                              |
| Fluid & Electrolytes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Abby Heinrich, MSN, RN                                                                                                                                                                                                                                                                                                      |
| <b>Date originated: 11-2-15</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <b>Revision Dates: 3-9-16, 7-26-16, 8-2-17; 2/14/18; 7/25/18; 8/28/19; 8/25/20</b>                                                                                                                                                                                                                                          |