Case 1:

An 82-year-old female resident displayed the following signs: High fever for 24 hours; lethargy past 2 days; cloudy, foul-smelling urine; and dysuria. Urinalysis microscopic exam and culture sensitivity were ordered.

Color Pale yellow-amber Yellow Clarity Clear to slightly hazy Cloudy * Urine chemistries Specific gravity 1.005–1.030 1.0–2.0 * Glucose Negative Negative Ketones Negative Negative pH 5.0–8.0 8.5 High Protein Negative Small * Blood Negative Negative Negative Urobilinogen 0.2–1.0 EU/dL 0.2 Nitrite Negative Pos * Leukocyte ester Negative Small Microscopic examination BACT/hpf None 4+ * WBC/hpf 0–2 50–100 RBC/hpf 0–2 2–5 * Pale yellow-amber Yellow Cloudy * Yellow Yellow Yellow Cloudy * Negative	Urinalysis Report:		
Clarity Clear to slightly hazy Cloudy ** Urine chemistries Specific gravity 1.005–1.030 1.0–2.0 * Glucose Negative Negative Ketones Negative Negative pH 5.0–8.0 8.5 High Protein Negative Small ** Blood Negative Small ** Bilirubin Negative Negative Urobilinogen 0.2–1.0 EU/dL 0.2 Nitrite Negative Pos ** Leukocyte ester Negative Small Microscopic examination BACT/hpf None 4+ ** WBC/hpf 0–2 50–100	Macroscopic Analysis	Normal	Date: 06/16/03
Urine chemistriesSpecific gravity1.005–1.0301.0–2.0 *GlucoseNegativeNegativeKetonesNegativeNegativepH5.0–8.08.5 HighProteinNegative30 *BloodNegativeSmall *BilirubinNegativeNegativeUrobilinogen0.2–1.0 EU/dL0.2NitriteNegativePos *Leukocyte esterNegativeSmallMicroscopic examinationBACT/hpfNone4+ *WBC/hpf0–250–100	Color	Pale yellow-amber	Yellow
Specific gravity 1.005–1.030 1.0–2.0 * Glucose Negative Negative Ketones Negative Negative pH 5.0–8.0 8.5 High Protein Negative 30 * Blood Negative Small * Bilirubin Negative Negative Urobilinogen 0.2–1.0 EU/dL 0.2 Nitrite Negative Pos * Leukocyte ester Negative Small Microscopic examination BACT/hpf None 4+ * WBC/hpf 0–2 50–100	Clarity	Clear to slightly hazy	Cloudy *
Glucose Negative Negative Ketones Negative Negative pH 5.0–8.0 8.5 High Protein Negative Small * Blood Negative Small * Bilirubin Negative Negative Urobilinogen 0.2–1.0 EU/dL 0.2 Nitrite Negative Pos * Leukocyte ester Negative Small Microscopic examination BACT/hpf None 4+ * WBC/hpf 0–2 50–100	Urine chemistries		
Ketones Negative Negative pH 5.0–8.0 8.5 High Protein Negative 30 * Blood Negative Small * Bilirubin Negative Negative Urobilinogen 0.2–1.0 EU/dL 0.2 Nitrite Negative Pos * Leukocyte ester Negative Small Microscopic examination BACT/hpf None 4+ * WBC/hpf 0–2 50–100	Specific gravity	1.005-1.030	1.0-2.0 *
pH 5.0-8.0 8.5 High Protein Negative 30 * Blood Negative Small * Bilirubin Negative Negative Urobilinogen 0.2-1.0 EU/dL 0.2 Nitrite Negative Pos * Leukocyte ester Negative Small Microscopic examination BACT/hpf None 4+ * WBC/hpf 0-2 50-100	Glucose	Negative	Negative
Protein Negative 30 * Blood Negative Small * Bilirubin Negative Negative Urobilinogen 0.2–1.0 EU/dL 0.2 Nitrite Negative Pos * Leukocyte ester Negative Small Microscopic examination BACT/hpf None 4+ * WBC/hpf 0–2 50–100	Ketones	Negative	Negative
Blood Negative Small * Negative Urobilinogen 0.2–1.0 EU/dL 0.2 Nitrite Negative Pos * Small Microscopic examination BACT/hpf None 4+ * WBC/hpf 0–2 50–100	pН	5.0-8.0	8.5 High
Bilirubin Negative Negative Urobilinogen 0.2–1.0 EU/dL 0.2 Nitrite Negative Pos * Leukocyte ester Negative Small Microscopic examination BACT/hpf None 4+ * WBC/hpf 0–2 50–100	Protein	Negative	30 *
Urobilinogen 0.2–1.0 EU/dL 0.2 Nitrite Negative Pos * Leukocyte ester Negative Small Microscopic examination BACT/hpf None 4+ * WBC/hpf 0–2 50–100	Blood	Negative	Small *
Nitrite Negative Pos * Leukocyte ester Negative Small Microscopic examination BACT/hpf None 4+ * WBC/hpf 0-2 50-100	Bilirubin	Negative	Negative
Leukocyte ester Negative Small Microscopic examination Here BACT/hpf None 4+ * * WBC/hpf 0-2 50-100	Urobilinogen	0.2-1.0 EU/dL	0.2
Microscopic examination BACT/hpf None 4+ * WBC/hpf 0-2 50-100	Nitrite	Negative	Pos *
BACT/hpf None 4+ * WBC/hpf 0-2 50-100	Leukocyte ester	Negative	Small
WBC/hpf 0-2 50-100	Microscopic examinatio		
	BACT/hpf	None	4+ *
RBC/hpf 0–2 2–5 <u>*</u>	WBC/hpf		
	RBC/hpf	0–2	2-5 *

^{* =} abnormal, HPF = high-powered field, LPF = low-powered field, NEG = negative, BACT = bacteria, WBC = white blood cells, RBC = red blood cells, SPEC = specific (as in specific gravity), POS = positive, TRC = trace, ABN = abnormal, EU = Ehrlich units, MIC = minimum inhibitory concentration (the lowest concentration of the antibiotic that inhibits the organism's growth), S = sensitive or susceptible, R = resistant, TMP-SMX = trimethoprim sulfamethoxazole

1.	What is the diagnosis and treatment for this patient? Why?
2.	What accounts for the clarity of the sample in the chemical and microscopical examination?
3.	Comment on each abnormal parameter (explanations).