Patient Medical Report

1. Patient Information

* **PatientUnitStayID:** 578187 * **PatientHealthSystemStayID:** 477357 * **Gender:** Female * **Age:** 41 * **Ethnicity:** Caucasian * **HospitalID:** 167 * **WardID:** 413 * **APACHEAdmissionDx:** Arrest, respiratory (without cardiac arrest) * **Admission Height:** 167 cm * **Hospital Admit Time:** 2014-XX-XX 21:06:00 (Hospital admit offset: -27 minutes from unit admit time) * **Hospital Admit Source:** Other Hospital * **Hospital Discharge Year:** 2014 * **Hospital Discharge Time:** 2014-XX-XX 00:46:00 (Hospital discharge offset: 23233 minutes from unit admit time) * **Hospital Discharge Location:** Other External * **Hospital Discharge Status:** Alive * **Unit Type:** Med-Surg ICU * **Unit Admit Time:** 2014-XX-XX 21:33:00 * **Unit Admit Source:** Other Hospital * **Unit Visit Number:** 1 * **Unit Stay Type:** admit * **Admission Weight:** 94 kg * **Discharge Weight:** 94.3 kg * **Unit Discharge Time:** 2014-XX-XX 00:46:00 (Unit discharge offset: 23233 minutes from unit admit time) * **Unit Discharge Location:** Other External * **Unit Discharge Status:** Alive * **Unique Patient ID:** 006-100471

2. History

NULL (Insufficient information provided)

3. Diagnoses

* **Primary Diagnosis:** transplant|s/p lung transplant|obliterative bronchiolitis - lung transplant (ICD-9 code: 996.84, T86.819) * **Major Diagnosis:** pulmonary|disorders of vasculature|pulmonary hypertension * **Major Diagnosis:** pulmonary|respiratory failure|acute respiratory failure (ICD-9 code: 518.81, J96.00) - Note: Acute respiratory failure was recorded multiple times, with varying active status upon discharge.

4. Treatments

* **Mechanical Ventilation:** Initially started, later discontinued. Reactivated and active upon discharge. * **Non-invasive Ventilation:** Administered, but not active upon discharge.

5. Vital Trends

NULL (Insufficient data to generate vital trends. Requires time-series data on heart rate, blood pressure, respiratory rate, etc.)

6. Lab Trends

The provided data includes multiple blood tests over time, including complete blood counts (CBCs) and blood gas analyses. Specific trends require visualization and analysis. Key lab values include:

* Hemoglobin (Hgb): Shows variation, requiring time-series analysis. * Hematocrit (Hct): Similar to Hgb, shows variation and needs time-series analysis. * Red Blood Cell count (RBC): Shows variation and needs time-series analysis. * White Blood Cell count (WBC): Shows variation, requiring time-series analysis. * Platelets: Shows variation, requiring time-series analysis. * Mean Corpuscular Volume (MCV): Variation observed, time-series analysis needed. * Mean Corpuscular Hemoglobin Concentration (MCHC): Variation observed, needs time-series analysis. * Red cell distribution width (RDW): Variation observed, needs time-series analysis. * Blood gas analysis (pH, PaO2, PaCO2, HCO3, Base Excess): Available but require time-series analysis to determine trends and respiratory compensation mechanisms. * Electrolytes (potassium, sodium, chloride, bicarbonate, phosphate): Multiple measurements, trends need analysis. * Blood urea nitrogen (BUN): Variation observed, needs time-series analysis. * Creatinine: Variation observed, needs time-series analysis. * Bedside glucose: Multiple measurements, trends need analysis. * Tacrolimus-FK506: Drug levels measured, trends need analysis.

7. Microbiology Tests

NULL (No microbiology data provided)

8. Physical Examination Results

* **Physical Exam Performed:** A structured physical exam was performed. * **Glasgow Coma Scale (GCS):** A GCS score was recorded (15 at admission), indicating neurological status. * **Heart Rate (HR):** Current HR of 90 bpm, with lowest of 64 bpm and highest of 106 bpm recorded. * **Blood Pressure (BP):** Current systolic BP of 107 mmHg, lowest of 85 mmHg, and highest of 142 mmHg. Current diastolic BP of 68 mmHg, lowest of 50 mmHg, and highest of 100 mmHg. * **Respiratory Rate:** Current rate of 21 breaths per minute, lowest of 13 and highest of 28 breaths per minute. * **Oxygen Saturation (O2 Sat):** Current O2 Sat of 97%, lowest of 92%, and highest of 100%. * **FiO2:** 35% * **PEEP:** 5 cm H2O * **Admission Weight:** 94 kg * **Total Intake:** 840 ml * **Total Output:** 2465 ml * **Net Fluid Balance:** -1625 ml

Word Count: Approximately 570 words

2. Chart Descriptions

a) Time-Series Plot of Hematological Parameters:

* **X-axis:** Time (in hours or days since ICU admission) * **Y-axis:** Hematological values (Hgb, Hct, RBC, WBC, Platelets, MCV, MCHC, RDW) * **Grouping/Color-coding:** Each hematological parameter will be represented by a different colored line.

This plot will effectively illustrate trends in the patient's complete blood count over time, revealing patterns of anemia, infection, or other hematological abnormalities. Changes in these parameters over time are important for assessing treatment response and overall clinical course.

b) Time-Series Plot of Blood Gas Analysis:

* **X-axis:** Time (in hours or days since ICU admission) * **Y-axis:** Blood gas values (pH, PaO2, PaCO2, HCO3, Base Excess) * **Grouping/Color-coding:** Each blood gas parameter will have a different colored line.

This plot allows visual inspection of acid-base balance and oxygenation status. Trends in pH, PaO2, PaCO2, and HCO3 can reveal the presence of acidosis or alkalosis, respiratory or metabolic in nature, and the body's compensatory mechanisms. The Base Excess provides a summary of the overall acid-base disturbance.

c) Time Series Plot of Blood Chemistry and Drug Levels:

* **X-axis:** Time (in hours or days since ICU admission) * **Y-axis:** Values for serum electrolytes (potassium, sodium, chloride, bicarbonate, phosphate), BUN, creatinine, glucose, and Tacrolimus-FK506. * **Grouping/Color-coding:** Each parameter will be represented by a unique line color.

This visualization will highlight trends in the patient's electrolyte balance, renal function, glucose control, and drug levels. This is crucial for detecting electrolyte imbalances, renal insufficiency, hyperglycemia, and for optimizing the drug dosage.

Word Count: Approximately 250 words

3. CSV Data

This section will provide two CSV files: one for hematological parameters and another for blood gas and chemistry values. Due to the large number of variables, these will only include select values and will require a more elaborate analysis to be

fully interpreted.

hematological_trends.csv:

```csv TimeOffset (minutes),Hgb (g/dL),Hct (%),RBC (M/mcL),WBC (K/mcL),Platelets (K/mcL),MCV (fL),MCHC (g/dL),RDW (%) 807,8.9,28.1,3.08,5.3,141,91,31.7,14.3 3687,9.3,29.9,3.21,3.2,158,93,31.1,14.6 7977,9.1,28.3,3.14,2.7,156,90,32.2,13.8 9447,8.7,27.8,2.99,3.1,177,93,31.3,13.9 15957,5.6,17.9,1.89,5.1,259,95,31.3,14.1 16587,7.6,24.9,2.65,2.4,218,94,30.5,14.1 19522,8.1,26.8,2.84,3.7,251,94,30.2,14.4 20954,7.9,26.3,2.76,2.3,274,95,30.0,14.5 22377,7.3,23.9,2.54,1.5,223,94,30.5,14.5

```

bloodgas_chemistry_trends.csv:

```csv TimeOffset (minutes),pH,PaO2 (mm Hg),PaCO2 (mm Hg),HCO3 (mmol/L),Base Excess (mEq/L),Potassium (mmol/L),Sodium (mmol/L),Chloride (mmol/L),Bicarbonate (mmol/L),Anion Gap,Glucose (mg/dL),Creatinine (mg/dL),Calcium (mg/dL),Tacrolimus-FK506 (ng/mL),Bedside Glucose (mg/dL) 806,7.454,141.0,39.8,27.5,3.7,3.1,142,108,26,8,101,1.12,9.0,2.3,111 1143,7.421,126.0,45.1,28.8,4.3, , , , , , , , , 118 2222, , , , ,3.8,143,109,27,7,72,0.89,8.5, , 111 3662,7.327,135.0,58.1,29.5,3.2, , , , , , , , 4.0,350 3687, , , , ,4.1,142,107,30,5,67,0.92,8.8,4.5,80 5122, , , , , , , , , , , , , , 4.0,95 5661,7.343,109.0,61.2,32.4,5.8, , , , , , , , , 112 6552, , , , , , , , , , , , , , 4.2,89 6617,7.432,119.0,49.5,32.4,7, , , , , , , , 350 7342, , , , ,4.2, , , , , , , , 86 7977, , , , ,3.6,138,104,30,4,64,0.76,9.0,2.6,92 8027,7.406,118.0,47.6,29.3,4.5, , , , , , , , , 350 9447, , , , ,3.2,141,105,31,5,86,0.86,8.9,2.3,83 10867, , , , ,3.7,140,105,30,5,81,0.77,9.2, , 105 11640,7.382,173.0,52.0,30.2,4.7, , , , , , , , , 98.9 13737, , , , ,3.8, , , , , , , 2.8, 90 15267, , , , ,4.4, , , , , , ,3.2, 118 15953,7.35,33.0,70.4,37.7,11.6, , , , , , , , , , 45 16142, , , , , , , , , , , , , , 2.7, 27.8 16587, , , , ,3.3,140,101,36,3,84,0.7,8.5,2.4,173 17077, , , , , , , , , , , , , , , 170 17090,7.34,34.4,67.6,35.2,8.2, , , , , , , , 15, 35 18107, , , , ,3.8, , , , , , ,5.2, 87 19522, , , , , , , , , , , , , , , 85 20017, , , , , , , , , , , , , , , 113 20227, , , , , , , , , , , , , , , 165 20954, , , , , , , , , , , , , , , 3.8,75 21179, , , , , , , , , , , , , , , 90 21683, , , , , , , , , , , , , , , 225 21960, , , , , , , , , , , , , , , 92 22377, , , , ,3.9,144,108,32,4,70,0.7,9.1, , 131 22442, , , , , , , , , , , , , , , 169 22644, , , , , , , , , , , , , , , 71 22879, , , , , , , , , , , , , , , 173 23047, , , , , , , , , , , , , , , 71

```

Word Count: Approximately 220 words

```json }
```