

**\*\*Patient Information\*\***

Patient Unit Stay ID: 297175 Patient Health System Stay ID: 256721 Gender: Male Age: 61 Ethnicity: Caucasian Hospital ID: 92 Ward ID: 143 Admission Diagnosis: Emphysema/bronchitis Admission Height: 170.2 cm Admission Weight: 47.5 kg Discharge Weight: 47.5 kg Hospital Admit Time: 01:21:00 Hospital Discharge Time: 17:40:00 Hospital Admit Source: Emergency Department Hospital Discharge Location: Home Hospital Discharge Status: Alive Unit Type: Med-Surg ICU Unit Admit Time: 01:21:00 Unit Admit Source: Direct Admit Unit Visit Number: 1 Unit Stay Type: admit Unit Discharge Time: 16:56:00 Unit Discharge Location: Floor Unit Discharge Status: Alive Unique Patient ID: 003-10109

**\*\*History\*\***

NULL (Insufficient data provided)

**\*\*Diagnoses\*\***

The patient presented with multiple diagnoses during their ICU stay. The diagnoses, their ICD-9 codes, and their active status upon discharge are listed below. Note that diagnosis priority is noted as 'Other' for all entries.

\* Diagnosis ID 4866897: pulmonary|respiratory failure|acute respiratory failure|due to increased CO2 production (518.81, J96.00) - Active upon discharge: False \* Diagnosis ID 5213233: pulmonary|disorders of the airways|COPD|severe (491.20, J44.9) - Active upon discharge: True \* Diagnosis ID 5011382: pulmonary|disorders of the airways|acute COPD exacerbation (491.21, J44.1) - Active upon discharge: True \* Diagnosis ID 5199017: pulmonary|respiratory failure|hypoxemia (799.02, J96.91) - Active upon discharge: False \* Diagnosis ID 4953673: pulmonary|respiratory failure|acute respiratory failure|due to increased CO2 production (518.81, J96.00) - Active upon discharge: False \* Diagnosis ID 5150597: pulmonary|disorders of acid base|respiratory acidosis (276.2, E87.2) - Active upon discharge: True \* Diagnosis ID 4384015: pulmonary|disorders of acid base|respiratory acidosis (276.2, E87.2) - Active upon discharge: False \* Diagnosis ID 4948291: pulmonary|respiratory failure|hypoxemia (799.02, J96.91) - Active upon discharge: True \* Diagnosis ID 4415231: pulmonary|disorders of acid base|respiratory acidosis (276.2, E87.2) - Active upon discharge: False \* Diagnosis ID 5236012: pulmonary|respiratory failure|acute respiratory failure|due to increased CO2 production (518.81, J96.00) - Active upon discharge: False \* Diagnosis ID 4525991: pulmonary|disorders of the airways|acute COPD exacerbation (491.21, J44.1) - Active upon discharge: False \* Diagnosis ID 4895095: pulmonary|respiratory failure|hypercarbia (786.09, J96.92) - Active upon discharge: True \* Diagnosis ID 4364418: pulmonary|respiratory failure|hypercarbia (786.09, J96.92) - Active upon discharge: False \* Diagnosis ID 4873402: pulmonary|disorders of acid base|respiratory acidosis (276.2, E87.2) - Active upon discharge: False \* Diagnosis ID 5301753: pulmonary|disorders of the airways|acute COPD exacerbation (491.21, J44.1) - Active upon discharge: False \* Diagnosis ID 4462139: pulmonary|respiratory failure|acute respiratory failure|due to increased CO2 production (518.81, J96.00) - Active upon discharge: True \* Diagnosis ID 4874572: pulmonary|disorders of the airways|acute COPD exacerbation (491.21, J44.1) - Active upon discharge: False \* Diagnosis ID 5288298: pulmonary|respiratory failure|hypercarbia (786.09, J96.92) - Active upon discharge: False \* Diagnosis ID 4788229: pulmonary|disorders of acid base|respiratory acidosis (276.2, E87.2) - Active upon discharge: False \* Diagnosis ID 4495914: pulmonary|respiratory failure|hypoxemia (799.02, J96.91) - Active upon discharge: False \* Diagnosis ID 5093892: pulmonary|disorders of the airways|COPD|severe (491.20, J44.9) - Active upon discharge: False \* Diagnosis ID 5011730: pulmonary|respiratory failure|hypoxemia (799.02, J96.91) - Active upon discharge: False \* Diagnosis ID 4721633: pulmonary|respiratory failure|acute respiratory failure|due to increased CO2 production (518.81, J96.00) - Active upon discharge: False \* Diagnosis ID 5284966: pulmonary|disorders of the airways|COPD|severe (491.20, J44.9) - Active upon discharge: False \* Diagnosis ID 5192176: pulmonary|disorders of the airways|acute COPD exacerbation (491.21, J44.1) - Active upon discharge: False \* Diagnosis ID 4391279: pulmonary|disorders of the airways|COPD|severe (491.20, J44.9) - Active upon discharge: False \* Diagnosis ID 5080124: pulmonary|respiratory failure|hypercarbia (786.09, J96.92) - Active upon discharge: False \* Diagnosis ID 4522903: pulmonary|disorders of the airways|COPD|severe (491.20, J44.9) - Active upon discharge: False \* Diagnosis ID 4815034: pulmonary|respiratory failure|hypoxemia (799.02, J96.91) - Active upon discharge: False \* Diagnosis ID 4300191: pulmonary|respiratory failure|hypercarbia (786.09, J96.92) - Active upon discharge: False

This demonstrates the complexity of the patient's respiratory condition, with multiple diagnoses related to respiratory failure, COPD, and acid-base imbalance. The persistence of some diagnoses (active upon discharge) highlights the chronic nature of the underlying conditions.

## **\*\*Treatments\*\***

The patient received a variety of treatments during their ICU stay. The treatments, their descriptions, and their active status upon discharge are detailed below. Note that the treatment string indicates the hierarchical classification of the treatment.

\* Treatment ID 8994020: cardiovascular|vascular disorders|VTE prophylaxis|low molecular weight heparin|enoxaparin - Active upon discharge: False \* Treatment ID 8603608: neurologic|pain / agitation / altered mentation|analgesics|narcotic analgesic - Active upon discharge: False \* Treatment ID 10012594: pulmonary|medications|bronchodilator|nebulized - Active upon discharge: False \* Treatment ID 8992789: neurologic|pain / agitation / altered mentation|analgesics|narcotic analgesic - Active upon discharge: False \* Treatment ID 10256834: pulmonary|medications|bronchodilator - Active upon discharge: False \* Treatment ID 9042670: pulmonary|medications|antibacterials|macrolide|azithromycin - Active upon discharge: False \* Treatment ID 8954296: pulmonary|medications|antibacterials|third generation cephalosporin|ceftriaxone - Active upon discharge: False \* Treatment ID 8470020: infectious diseases|cultures / immuno-assays|cultures|sputum - Active upon discharge: False \* Treatment ID 9792176: neurologic|pain / agitation / altered mentation|analgesics|oral analgesics - Active upon discharge: True \* Treatment ID 8878291: gastrointestinal|medications|stress ulcer prophylaxis|omeprazole - Active upon discharge: True \* Treatment ID 10112394: pulmonary|medications|antibacterials|vancomycin - Active upon discharge: False \* Treatment ID 8278503: pulmonary|medications|glucocorticoid administration - Active upon discharge: False \* Treatment ID 8959728: pulmonary|medications|glucocorticoid administration - Active upon discharge: False \* Treatment ID 8478710: surgery|seizure therapy|anticonvulsant|gabapentin - Active upon discharge: True \* Treatment ID 9682368: neurologic|pain / agitation / altered mentation|analgesics|narcotic analgesic - Active upon discharge: False \* Treatment ID 8943732: pulmonary|medications|bronchodilator|beta-agonist - Active upon discharge: True \* Treatment ID 9901798: cardiovascular|vascular disorders|VTE prophylaxis|low molecular weight heparin|enoxaparin - Active upon discharge: False \* Treatment ID 8947404: infectious diseases|cultures / immuno-assays|cultures|sputum - Active upon discharge: False \* Treatment ID 8837265: pulmonary|medications|antibacterials|third generation cephalosporin|ceftriaxone - Active upon discharge: False \* Treatment ID 8428541: pulmonary|medications|antibacterials|third generation cephalosporin|ceftriaxone - Active upon discharge: False \* Treatment ID 9838708: infectious diseases|medications|therapeutic antibacterials|vancomycin - Active upon discharge: True \* Treatment ID 9130851: pulmonary|consultations|Pulmonary medicine consultation - Active upon discharge: False \* Treatment ID 8714489: infectious diseases|medications|therapeutic antibacterials|vancomycin - Active upon discharge: False \* Treatment ID 8737140: pulmonary|medications|antibacterials|third generation cephalosporin|ceftriaxone - Active upon discharge: False \* Treatment ID 9086180: infectious diseases|cultures / immuno-assays|cultures|sputum - Active upon discharge: False \* Treatment ID 8303190: pulmonary|medications|glucocorticoid administration - Active upon discharge: False \* Treatment ID 9721961: pulmonary|medications|bronchodilator|beta-agonist - Active upon discharge: False \* Treatment ID 8599292: pulmonary|medications|antibacterials|macrolide|azithromycin - Active upon discharge: True \* Treatment ID 8940918: pulmonary|ventilation and oxygenation|non-invasive ventilation - Active upon discharge: False \* Treatment ID 8662317: pulmonary|medications|bronchodilator|beta-agonist - Active upon discharge: False \* Treatment ID 10063964: neurologic|pain / agitation / altered mentation|analgesics|non-narcotic analgesic|acetaminophen - Active upon discharge: False \* Treatment ID 8297326: pulmonary|consultations|Pulmonary medicine consultation - Active upon discharge: False \* Treatment ID 9512638: neurologic|pain / agitation / altered mentation|analgesics|non-narcotic analgesic|acetaminophen - Active upon discharge: False \* Treatment ID 8473663: neurologic|pain / agitation / altered mentation|systemic glucocorticoid|methylprednisolone - Active upon discharge: False \* Treatment ID 9753947: cardiovascular|myocardial ischemia / infarction|antiplatelet agent|aspirin - Active upon discharge: False \* Treatment ID 8441157: neurologic|pain / agitation / altered mentation|analgesics|oral analgesics - Active upon discharge: False \* Treatment ID 9333221: surgery|seizure therapy|anticonvulsant|gabapentin - Active upon discharge: False \* Treatment ID 8676743: pulmonary|medications|antibacterials|third generation cephalosporin|ceftriaxone - Active upon discharge: True \* Treatment ID 9718527: cardiovascular|vascular disorders|VTE prophylaxis|low molecular weight heparin|enoxaparin - Active upon discharge: False \* Treatment ID 8709615: gastrointestinal|medications|stress ulcer prophylaxis|omeprazole - Active upon discharge: False \* Treatment ID 9580958: neurologic|pain / agitation / altered mentation|analgesics|narcotic analgesic - Active upon discharge: True \* Treatment ID 8466661: surgery|seizure therapy|anticonvulsant|gabapentin - Active upon discharge: False \* Treatment ID 9693602: pulmonary|medications|antibacterials|macrolide|azithromycin - Active upon discharge: False \* Treatment ID 8366976: pulmonary|medications|antibacterials|macrolide|azithromycin - Active upon discharge: False \* Treatment ID 9273401: pulmonary|consultations|Pulmonary medicine consultation - Active upon discharge: True \* Treatment ID 8503699: neurologic|pain / agitation / altered mentation|analgesics|oral analgesics - Active upon discharge: False \* Treatment ID 9915845: neurologic|pain / agitation / altered mentation|systemic glucocorticoid|methylprednisolone - Active upon discharge: True \* Treatment ID 8283864: pulmonary|ventilation and oxygenation|non-invasive ventilation - Active upon discharge: False \* Treatment ID 9564288: infectious diseases|cultures / immuno-assays|cultures|sputum - Active upon discharge: True \* Treatment ID 8017640:

pulmonary|medications|bronchodilator|nebulized - Active upon discharge: True \* Treatment ID 10308574: neurologic|pain / agitation / altered mentation|analgesics|non-narcotic analgesic|acetaminophen - Active upon discharge: False \* Treatment ID 9341868: pulmonary|medications|antibacterials|vancomycin - Active upon discharge: False \* Treatment ID 8000332: neurologic|pain / agitation / altered mentation|analgesics|non-narcotic analgesic|acetaminophen - Active upon discharge: True \* Treatment ID 10255801: infectious diseases|medications|therapeutic antibacterials|vancomycin - Active upon discharge: False \* Treatment ID 9581137: cardiovascular|myocardial ischemia / infarction|antiplatelet agent|aspirin - Active upon discharge: False \* Treatment ID 8012010: pulmonary|medications|antibacterials|vancomycin - Active upon discharge: True \* Treatment ID 10147358: pulmonary|ventilation and oxygenation|non-invasive ventilation - Active upon discharge: True \* Treatment ID 9367752: pulmonary|medications|glucocorticoid administration - Active upon discharge: False \* Treatment ID 8000186: infectious diseases|cultures / immuno-assays|cultures|sputum - Active upon discharge: False \* Treatment ID 10122894: pulmonary|medications|antibacterials|vancomycin - Active upon discharge: False \* Treatment ID 9268418: neurologic|pain / agitation / altered mentation|systemic glucocorticoid|methylprednisolone - Active upon discharge: False \* Treatment ID 8110233: gastrointestinal|medications|stress ulcer prophylaxis|omeprazole - Active upon discharge: False \* Treatment ID 10140558: pulmonary|ventilation and oxygenation|non-invasive ventilation - Active upon discharge: False \* Treatment ID 9537634: pulmonary|medications|antibacterials|vancomycin - Active upon discharge: False \* Treatment ID 8156136: pulmonary|medications|glucocorticoid administration - Active upon discharge: True \* Treatment ID 10368103: pulmonary|medications|bronchodilator|beta-agonist - Active upon discharge: False \* Treatment ID 9574099: pulmonary|medications|antibacterials|macrolide|azithromycin - Active upon discharge: False \* Treatment ID 8220882: neurologic|pain / agitation / altered mentation|systemic glucocorticoid|methylprednisolone - Active upon discharge: False \* Treatment ID 10105184: cardiovascular|vascular disorders|VTE prophylaxis|low molecular weight heparin|enoxaparin - Active upon discharge: True \* Treatment ID 9403265: cardiovascular|vascular disorders|VTE prophylaxis|low molecular weight heparin|enoxaparin - Active upon discharge: False \* Treatment ID 8097792: pulmonary|medications|bronchodilator|nebulized - Active upon discharge: False \* Treatment ID 10084948: neurologic|pain / agitation / altered mentation|analgesics|oral analgesics - Active upon discharge: False \* Treatment ID 9549079: gastrointestinal|medications|stress ulcer prophylaxis|omeprazole - Active upon discharge: False \* Treatment ID 10297853: pulmonary|medications|antibacterials|vancomycin - Active upon discharge: False \* Treatment ID 9267018: pulmonary|ventilation and oxygenation|non-invasive ventilation - Active upon discharge: False \* Treatment ID 10356020: pulmonary|medications|bronchodilator|nebulized - Active upon discharge: False \* Treatment ID 9231164: cardiovascular|myocardial ischemia / infarction|antiplatelet agent|aspirin - Active upon discharge: False \* Treatment ID 10211077: surgery|seizure therapy|anticonvulsant|gabapentin - Active upon discharge: False \* Treatment ID 10280034: cardiovascular|myocardial ischemia / infarction|antiplatelet agent|aspirin - Active upon discharge: True

The extensive treatment regimen reflects the severity and complexity of the patient's condition, involving multiple drug classes (antibiotics, bronchodilators, analgesics, etc.) and supportive care (ventilation, VTE prophylaxis). The continued use of some treatments at discharge indicates ongoing management requirements.

#### **\*\*Vital Trends\*\***

NULL (Insufficient data provided)

#### **\*\*Lab Trends\*\***

The provided lab data includes several blood tests performed at different time points during the patient's stay. Key trends will be analyzed in the visualization section. The lab data includes Hemoglobin (Hgb), Hematocrit (Hct), Red Blood Cell count (RBC), Mean Corpuscular Volume (MCV), Mean Corpuscular Hemoglobin (MCH), Mean Corpuscular Hemoglobin Concentration (MCHC), Red cell distribution width (RDW), Platelet count, White blood cell count (WBC), Blood chemistry (sodium, bicarbonate, chloride, calcium, glucose, albumin, total protein, prealbumin, total bilirubin, anion gap, creatinine, ALT, AST), and Arterial Blood Gas (ABG) results (pH, PaO2, PaCO2, O2 saturation, Base Excess), and FiO2. Some tests were repeated multiple times, allowing for monitoring of changes over time.

#### **\*\*Microbiology Tests\*\***

The patient underwent sputum cultures (Treatment IDs 8470020, 8947404, 9564288, 8000186). Results are not included in the provided data. NULL

#### **\*\*Physical Examination Results\*\***

Physical exam data was recorded at multiple time points. The data includes observations on general appearance (ill-appearing, cachectic, not in acute distress), vital signs (heart rate, blood pressure, respiratory rate, oxygen saturation), and neurological status (Glasgow Coma Scale - GCS). Specific numerical values are provided for heart rate, blood pressure, respiratory rate, and oxygen saturation at various times, along with the respiratory mode.

## **\*\*1. Chart Description\*\***

A line chart will be the most effective visualization to show the trends in the patient's lab results over time. The x-axis will represent the time since unit admission (in minutes), and the y-axis will represent the lab result values. Each line on the chart will represent a different lab test (e.g., Hemoglobin, Hematocrit, Oxygen Saturation, pH, PaCO<sub>2</sub>, PaO<sub>2</sub>, Bicarbonate). This will allow us to identify patterns in the changes of these values over time, revealing the progression of the patient's condition and the effectiveness of treatment. A separate panel would display electrolytes and blood chemistries over time.

## **\*\*2. CSV Data\*\***

The CSV data below includes the most critical lab results over time. Note that multiple lab tests were taken at the same time, and values are extracted from the `lab` table. All times are expressed as minutes from unit admission.

```
```csv
Time (minutes),pH,PaO2 (mm Hg),PaCO2 (mm Hg),HCO3 (mmol/L),O2 Sat (%),Base Excess (mEq/L),FiO2 (%)
45,7.275,,66.4,93.1,43.2,88.1,12,40 529,NULL,,NULL,NULL,42,NULL,NULL,NULL 715,7.452,,78,57,39.8,95.6,13.3,45
1984,NULL,,NULL,NULL,37,NULL,NULL,NULL 2172,NULL,,NULL,NULL,NULL,NULL,36
3417,NULL,,NULL,NULL,30,NULL,NULL,NULL -13,7.244,,99.7,103.2,44.7,95.6,12.9,50
```
```

```
Time (minutes),Hemoglobin (g/dL),Hematocrit (%),RBC (M/mcL),MCV (fL),MCH (pg),MCHC (g/dL),RDW (%),Platelets (K/mcL),WBC (K/mcL)
529,11.9,38.5,3.83,100.5,31,30.9,16.4,202,5.7 1984,11.4,35.5,3.69,96.2,30.8,32.1,16.8,199,14
3417,11.6,35.3,3.72,94.9,31.1,32.8,17.2,195,11.2 ```
```

Note: NULL values indicate that a particular test was not performed at that time point. Additional CSV tables could be generated for other lab results, as needed.