**Acute Respiratory Failure Dataset**

This dataset[[1]](#footnote-1) will be used to develop a prediction model of 30 day survival for critically ill patients admitted to an intensive care unit with Acute Respiratory Failure (ARF). It will also test whether or not a patient received right heart catheterization(also called the Swan-Ganz catheter, noted in variable **swang1**) changes the probability of survival. The outcome is survival 30 days after the study admission date, measured by **dth30**. The data set has 2490 observations and 47 variables (as seen in tables below) that can be classified into three basic groups:

1. Patient medical history, which includes 12 dichotomous variables that indicate the patient has had a given condition in the past. These variables have an "hx" as the last two letters of the variable names.

2. Current condition variables, that provide information about the patient's current health status including three scales the DASI (measures physical function), the APACHE (a summary of vital statistics and chronic disease status) and the Glasgow Coma Score (assesses level of consciousness); a variety of vital statistics (mean blood pressure, white blood count, heart and respiratory rate, etc.) and number of dichotomous diagnosis variables for the current admission (respiratory, grey vascular, neurological, etc.).

3. Demographic characteristics, including age, gender, weight, DNR status and race.

**Table 1: variables in the right heart catheterization data set.**

|  |  |  |
| --- | --- | --- |
| Name | Description | Type |
| cardiohx | Acute MI, Peripheral Vascular or Cardiovascular Disease | Dichotomous |
| chfhx | Congestive Heart Failure | Dichotomous |
| dementhx | Dementia, Stroke or Cerebral Infarct, Parkinson's Disease | Dichotomous |
| psychhx | Psychiatric History, Active Psychosis or Severe Depression | Dichotomous |
| chrpulhx | Chronic Pulmonary Disease, Severe Pulmonary Disease | Dichotomous |
| renalhx | Chronic Renal Disease, Chronic Hemodialysis or Peritoneal Dialysis | Dichotomous |
| liverhx | Cirrhosis, Hepatic Failure | Dichotomous |
| gibledhx | Upper GI Bleeding | Dichotomous |
| malighx | Solid Tumor, Metastatic Disease, Myeloma, Leukemia, Lymphoma | Dichotomous |
| immunhx | Immunosuppression | Dichotomous |
| transhx | Transfer (> 24 Hours) from Another Hospital | Dichotomous |
| amihx | Definite Myocardial Infarction | Dichotomous |
| age |  | Continuous |
| Female |  | Dichotomous |
| edu | Years of Education | Continuous |
| surv2md1 | Support model estimate of the prob. of surviving 2 months | Continuous |
| das2d3pc | DASI ( Duke Activity Status Index) | Continuous |

**Table 1: continued**

|  |  |  |
| --- | --- | --- |
| Name | Description | Type |
| dth30 | Death at 30 days | Dichotomous |
| aps1 | APACHE score | Continuous |
| scoma1 | Glasgow Coma Score | Continuous |
| meanbp1 | Mean blood pressure | Continuous |
| wblc1 | WBC | Continuous |
| hrt1 | Heart rate | Continuous |
| resp1 | Respiratory rate | Continuous |
| temp1 | Temperature | Continuous |
| pafi1 | PaO2/FIO2 ratio | Continuous |
| alb1 | Albumin | Continuous |
| hema1 | Hematocrit | Continuous |
| bili1 | Bilirubin | Continuous |
| crea1 | Creatinine | Continuous |
| sod1 | Sodium | Continuous |
| pot1 | Potassium | Continuous |
| paco21 | PaCo2 | Continuous |
| ph1 | PH | Continuous |
| swang1 | Right Heart Catheterization (RHC) | Dichotomous |
| wtkilo1 | Weight, Kg | Continuous |
| dnr1 | DNR status on day1 | Dichotomous |
| resp | Respiratory Diagnosis | Dichotomous |
| card | Cardiovascular Diagnosis | Dichotomous |
| neuro | Neurological Diagnosis | Dichotomous |
| gastr | Gastrointestinal Diagnosis | Dichotomous |
| renal | Renal Diagnosis | Dichotomous |
| meta | Metabolic Diagnosis | Dichotomous |
| hema | Hematologic Diagnosis | Dichotomous |
| seps | Sepsis Diagnosis | Dichotomous |
| trauma | Trauma Diagnosis | Dichotomous |
| ortho | Orthopedic Diagnosis | Dichotomous |
| adld3p | ADL | Continuous |
| urin1 | Urine output | Continuous |
| race |  | Categorical |
| Ptid | Patient ID | NA |

**Table 2: Response Levels for Categorical Variables.**

|  |  |
| --- | --- |
| Variable | Levels |
| cat1 | ARF (Acute Respiratory Failure) |
|  | COPD (Chronic Obstructive Pulmonary Disease) |
|  | CHF (Congestive Heart Failure) |
|  | Cirrhosis |
|  | Coma |
|  | Colon Cancer |
|  | Lung Cancer |
|  | MOSF w/Malignancy (Multi-Organ System Failure) |
|  | MOSF w/Sepsis (Multi-Organ System Failure) |
|  | Missing |
| cat2 | ARF |
|  | COPD |
|  | CHF |
|  | Cirrhosis |
|  | Coma |
|  | Colon Cancer |
|  | Lung Cancer |
|  | MOSF w/Malignancy |
|  | MOSF w/Sepsis |
|  | Missing |
| cancer | No |
|  | Yes |
|  | Metastatic |
| ninsclas | No insurance |
|  | Private |
|  | Medicare |
|  | Medicaid |
|  | Private & Medicare |
|  | Medicare & Medicaid |
| race | white |
|  | black |
|  | asian |
|  | other |
| income | Under $11k |
|  | $11-$25k |
|  | $25-$50k |
|  | > $50k |

1. This dataset was used in: Connors, AF; Speroff, T; Dawson, NV; Thomas, C; Harrell, FE; Wagner, D; Desbiens, N; Goldman, L; Wu, AW; Califf, RM; Fulkerson, WJ; Vidaillet, H; Broste, S; Bellamy, P; Lynn, J; Knaus, WA. (1996): The effectiveness of right heart catheterizationin the initial care of critically ill patients. *JAMA* 276:889-897. From <http://biostat.mc.vanderbilt.edu/wiki/Main/DataSets> [↑](#footnote-ref-1)