Our research group at Carleton University is currently investigating the novel use of pressure-sensitive mats (PSM) for patient monitoring in the neonatal intensive care unit. To investigate the potential for PSM for respiration and patient movement detection, gold standard physiological data are required. Children's Hospital of Eastern Ontario (CHEO) is our research partner, where physiological data are acquired using the Infinity Delta patient monitor series (Dräger Medical, Germany). Currently, one must purchase proprietary data logging software to acquire data from these monitors. The goal of my research project is to develop user-friendly open source software applications that can function in real-time to (a) import physiological data from patient monitors; (b) display data parameters and acquisition status in a graphical user interface; (c) export the data in decimal format to a .csv file; and (d) facilitate data logging from a variety of patient monitors through modular expansion of the open source code. I have developed the Patient Monitor Data Importer (PMDI) and *parser*PMDI applications with the above functionality. These applications programmed in Java communicate with the monitor to import physiological data in hexadecimal messages. The message is then parsed into a decimal table and stored as a .csv file. Currently, these two applications enable researchers to collect and parse physiological data from the Dräger patient monitors. However, their modular design can be modified to import data from monitoring equipment from other vendors. The current PMDI imports and parses discrete parameters such as heart and pulse rates and discrete alarm events. The PMDI app shall be improved to import the underlying analog continuous electrocardiograph (ECG) and photoplethysmography (PPG) waveforms to permit more detailed analysis of these signals. Lastly, I intend to make the Java applications open source to allow other researchers to use it for real-time patient data acquisition, alerts, and analysis.