LOS ANGELES UNIFIED SCHOOL DISTRICT
Office of the Chief Medical Director
District Nursing Services

MECHANICAL VENTILATOR DEFINITIONS

FOR THE SCHOOL NURSE

Volume cycled ventilators are the most commonly used ventilators. They are used for patients with compliance or resistance problems and are equipped with the capacity to set various parameters. The following are common ventilator controls that may be encountered.

Mode – the mechanism that ends expiration and signals the beginning of inspiration. The modes of ventilation are:

Control – enables the patient to receive ventilator initiated mandatory breaths at a set volume, flow, and breath rate regardless of his/her inspiratory effort.

Assist/Control – delivers a patient initiated mandatory breath when he/she exerts an amount of negative pressure on inspiratory effort.

Synchronized Intermittent Mandatory Ventilation (SIMV) – synchronizes the patient's spontaneous breaths with the ventilator delivered breaths.

Pressure Limit – enables patients with uncuffed tracheostomy tubes to "leak speak" or facilitate their cough efforts.

Normal or Tidal Volumes – the amount of air the ventilator has been set to deliver to the patient with each ventilator breath.

Rate – the number of positive pressure breaths the ventilator delivers per minute.

Sigh – allows for additional volumes of air to be delivered. Sighs simulate deep breaths of air and can be delivered in any mode of ventilation.

Flow – the rate of air delivered to the unit. It is displayed in liters per minutes LPM) or inspiration/expiration ratio (I:E ratio).

Pressure Limit - sets the maximum amount of pressure that can be delivered in all modes of ventilation.

Sensitivity – adjusts the amount of effort that the patient must exert in order to initiate an assist breath or for the ventilator to sense a spontaneous breath in SIMV. A negative setting to the left of zero is indicated for normal ventilation without PEEP (Positive End Expiratory Pressure).

High Pressure – sets the pressure point for high pressure.

Low Pressure – sets the pressure point for low pressure.