



Information Bulletin

Effective Careplanning for Someone on a Ventilator

Careplan development for a ventilator-dependent person should be the *Roadmap* for clinicians, families, and the individual. If careplanning is approached as a team-based function, designed to map the successful liberation of the Resident from the ventilator; it becomes an evergreen document created to adapt to the Resident's changing needs and ultimate success.

People find themselves requiring the need for a ventilator for a myriad of reasons; including respiratory failure, lung disease, heart disease, post-surgical support, and post traumatic injury. It is essential to describe the underlying cause or need for the ventilator in your careplan.

In this article we will demonstrate careplan development for a fictional person, John Doe. We will start with a brief case study, followed by suggested goals and interventions that an interdisciplinary treatment team could use in the treatment of Mr. Doe.

Case Study

Mr. John Doe is a 58 year old white male with a long-standing history of smoking; he noted starting smoking at approximately age 16 and averaging one and half packs per day for a smoke year history of 63 years.

He reported developing shortness of breath with regular daily activity approximately 5 years ago and was diagnosed with chronic obstructive pulmonary disease (COPD). At that time he underwent pulmonary function studies that revealed a significantly reduced forced expiratory volume (1 second). During this testing, bronchodilator administration was performed and he showed significant improvement in expiratory volume. He was subsequently started on a medication regime of inhaled bronchodilators.

He has presented to his doctor today and is complaining of increased shortness of breath, sputum production, fever, and general malaise. Chest x-ray reveals a right lower lobe pneumonia and pulse oximetry is noted at 85% on room air. Mr. Doe is directly admitted from the doctor's office to the hospital for aggressive treatment and monitoring.

Once admitted to the hospital, baseline arterial blood gases are drawn on room air and noted as follows: Ph 7.289, PaCO₂ 57.4, PaO₂ 58.2. Oxygen therapy is initiated at 2 lpm, and Mr. Doe is monitored. Pulse oximetry reveals saturations levels well above 90, but Mr. Doe is now lethargic and confused. Repeat arterial blood analysis reveal severe CO₂ retention and decrease in his Ph. Based on the overall clinical picture, Mr. Doe is intubated and mechanical ventilation is instituted to assist him through this crisis.

After mechanical ventilation is started, repeated arterial blood gases reveal normal values: Ph 7.410, PaCO₂ 47, PaO₂ 89. During his complicated hospital stay numerous attempts are made to wean him from the ventilator, without success. With each attempt, Mr. Doe's respiratory rate elevates into the high 30's and his heart rate increases into the 120's, with a noted drop in his pulse oximetry values. After numerous unsuccessful attempts to wean Mr. Doe, it was deemed necessary for him to proceed to a Long-Term Care (LTC) ventilator program.

On admission to the LTC program, Mr. Doe was noted to be very anxious, but easily distracted. He had a good sense of humor and voiced his desire to come off the ventilator. During his initial assessments he told the doctor he still had the desire to smoke, although he knew it was not possible. Mr. Doe was deconditioned, and had not walked since his hospital admission, and reports that his daily walking was limited due to his shortness of breath. He also reports neglecting daily grooming, for the same reason.

After gathering their initial data and assessments the LTC interdisciplinary treatment team gathered for a careplan development meeting. A marker board was utilized to collect the pertinent data for easy viewing by the entire team.

The team, with the input of Mr. Doe, and his family, identified the issues, barriers, and successes required for Mr. Doe's ultimate weaning from the ventilator. The team then developed the written plan of care based on these items. The careplan also reflects the progression and/or difficulties Mr. Doe may encounter during his progression in weaning.

The careplan will reflect the issues related to the Mr. Doe's condition which are what the team assesses have to be addressed in order to meet the goal of weaning.

Problems, Concerns, and Opportunities

The team assessed Mr. Doe's issues to be -

- COPD
- Smoker – quit upon hospitalization; still reports desire to smoke
- Decreased strength and endurance
- Anxiety
- Inability to speak, secondary to tracheostomy tube
- CO₂ retention that rises with oxygen administration
- Eating through a gastrostomy tube

- Below ideal body weight
- Currently on work disability; would like to return to work (autoparts store clerk)
- Supportive family
- Supportive community

These issues are the start of the treatment plan for Mr. Doe and are written into the careplan based on the team assessment. Note again that this is a fictional case study. Each Resident's issues and presenting problems may be different.

Goals:

- John Doe will have an incremental decrease in ventilator support, per own tolerance, with clear open airway. AEB pulse ox $\geq 90\%$

In this example the goal is developed through the team assessment, the defining of the issue. Because the introduction of a mechanical ventilator is based on medically complex reasons, goals will be different for each individual.

Individualized Interventions and Approaches

- Wean per protocol.
- Monitor for signs of intolerance; such as, increased HR, RR, sweating, and/or decrease pulse oximetry or LOC. Report changes to MD, RN and RT.
- Provide rescue/back up ventilator settings when s/s of intolerance develop
- Airway management and care per protocol.
- Monitor secretions for change in color, consistency, odor, and volume. Report changes to MD, RN and RT.
- Provide diversional activities when s/s of anxiety present – general conversation, reading, music, T.V., card playing.
- Provide repeated opportunities for engagement in motivational self-discovery programs (Art, Music, Writing, per general Resident protocol).
- Instruct family and visitors on successful ways to assist John Doe in relaxation and diversion methods.
- Provide anti-anxiety medications per MD order.
- Rehab services to improve strength and endurance.
- Provide smoking cessation program including nicotine replacement, if desired, and if ordered by MD.
- Dietary consult to promote weight gain.
- Speech Therapy for progression to by-mouth diet.
- Trial of Passy Muir Valve for audible speech.
- Per Resident's request, discuss weaning progress and ventilator settings only in general terms and incorporate adjustments to ventilator into scheduled ventilator

checks to reduce Resident fear and anxiety.

- Monitor for s/s of CO2 retention – increased confusion, sleepiness.
- Monitor for safe oxygen use within hi environment.
- Monitor Pulse oximetry per protocol.
- Give medications per MD order(s).

The interventions are designed to meet the goals, as defined by the issue. These suggested interventions are based on our fictional case study and individualized on that example. The success of any careplan rests on the interdisciplinary team assessment and individualizing the goals and interventions to meet the individual needs of the person.