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Case Study SNF Ventilator Care

Objective: Effectively treat high-risk ventilator dependent patients in-house, reducing hospital readmission rates while successfully weaning patients from ventilator support.

Background: Patient is a 61-year-old female with acute and chronic respiratory failure and history of tracheostomy, COVID. POA had difficulty placing resident, she was COVID positive and ventilator dependent. Patient admitted from outside hospital to SNF facility for respiratory needs. Patient had prior SNF stays at other providers, resulting in multiple hospital readmissions.

SNF Diagnosis:

- COVID-19 (U07.1)
- Tracheostomy status (Z93.0)
- Moderate intellectual disabilities (F71)
- Chronic respiratory failure with hypoxia (J96.11)
- Hypertension (I10)
- Atherosclerotic heart disease (I25.10)
- Hypothyroidism (E03.9)
- Type 2 diabetes mellitus (E11.9)
- Anoxic brain injury (G93.1)
- Anxiety disorder (F41.9)

Complications:

Nursing and Respiratory Assessment

Patient became tachycardic, hypotensive, and febrile. Clinical nurse supervisor and respiratory therapist performed a complete bedside assessment; a bedside EKG, stat x-ray, and blood work. The clinical team at Briar determined she was septic, and began IV antibiotics. The change in condition noted on day 9 of her stay. They continuously monitored via Masimo remote monitoring equipment.

Pertinent Medical Data	Admission Information	Day 9
Blood Pressure	125/68	78 / 44
Temp	98.1	101.2
SpO2	95	98
HR	67	140-160
Blood Sugar		700
BUN	15	63
NA	143	166
WBC	9.3	13.4



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Admission CXR: Interval worsening with increased patchy perihilar and basilar infiltrate/atelectasis. Follow-up chest x-ray recommended.

Follow up CXR: Worsened bibasilar opacities.

Admission Ventilator Setting: Shiley 4 cuffed. AC 430/16/8/50%

Therapy Assessment and Progression:

Speech therapist began evaluation and treatment after stabilization of sepsis. Speech therapist worked with the patient, due to aspiration on all food consistencies, for improved function of communication and swallow through with speaking valve. Patient was voiceless and only communicating via head nods and gestures.

TX/Plan:

Lasix 40 mg BID via peg- diuretic

Guaifenesin 100mg/5ml give 20 ml via peg QD- mucous/secretions

Levaquin 500 IV daily x 7 days- ATB for PNA

Potassium 20 MEQ daily

Acetylcysteine 20% give 4ml via nebulizer bid- Mucolytic

DuoNeb 1 vial via neb QID- bronchodilator

IV Dextrose 75 ml/hr

Methimazole 10 mg bid- thyroid

Humalog

Vancomycin IV – c-diff Antibiotic

IV metoprolol Metoprolol Tartrate Solution 5

MG/5ML

Use 5 mg intravenously every 4

hours as needed for HR

SUSTAINED >125– Heart rate control – beta blocker

Lorazepam .5 mg q6h prn

Propranolol 20 mg q6h - beta blocker

Vent Orders AC 430, Rate 16. Peep 8, 6 lpm O2

Subsequent to complications:

A bedside trach change was performed due to mucous plugging.

Patient was started on a speaking valve and PO trials were started.

The patient's respiratory status was monitored by blood gases and Masimo equipment with each change made by RT.

Stat labs and cultures were obtained as well as initiation of our sepsis protocol.

Patient was monitored closely over the coming days along with repeat labs and in-person and/or telehealth visits daily.



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Outcomes:

Twenty-eight days after admission, clinical team initiated ventilator weaning protocols. Patient is currently off the ventilator and doing well on 4 LPM of oxygen, tolerating a PMV and has not been back to the hospital since arriving to our facility. She went from voiceless to sustaining vowels for 6-7 seconds and participating in vocal and swallowing exercises for 30 minutes. Patient went from aphonic to averaging 60% to 70% efficacy, swallowing exercises from 10% to 65%. She is now able to speak in full sentences and even singing for staff.

Conclusion:

By assembling a team of highly competent clinicians – hospitalist, pulmonologist, respiratory therapists, acute care nurses, speech therapists - augmented with new technologies (VOSCN Ventilators, Masimo SafetyNet, Telehealth), we can wean patients from ventilators within the four walls of a skilled nursing facility. Systems for early detection and immediate intervention, particularly sepsis protocols, prove we can treat patients in place without transferring to a higher level of care.

With the increasing complexity, challenges, and pace of change associated with delivering superior health care, we advanced the medical model to meet the market's demands.