

Implementation of a Standardized Approach to Breathlessness Management in Patients with Cancer: A Quality Improvement Project

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Introduction & Background

- Breathlessness is highly prevalent, affecting 20% – 70% of patients with cancer and up to 74% of patients with lung cancer
- A significant number of cancer patients continue to experience breathlessness that is inconsistently assessed and lacks complete palliation
- There is strong evidence that patients experiencing breathlessness at hospital admission or during hospitalization are at higher risk for poor clinical outcomes
- Local problem:
 - High-risk cancer patients are inconsistently assessed for breathlessness
 - There is lack of awareness and underutilization of an existing NCI dyspnea scale
 - No standardized strategy for breathlessness assessment and management
- Literature evidence suggests that education and an algorithm-based approach can improve breathlessness assessment and management in high-risk cancer patients

Purpose & Aims

Purpose: To standardize the assessment of breathlessness in high-risk cancer patients and increase nursing staff confidence in providing breathlessness interventions.

- Aims:**
- Develop and evaluate a nurse-driven breathlessness algorithm
 - Improve nurses' knowledge, confidence, and attitudes related to breathlessness assessment and management
 - Increase nurses' utilization of the National Cancer Institute (NCI) dyspnea scale

Methods

Design: Descriptive pre-posttest and retrospective chart reviews

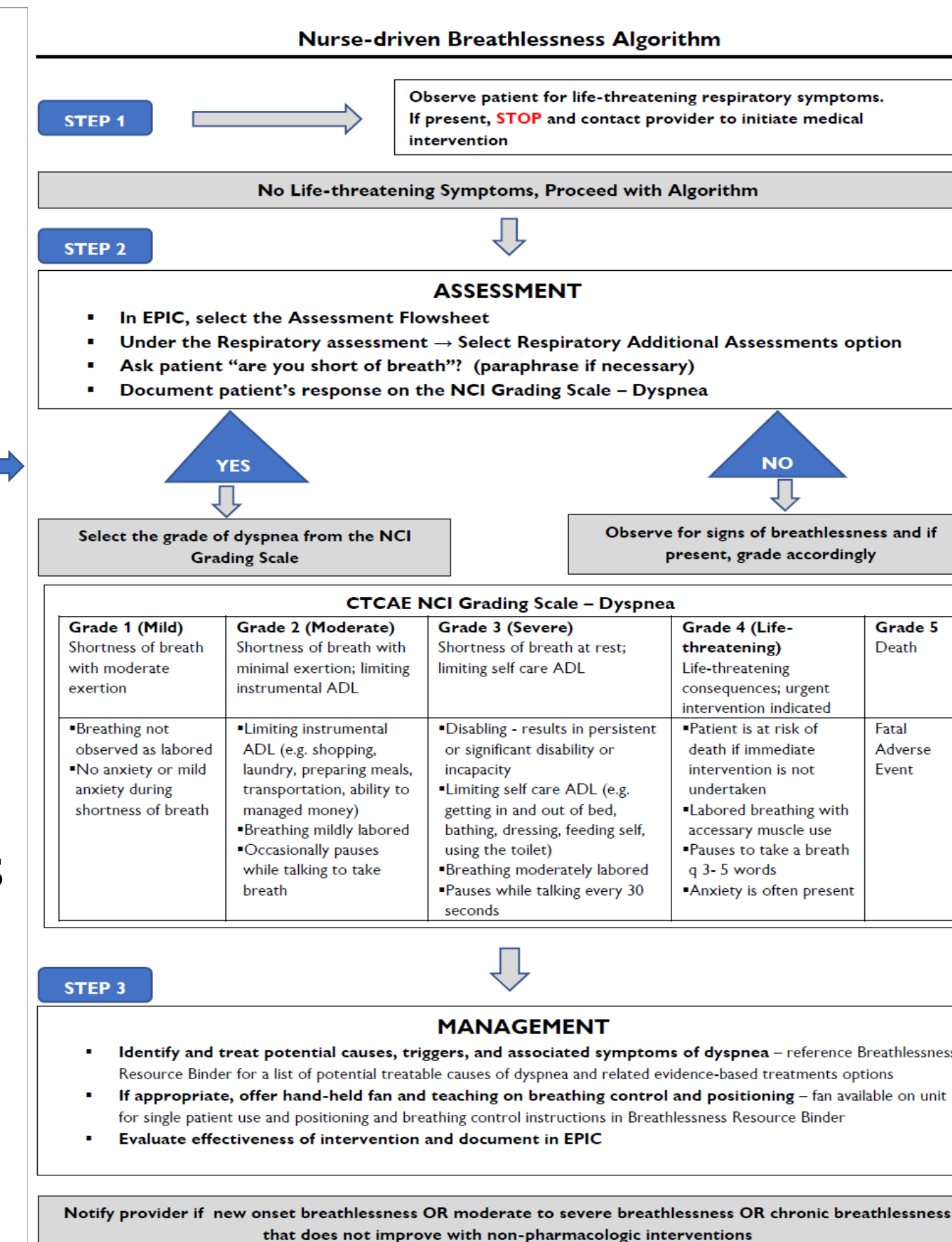
Sample: A convenience sample of unit nurses and all cancer patients with one or more high-risk conditions

Intervention:

- Developed and piloted a novel breathlessness algorithm
- 10-minute prerecorded zoom educational presentation administered via Quartics
- An existing NCI dyspnea scale employed to assess eligible patients for breathlessness

Measurement: A novel 12-item pre and posttest survey was developed to measure nurses' knowledge, confidence, and attitude, plus their perception of the algorithm

Analysis: Due to small sample size, descriptive statistics and percentages were used



Results

Table 1. Nurse Demographics

Characteristics	Pre-intervention (N = 17)	Post-intervention (N = 5)
Age, n (%)		
18-24	2 (11.8)	0 (0.0)
25-45	11 (64.7)	3 (60.0)
Above 45	4 (23.5)	2 (40.0)
Nursing Experience, n (%)		
0-1 year	3 (17.6)	1 (20.0)
2-5 years	3 (17.6)	1 (20.0)
6-10 years	2 (11.8)	0 (0.0)
Greater than 10 years	9 (52.9)	3 (60.0)
Highest Degree, n (%)		
Associate	2 (11.8)	1 (20.0)
Bachelor	15 (88.2)	4 (80.0)

Figure 1. Pre-post Nurse Knowledge, Confidence and Attitude Scores



Note:

- Five knowledge items with scores ranging from 0-5
- Three confidence and two attitude items with scores ranging from 1-15
- Higher scores indicate higher knowledge, confidence, or attitude

Findings:

- Seventeen nurses (46%) completed the educational intervention and pretest survey
- Five nurses (13%) from the pre-intervention group completed the posttest survey (see Table 1)

Impact of the breathlessness algorithm

- All five nurses who completed the post-intervention survey reported the algorithm was beneficial (median 5.0 and IQR 0.50) and four out of five reported mastery in use of the algorithm (median 4.0 and IQR 1.0)

Knowledge, confidence, and attitude

- Overall, nurses' confidence related to breathlessness assessment and management improved from pre-intervention (median 11.0 (IQR: 1.50) to post-intervention (median 13.0 (IQR: 2.0) (see Figure 1)
- There was no change in nurses' knowledge and attitude post-intervention

NCI dyspnea scale utilization

- 78 patients admitted to the unit, 32% (n = 25) had one or more high-risk conditions and were eligible for assessment
- 20% of eligible patients received breathlessness assessment using the NCI dyspnea scale and 80% of these patients reported some level of breathlessness (see Table 2)

Table 2. NCI Dyspnea Scale Utilization Rate

Total Unit Census (N = 78)	n (%)
Patients with indicator conditions	25 (32.1%)
NCI scale completed	5 (20.0%)
Breathlessness present	4 (80.0%)

Conclusions

- Implementation of a breathlessness algorithm and nurse education was effective at this site in improving breathlessness assessments and nurses' confidence in providing therapeutic and palliative interventions to cancer patients
- Though COVID-19 restrictions presented significant challenges, there is an opportunity to expand on interventions developed during this QI project to optimize care
- Further use of such assessments may be beneficial in other oncology units where patients frequently experience breathlessness