

Appendix Figure 1: Aggressive Respiratory Intervention (ARI) Protocol Flowchart

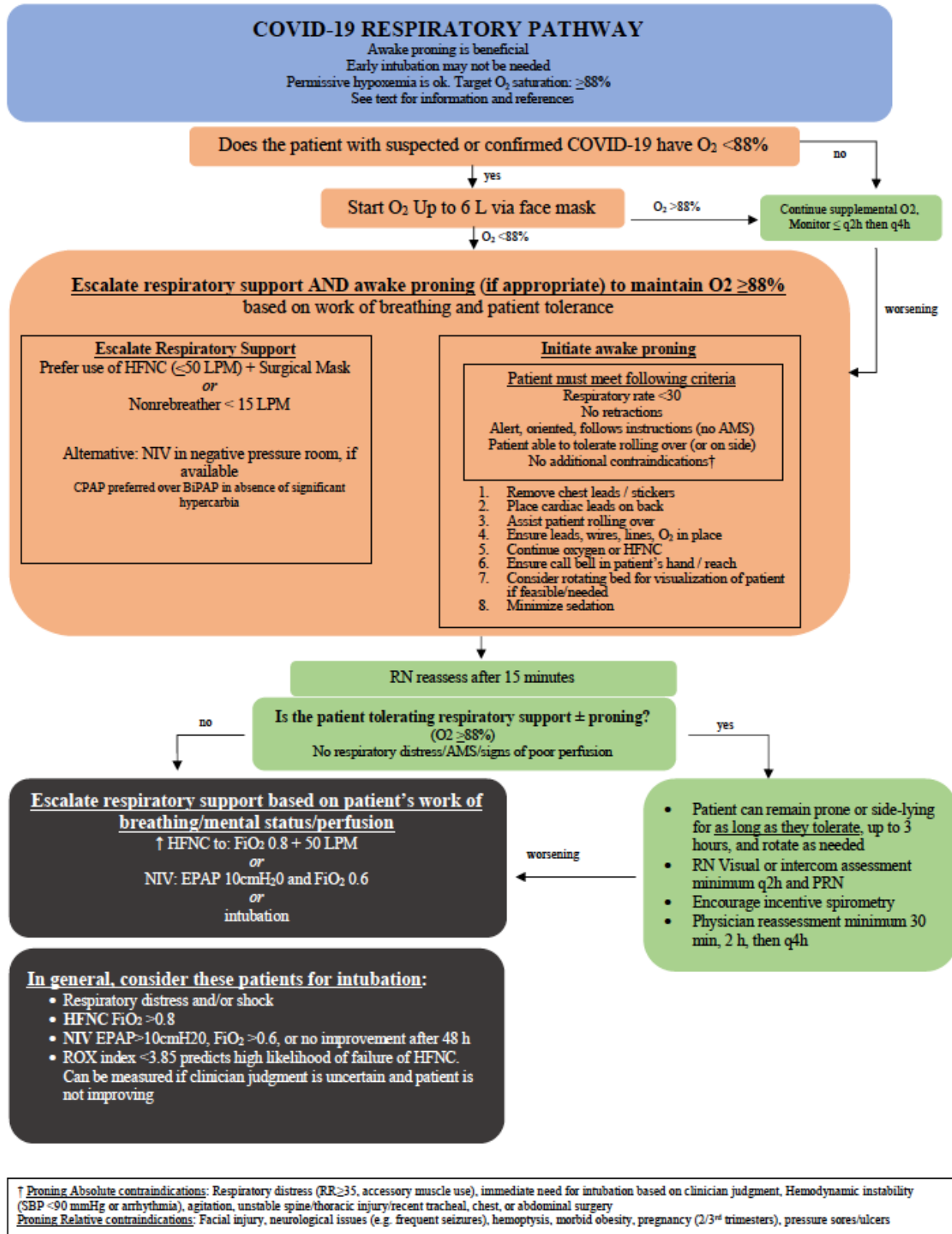


Chart Review

Record ID _____

Identifying Information

Double check the information below

COVID status from chart review

- Positive test resulted
 Negative test resulted
 No test resulted

If no test in system, does a clinician's note clearly document a positive test elsewhere (such as at a nursing home or outside facility)?

- Yes
 No
 Unsure

If patient does not have a positive test or a mention of a positive test outside of the hospital, STOP HERE.

Site

- BMC
 BNH
 BFMC
 BWH
 BMLH

Was the patient a direct transfer from another facility?
(not SNF, but other hospital)

- Yes No

Account Number _____

Inpatient Admit Date/Time _____

(Double check that this is the admission for COVID and not a different admission)

Name _____

CMRN _____

Date of Birth _____

Sex

- Female
 Male

Race
(This can be found in Patient Information)

White
 Black
 Asian
 Native American
 Pacific Islander

Ethnicity
(This can be found in Patient Information)

Hispanic
 non-Hispanic
 Russian

Primary Language
(This can be found in Patient Information)

English
 Spanish
 Other

Other Language

What type of insurance does this patient have?

MediCARE
 MediCAID (mass health)
 private (blue cross, aetna, cigna, health new england)
 VA
 self-pay
 other

If other, list name

Reason for Visit

ED Information

Date of data collection or update
(Date you are entering this data - click today)

Date/Time of ED arrival
(Start of triage)

Triage Vitals

BMI

Systolic BP

Diastolic BP

Heart Rate

Temp

Resp Rate _____

O2 Sat _____

On any supplemental O2 Yes
 No

Type of supplemental O2 NC < 3L
 NC 3-6L
 NC >6L
 NC - flow unknown
 NRB
 HFNC
 NIV
 Intubated

Discharge status from ED (As noted in ED clinician note) Transfer to In-patient
 Home
 SNF
 Expired

Admission Information

Initial admission unit (no need to check this) _____

Initial admission level of care (Can be found in Orders, check date of order) Floor (acute)
 Intercare
 ICU

Was level of care escalated to intercare during the admission Yes No

Date and time care was escalated to intercare _____

**During Entire Hospital visit, did the patient use any of the following: (If intubated, only "YES" if used PRIOR to intubation, not post-intubation)
(This can be found in All Results: Respiratory/Pulmonary Data; except proning will be in clinician notes or orders)**

Oxygen by nasal cannula Yes No

Date/time oxygen by nasal cannula started _____

High flow nasal cannula Yes No

Date/time high flow nasal cannula started _____

AWAKE Proning (not intubated) attempted Yes No

Awake Proning Tolerated? (See physician note for whether they were able to tolerate proning)	<input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Unsure
Date/time proning started	_____
NIV (CPAP or BIPAP)	<input type="radio"/> Yes <input type="radio"/> No
Date/time NIV started	_____
Non-rebreather started	<input type="radio"/> Yes <input type="radio"/> No
Date/time Non-rebreather started	_____
At any time, did the patient get intubated	<input type="radio"/> Yes <input type="radio"/> No
Date/time intubated	_____
At any time prior to ICU care, did patient have an RRT	<input type="radio"/> Yes <input type="radio"/> No
Date/time RRT called	_____
At any time prior to ICU care, did patient have an UNEXPECTED cardiac arrest (Note: Select 'No' if patient was made DNR/DNI before cardiac arrest or was in ICU, because then cardiac arrest was expected. We are looking for decompensation on floor or intercare leading to cardiac arrest)	<input type="radio"/> Yes <input type="radio"/> No
Date/time cardiac arrest	_____
Was cardiac arrest within 2 hours before or after an intubation?	<input type="radio"/> Yes <input type="radio"/> No
At any time, did patient have an ICU consult	<input type="radio"/> Yes <input type="radio"/> No
Date/time ICU consult	_____
At any time, did patient get moved to the ICU	<input type="radio"/> Yes <input type="radio"/> No
Date/time move to ICU	_____

Goals of Care

At any time during their stay, did the patient have a GOALS OF CARE conversation Yes No Unsure

Who did they have a conversation with, check all that apply with ED doc
 with hospitalists
 with ICU
 with palliative care

Was the patient DNR/DNI prior to the ED visit Yes No

Was the patient made DNR/DNI during this stay Yes No

Date/time patient made DNR/DNI during this stay _____

How was DNR/DNI decided patient/family with care team
 physician-directed (two physicians)
 other

Other method to decide DNR/DNI _____

Was the patient CMO prior to the ED visit Yes No

Was the patient made CMO during this stay Yes No

Date/time patient made CMO during this stay _____

How was CMO decided patient/family with care team
 other

Other method to decide CMO _____

Patient's status 5 days post admission (morning of 5th day)
 (Leave blank if 5 days has not passed since admission) admitted floor
 admitted intercare
 intubated or in ICU
 discharged
 dead

Patient's status 7 days post admission (morning of 7th day)
 (Leave blank if 7 days has not passed since admission) admitted floor
 admitted intercare
 intubated or in ICU
 discharged
 dead

Patient's status 14 days post admission (morning of 14th day)
 (Leave blank if 14 days have not passed since admission) admitted floor
 admitted intercare
 intubated or in ICU
 discharged
 dead

Patients' status reviewed 30 days post admission
(Leave blank if 30 days have not passed since admission)

- admitted floor
- admitted intercare
- intubated or in ICU
- discharged
- dead

Discharge (includes death) date/time

Discharge Disposition

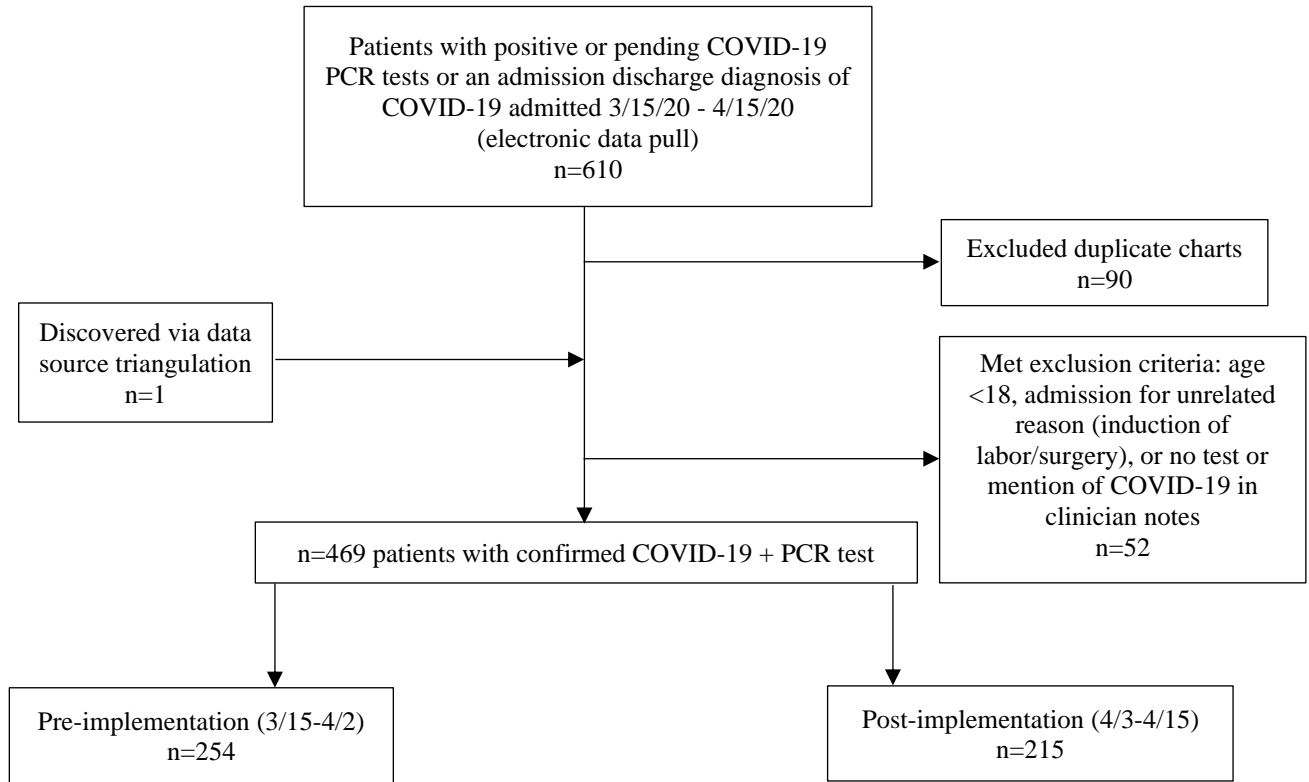
- Still IP
- Home
- Expired
- SNF
- Other facility
- IP Rehab
- LTC
- Hospice
- Other

Other discharge disposition

Comments

Comments

Appendix 3. Patient Flow Diagram



Appendix 4. Revised Standards for Quality Improvement Reporting Excellence (SQUIRE 2.0)
September 15, 2015

Squire standards and where to find elements (or explanation for missing elements)

Text Section and Item Name	Section or Item Description	
Title and Abstract		
1. Title	Indicate that the manuscript concerns an initiative to improve healthcare (broadly defined to include the quality, safety, effectiveness, patient- centeredness, timeliness, cost, efficiency, and equity of healthcare)	See Title
2. Abstract	<ol style="list-style-type: none"> 1. Provide adequate information to aid in searching and indexing 2. Summarize all key information from various sections of the text using the abstract format of the intended publication or a structured summary such as: background, local problem, methods, interventions, results, conclusions 	See Abstract
Introduction	Why did you start?	Page 4
3. Problem Description	Nature and significance of the local problem	Page 4
4. Available knowledge	Summary of what is currently known about the problem, including relevant previous studies	Page 4
5. Rationale	Informal or formal frameworks, models, concepts, and/or theories used to explain the problem, any reasons or assumptions that were used to develop the intervention(s), and reasons why the intervention(s) was expected to work	Page 4
6. Specific aims	Purpose of the project and of this report	Page 4
		Page 4 and 5

Methods	What did you do?	
7. Context	Contextual elements considered important at the outset of introducing the intervention(s)	Page 4 and 5
8. Intervention(s)	a. Description of the intervention(s) in sufficient detail that others could reproduce it b. Specifics of the team involved in the work	Page 5 and Appendix 1
9. Study of the Intervention(s)	a. Approach chosen for assessing the impact of the intervention(s) b. Approach used to establish whether the observed outcomes were due to the intervention(s)	Page 5
10. Measures	1.Measures chosen for studying processes and outcomes of the intervention(s), including rationale for choosing them, their operational definitions, and their validity and reliability 2.Description of the approach to the ongoing assessment of contextual elements that contributed to the success, failure, efficiency, and cost 3.Methods employed for assessing completeness and accuracy of data	Page 5 and 6
11. Analysis	a. Qualitative and quantitative methods used to draw inferences from the data b. Methods for understanding variation within the data, including the effects of time as a variable	Page 5 and 6
12. Ethical Considerations	Ethical aspects of implementing and studying the intervention(s) and how they were addressed, including, but not limited to, formal ethics review and potential conflict(s) of interest	Page 4: The IRB reviewed the plan and deemed it not human subjects research. A full description of the many discussions around medical ethics that occurred during early COVID is not possible in the

		scope of this paper. The ethics of this project and related projects was discussed at length by many stakeholders
Results	What did you find?	
13. Results	<p>Initial steps of the intervention(s) and their evolution over time (e.g., time-line diagram, flow chart, or table), including modifications made to the intervention during the project</p> <p>Details of the process measures and outcome</p> <p>Contextual elements that interacted with the intervention(s)</p> <p>Observed associations between outcomes, interventions, and relevant contextual elements</p> <p>Details about missing data</p> <p>Unintended consequences such as unexpected benefits, problems, failures, or costs associated with the intervention(s).</p>	<p>Page 6 and tables</p> <p>Due to the length restrictions, we could not report these results in as much details as we would like. Our mortality analysis is our attempt to evaluate unintended consequences.</p>
Discussion	What does it mean?	
14. Summary	a. Key findings, including relevance to the rationale and specific aims b. Particular strengths of the project	Page 7 and 8
15. Interpretation	<p>Nature of the association between the intervention(s) and the outcomes</p> <p>Comparison of results with findings from other publications</p> <p>Impact of the project on people and systems</p> <p>Reasons for any differences between observed and anticipated outcomes, including the influence of context</p> <p>Costs and strategic trade-offs, including opportunity costs</p>	Page 7 and 8

16. Limitations	<p>a. Limits to the generalizability of the work</p> <p>b. Factors that might have limited internal validity such as confounding, bias, or imprecision in the design, methods, measurement, or analysis</p> <p>c. Efforts made to minimize and adjust for limitations</p>	Page 8
17. Conclusions	<ol style="list-style-type: none"> 1. Usefulness of the work 2. Sustainability 3. Potential for spread to other contexts 4. Implications for practice and for further study in the field 5. Suggested next steps 	Page 8 – due to space, we were not able to comment on all of these points
Other information		
18. Funding	Sources of funding that supported this work. Role, if any, of the funding organization in the design, implementation, interpretation, and reporting	No funding for this study