



Use the **Admit Patient** form to register a new patient to the **Patient Roster**.

ADMIT NEW PATIENT TO ROSTER

First name: Gender: ☐ Male ☐ Female

Last name: Date Of Birth:

Patient MRN:

Initial Bed:

1

Use the **Patient Roster** to provide an overview of EA monitored patients and their journey to ventilator liberation. The surrounding dashboards - **Admission Info & Reason**, **Comorbidity Info**, **Intubation History** and **SBT Snapshot**, will auto populate with the selected patient's clinical information as documented.

PATIENT ROSTER SELECTION

Search (By Patient MRN or Name): ☒ Show discharged patients

MRN	NAME	BED	SBT COUNT	LAST ADMISSION	PAT. STATUS	SBT STATUS
65432	John Wilkinson	ICU-10	2 / 2	30/06/20 -	Intubated	SBT > Readiness
47815	Mary Berry	ICU-11	0 / 0	03/07/20 -	Intubated	SBT > Admission
32121	Linda Shields	ICU-09	0 / 0	03/07/20 -	Admitted	
87461	Paul Nichols	ICU-01	1 / 1	29/06/20 -	Intubated	SBT > Outcome
14781	James Barker	ICU-03	1 / 1	01/07/20 -	Awaiting MD Review	SBT > Report Generated
65141	Carol Stuart		0 / 0	03/07/20 - 03/07/20	Discharged	
54621	Micahel Rutter	ICU-07	0 / 1	18/06/20 -	Extubated (0 day(s) off vent)	

2

SBT SNAPSHOT

DATE	START - END	OUTCOME	RSBI	Wave	RT	REPORT
13/07/2020	09:33 -		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
12/07/2020	09:15 - 09:29	Pass	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="button" value="Report"/>
11/07/2020	08:58 - 09:02	Pass	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="button" value="Report"/>
10/07/2020	08:47 - 08:55	Equivocal	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="button" value="Report"/>
09/07/2020	22:10 - 22:17	Fail	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="button" value="Report"/>

4

Use the buttons available to **Perform SBT** or to **Continue SBT** if one has already been started for a selected patient. Document the **Extubation** information as required and only **Discharge** the patient from the **Patient Roster** once the patient has physically left the Unit. **Readmitting** a patient to the roster will not display historic intubation and SBT information until the patient is once again discharged. Only the patient's current intubation and associated SBT information is displayed. Use the **Edit** button to update the patient's demographic information as required. Previously generated reports will not reflect the changes made.

3

5

Use the **SBT Snapshot** to see an overview of SBT's performed on a selected patient, along with the outcome and Risk Scores for **RSBI**, **WAVE** and **RT Impression**.

Review and **Print a Generated Report** by selecting the report icon for the SBT of interest.

Admission

SBT

Extubation
Readiness

SBT
Outcome

☐ Grey = Section Not Started
☐ Orange = Section Started / In Progress
☐ Green = Section Completed

Use the **Progress Bar** to navigate each of the main sections of Extubation Advisor. The **Admission**, **SBT** and **Extubation Readiness** sections need to be completed before **SBT Outcome** section becomes available.



ADMISSION DATE AND REASON

Date of Hospital Admission: 7/16/2020 Today

Date of ICU Admission: 7/16/2020 Today

Reason for ICU Admission: ☒ Shock

☐ Septic ☐ Cardiogenic ☒ Other

Shock Comments

☒ Respiratory Failure

☐ Hypoxemic ☐ Hypercarbic ☒ Other

Resp. Comments

☒ Post Surgery

☒ Thoracic ☐ Abdominal ☐ Cardiac

☐ Vascular ☐ Trauma ☐ Ortho

☒ Other

Other reason for ICU admission

6

Use the **Admission Form** to document **Date of Hospital** and **ICU Admission** and **Reason for Admission**. Use the comments boxes to document other reasons as required.

COMORBIDITIES AT TIME OF ADMISSION

Cardiac Illness: ☐ Yes
known CAD, cardiomyopathy, valvular disease,
diastolic or systolic dysfunction ☐ No
☒ Unknown

Severe Cardiac Illness: ☐ Yes
Presence of ejection fraction < 45%, CCS Class III
Angina (moderate limitation, with symptoms with
everyday living activities), AHA Class III CHF
(marked limitation of physical activity) ☐ No
☒ Unknown

Respiratory illness: ☐ Yes
known COPD, emphysema, pulmonary fibrosis,
asthma ☐ No
☒ Unknown

Severe Respiratory illness: ☐ Yes
Presence of severe asthma/COPD with FEV1/FVC <
70% or FEV1 < 50%, or home oxygen use ☐ No
☒ Unknown

Diabetes: ☐ Insulin Dependent
☐ Oral Hypoglycemics
☐ Diet Controlled
☒ Not Diabetic

Major Illness: exclude GERD, HTN, HChol


7

Use the **Comorbidities Form** to document known patient illnesses. Use the comments boxes to document other reasons as required.

Connected to monitor

Extubation Advisor is now connected to your monitor. Please verify that readings below are displayed on the monitor screen and press Next.

Readings for connection indication only and are not for clinical use

 Connected
Philips IntelliVue Series

HR 115	CO2 26
RR 43	SPO2 94

8


9

Document the Ventilator Settings **Prior to SBT** for **PS (cmH₂O)**, **PEEP (cmH₂O)** and the patients **RASS**.

Ensure the **configured Patient Monitor** is **Connected** using the supplied cables. Confirm EA is receiving vital sign data and CO2.

CURRENT SBT (INTUBATION TIME := 7/31/2020 8:00 AM)

Please enter the ventilator settings prior the SBT

 Connecting
Philips IntelliVue Series

PS (cmH₂O): + - Prior to SBT (0 - 65)

PEEP (cmH₂O): + - Prior to SBT (0 - 40)

RASS Score: <Please Select>


Proceed to SBT

Patient not on Pressure Support Ventilation ☐

8

You are about to commence an SBT for patient Paul Nichols [87461]

Please lower the PS/PEEP settings on the ventilator and record the new values below. Then press OK to begin the recording.

 Connected
Philips IntelliVue Series

Date/Time of SBT: 8/3/2020 3:45 PM

PS (cmH₂O): 44 + - Prior to SBT (0 - 40)

PEEP (cmH₂O): 33 + - Prior to SBT (0 - 40)

PS (cmH₂O): 15 + - During SBT (0 - 44)

PEEP (cmH₂O): 12 + - During SBT (0 - 33)

FiO₂(%): 55 + - During SBT (21 - 100)

START RECORDING CANCEL

10

Lower the **PS / PEEP** settings on the ventilator and document the new values and **FiO₂** on the **During the SBT** form. You can then **Start the SBT Recording**.



Recording Analysing Completed

REC

Need more recording

00:13:09

Time of SBT: 03/07/2020 11:15
Will be updated when you start SBT

PS (cmH₂O): 55 +-
Prior to SBT (2 - 65)

PEEP (cmH₂O): 30 +-
Prior to SBT (0 - 40)

PS (cmH₂O): 33 +-
During SBT (2 - 55)

PEEP (cmH₂O): 22 +-
During SBT (0 - 30)

FiO₂(%): 55 +-
During SBT (21 - 100)

RASS Score: -1 Drowsy

End SBT Cancel Recording

A minimum of 15 minutes recording is required to end the SBT

11

A **minimum recording time of 15 Minutes** is required to calculate the WAVE Score. If for any reason you need to change any of the **Admission Information, Ventilator Settings – Prior to or During** then **Cancel the Recording** and update the information as required and restart the recording.

Recording Analysing Completed

REC

Recording

01:10:18

Time of SBT: 05/07/2020 15:17
Will be updated when you start SBT

PS (cmH₂O): 41 +-
Prior to SBT (2 - 65)

PEEP (cmH₂O): 32 +-
Prior to SBT (0 - 40)

PS (cmH₂O): 22 +-
During SBT (0 - 33)

PEEP (cmH₂O): 15 +-
During SBT (0 - 21)

FiO₂(%): 33 +-
During SBT (21 - 100)

RASS Score: +1 Restless

End SBT Cancel Recording

12

After the minimum recording threshold has passed, you can **End SBT** as per your defined processes / workflow. The **Analysis Results** will be displayed.

Admission SBT Extubation Readiness SBT Outcome

Cough Strength:
(Subjective assessment)

☐ Strong
☐ Average
☐ Weak
☐ Unknown

SpO₂ > 90%:
☐ Yes
☐ No
☐ Unknown

STRENGTH

Lift head off pillow for > 5 sec:
☐ Yes
☐ No
☐ Unknown

Firm Hand Grip:
(Subjective assessment)
☐ Yes
☐ No
☐ Unknown

RENAL

Negative Fluid Balance Last 24h:
☐ Yes
☐ No
☐ Unknown

NEURO

Gag:
☐ Present
☐ Not Present
☐ Unknown

Obeys Commands:
☐ Yes
☐ No
☐ Unknown

13

Use the **Extubation Readiness Checklist** to document the various checks as carried out during the SBT Recording.

Once the analysis has been completed for the SBT Recording, the **WAVE Results** and **Vitals Recorded during the SBT** will be displayed alongside the Vent settings documented.

Any **mandatory vital signs** not automatically captured during the recording, will need to be manually inputted.

Recording Analysing Completed

REC

WAVE Results

22/01/2021 09:34

Time of SBT: 22/01/2021 09:34

PS (cmH₂O): 22 +-
Prior to SBT (2 - 65)

PEEP (cmH₂O): 14 +-
Prior to SBT (0 - 40)

PS (cmH₂O): 12 +-
During SBT (0 - 22)

PEEP (cmH₂O): 6 +-
During SBT (0 - 14)

FiO₂(%): 25 +-
During SBT (21 - 100)

RASS Score: +1 Restless

Probability of extubation failure: **Above Average**

Predicted risk of extubation failure: 17% (1.48 x normal risk)

Vitals Recorded during SBT

Avg. HR*: 24.82

Avg. SpO₂*:

Avg. MAP*: 70.40

Avg. BP*: 120.73 / 47.82

Avg. RR (CO₂): 27.1

* Mandatory Value

14

CURRENT SBT [INTUBATION TIME :- 02/02/2021 12:00, SBT TIME :- 07/02/2021 10:31]

End time of SBT: 07/02/2021 10:34

SBT Completed as planned?: ☒ Yes ☐ No

Average RR (Breaths / min): (2 - 70) + -

Average TV (mL): (200 - 3000)

Average RSBI: --

SBT Outcome: ☐ Pass ☐ Equivocal ☐ Fail
(Pass means absence of tachypnea, hypoxemia, hypercapnea, instability, ischemia, neuro deterioration, or bradypnea during SBT)

If patient were to be extubated, please provide your best professional assessment regarding the risk of extubation failure: ☐ High (i.e. risk > 15%) ☐ Average (i.e. risk is 5-15%) ☐ Low (i.e. risk is < 5%)
(Subjective assessment)

Comments to MD: (max length 150) Please include any additional information regarding the patient or the SBT, relevant to decision making. ☐ No Comments

15

SBT Outcome Information:

Once the **Admission**, **SBT** and **Extubation Readiness** sections have been completed, you can then document the **SBT Outcome** information. Use the **SBT Outcome form** to manually document the **Average RR** and **Average TV (mL)** for EA to calculate the **Average RSBI**. **Save** and **Generate the report**.

EA Generated Report:

Preview the report and then if all data is correctly documented, **Save or Email** the report as required.

The generated report is available in the application via the **SBT Snapshot**.

16

Report Preview

Therapeutic Monitoring Systems
OBS Medical

Extubation Advisor™
Therapeutic Monitoring Systems Licensed Technology
SBT Synoptic Report - 2021-02-07

Name: John Wilkinson
DOB: 1944-01-27 (77)
Days in ICU: 6
Sex: Male

Bed Number: ICU-10
MRN: 65432
Days on Vent: 5

Use of this Clinical Decision Support Tool
This Extubation Advisor report is derived from assessment during a spontaneous breathing trial (SBT) to aid the clinical assessment of extubation readiness of ventilated patients, recognizing that extubation decision making is complex and should incorporate all relevant information (including but not limited to patient history, illness and values), some of which may not be included in this report.

Assessment of Extubation Failure Risk:

RSBI: **Low Risk**

WAVE Score: **Low Risk**

RT Impression: **Low Risk**

Extubation Failure Risk
Reduction given elevated blood pressure and history of impaired left ventricular function + ventilation post extubation given the history of Severe Cardiac Illness

Cardiac Illness, Diabetes - Diet Controlled
Post Surgery - Vascular

Vent Settings prior to SBT:
PS: 33 cmH₂O PEEP: 17 cmH₂O

SBT Information:
Start: 2021-02-07 10:31
End: 2021-02-07 10:34
Duration: 2 minutes
Completed as planned? Yes
RASS Score: +2 Agitated

Vitals during SBT from Monitor:
Average BP: 150 / 88 MAP: 108.7 mmHg
Average HR: 19.7 beats/min
Average RR (CO2): 22.1 breaths/min
Average O₂ Sat: 94.6 %

Rapid Shallow Breathing Index (RSBI):
Average RR: 33 breaths/min
Average TV: 1500 mL
Average RSBI: 22 (< 10 = low risk; 10-11 = average risk; > 11 = high risk)

Vent Settings during SBT:
PS: 22 cmH₂O PEEP: 12 cmH₂O FIO₂: 25 %

Extubation Readiness Checklist:
☒ Cuff Leak Present
☒ Strong Cough
☒ Spontaneous Cough
☒ SpO₂ > 90%
☒ Negative Fluid Balance Last 24H
Concerns:
☒ No Gag Present
☒ Does Not Obey Commands
Not Reviewed:
Lifts Head
Hand Grip

Respiratory Therapist's Subjective Assessment:
SBT Outcome: Pass
RT Perception of Risk of Extubation Failure: **Low (i.e. risk is < 5%)**

Weaning and Variability Evaluation (WAVE) Decision Support:
(WAVE Score is based on respiratory rate variability during the SBT. Higher WAVE scores reflect the patient's capacity to tolerate an increased respiratory workload.)
Probability of Extubation Failure: **Low Risk** Predicted risk of extubation failure: 7 %

Please check the preview of the report above. The report will be emailed to nicolle@obsmedical.com on confirmation.

Save & Email report Cancel




Cautions

When connected to a Patient Monitor, the device running EA cannot be connected to mains power.

If you attempt to connect mains power during an SBT recording, all recording data to that point will be lost.

When not in use, the device running EA should be kept on charge to ensure it can be used on battery when connected to a Patient Monitor.

While WAVE was derived for patients undergoing their first extubation, the physiologic basis for the prediction would be unchanged when assessing readiness for subsequent extubations (if the first extubation failed), and thus can be helpful when assessing a patient's readiness for a second extubation. However, the reasons for failing the first extubation need to be addressed in planning a second extubation vs. tracheostomy.

 100%	Device running EA is fully charged, ready to be disconnected from mains power and used as required.
 Battery Low	Consider sourcing a different device running EA that has a fully charged battery.
 Battery Critical	Stop using device running EA and connect it to mains power to fully recharge battery.

Warnings

- EA must not be used outside of its intended use.
- EA is not for use for patients under the age of 18 years.
- EA does not replace the clinical judgement of a Clinician.