1. Introduction

In order to achieve the best possible outcome of mechanical ventilation, all medical staff who involve in this therapy must have adequate user knowledge.

Hamilton Medical College is Hamilton Medical’s e-learning service to provide the essential user knowledge. It is free of charge, and open to everyone who possesses a valid user account. The learning is possible with a computer that is connected to Internet anytime and anywhere. The learning is also possible with a tablet or even a Smart phone. This document explains how to do the e-learning.

2. Sign-up

Sign-up is a process to create user account and define username and password. It comprises two steps: creating an account and activating the account.

2.1 Creating a new account

1. Go to: college.hamilton-medical.com, open the login page. (Fig 1)
2. Click the “I want to create a MyHamilton account” to open the registration page. (Fig. 1)
3. Fill in the fields, at least those labeled with a star. Define a username and password. We suggest you use email address as your username though you can use any words or phrase.
4. Click “Submit” to finalize the registration. (Fig. 2)
5. If this page appears your account is created successfully. (Fig. 3)
E-learning login and registration

To access the e-learning modules log in with your existing MyHamilton account or create a new one. MyHamilton gives you all the e-learning modules, as well as a wide range of user documents and tools.

* Required

Username or email
Password

I want to create a MyHamilton account

Fig. 1: The login page

Register

* required

Title

First name
Last name

Position
Hospital/Organization
Department

City
Country

Email
Email confirmation

Password
Password confirmation

AARC member number
AARC Registration Country

Are you a customer?

Which ventilator/accessory do you use? You can choose multiple ventilators and accessories.

[ ] Hamilton i-1
[ ] Hamilton i-2
[ ] Hamilton i-3

[ ] Hamilton i-1 b
c
[ ] Hamilton i-2 b
c

[ ] Hamilton i-3 b
c
[ ] InterMed
[ ] Duomed
[ ] Hamilton i-1
[ ] Hamilton i-2

[ ] Hamilton i-3

Please confirm that you have read and accept our privacy and cookie policy. (See details below in the footer)

I agree to the privacy and cookie policy

Register

Fig. 2: The registration form
CAUTION: Your email address must be correct; otherwise, we cannot contact you when necessary. Do not create your account repeatedly with the same email address.

2.2 Activating your account

Within a minute or two, an activation email will be delivered to your mailbox. (Fig. 4)

6. Click “this link” in yellow to open the Activate User webpage. (Fig. 5)
7. Click the Activate button.
8. If the confirmation page appears on your screen, (Fig. 6) your username and password are now ready for use.

Note: A created account is valid for activation for 48 hours only.
If the expected activation email does not arrive, most common causes are: a) the email address is incorrect or misspelled, b) the mail arrives at Junk/Spam mailbox, or c) it is blocked by the firewall of your hospital or your computer.

- Check your Junk mailbox
- Consult your hospital’s IT department
- Send a message to us by using the “Contact” function on the login page. We will help you out.

3. Login

Login is a simple process to verify users. Your username and password are the key to open the door of the e-learning.

1. Open the e-learning landing page: college.hamilton-medical.com (Fig. 7)
2. Enter your username and password
3. Click the Login button. If the Module Overview page displays, you are in. (Fig. 8)

If your login attempt is denied, possible causes are:

- The user account was created, but not activated. Activate it as mentioned before.
• The username and/or password is incorrect due to misspelling or they are not for this website. Double-check the username and password and try it again.
• Forgot your username and/or password. Reset your password by clicking the “I forgot my password” on the login page, and following the instructions.
• Send a message to us by using the “Contact” function on the login page. We will help you out.

4. Module overview page

This page gives you an overview of all available modules. From here you start your e-learning journey (Fig. 8). Wherever you are, click “Home” to come back to the Module overview page.

Choosing a module to learn is the most common task here.

Fig. 8 Module overview page

4.1 Module block

The e-learning comprises a number of learning modules. Every module covers one specific topic.

The module overview page contains a number of module blocks. Every block provides the key facts of this module, including the title, playtime, language(s), and available test. (Fig. 8)

The table below shows all currently available modules in three categories: Basics, Features and Products.

<table>
<thead>
<tr>
<th>Basic</th>
<th>Feature</th>
<th>Product</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lung ventilation, natural and mechanical</td>
<td>Adaptive support ventilation (2nd edition)</td>
<td>Preparation for a ventilator module</td>
</tr>
<tr>
<td>Ventilator system concept</td>
<td></td>
<td>HAMILTON-C1 ventilator</td>
</tr>
</tbody>
</table>
4.2 Two additional features

The Module overview page has two more features worth mentioning. (Fig. 9)

**Recommended lectures**
By clicking “Recommended lecturers” you can access to 20 outstanding video lecturers on respiratory physiology and pulmonary pathophysiology. The lecturer is Prof. John West, a world-known physiologist.

Click “Respiratory physiology” or “Pulmonary pathophysiology” to show the list of the respective lectures. (Fig. 10)

Click the title of a desired lecture to view it on the YouTube.

**Feedback/Profile**
By clicking “Feedback/Profile”, you can send a message to us or to view and update your profile data.
5. Module structure

To view a learning module, you need to specify a) the module, b) the language, and c) the unit of interest. The graph in Fig. 11 exhibits the relationship among the three.

![Module Structure Diagram](image)

Fig. 11 Module structure

5.1 Selecting a desired module

On the Module overview page, click its thumbnail or the “Details” button of the desired module. (Fig. 12) The module cover and its selection column are displayed. (Fig. 13)

![Module Overview](image)

Fig. 12 Selecting a desired module
5.2 Selecting a language

The e-learning modules can be in English only, or in multiple languages. We are implementing module translations progressively. Language selection is done in the selection column (Fig. 13). Click the favored language to display the list of units in that language.

5.3 Selecting a unit to view

Depending on its size, a module comprises one or more units. Technically, a unit is an independent division, requiring individual initiation. A unit is typically for a chapter, but also possibly for more than one small chapters.

If the selected module has multiple units, click the first unit title to start the learning module. It advanced automatically to the end of this unit. Then you need do the same to initiate the second, third, ... the last unit. Of course, you may also initiate any unit as you wish. The current unit title is highlighted in bold. (Fig. 14)

The module-language-unit structure makes learning convenient and flexible. You can complete a module in one step or several steps at different times or days.

5.4 Test, Script and Feedback

There are three additional functional buttons in the selection column. (Fig. 14)

<table>
<thead>
<tr>
<th>Button</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>“Test”</td>
<td>Click “Test” to start the test. Refer to chapter 7.</td>
</tr>
<tr>
<td>“Script”</td>
<td>Click “Script” to display, download or print out the entire audio script of the current module.</td>
</tr>
<tr>
<td>“Feedback”</td>
<td>Click “Feedback” to send a message to us about this module.</td>
</tr>
</tbody>
</table>
6. Module navigation

Below is a typical page when a unit is running. (Fig. 15) The page comprises three areas that are highlighted with green frames. Area A is the selection column as explained earlier; Area B is devoted to graphic presentation; Area C devotes to synchronous display of the audio text.

![Fig. 15 A typical learning page](image)

This page also has a number of active objects. The common ones are framed and numbered in red.

1. Click this symbol to open the side menu window. (Fig. 16) By scrolling, you can view all the sections within this unit, and jump to another section as you wish.
2. Click this symbol to mute or unmute the sound.
3. Click this symbol to enter or exit full screen mode.
4. Click this symbol to hide or unhide the text column.
5. Click one of the vertical bars to jump to any paragraph within the current section.
6. Click here to return to the previous section.
7. Click the middle button to play or pause the module. Click a black or grey square for fast-forwarding or rewinding.
8. Click here to go to the next section.

![Fig. 16. Side menu](image)
7. Test and certification

Most modules have a voluntary test to evaluate the skill or knowledge that you just learned in the module. The test is in form of multiple choice. The number of questions of a module ranges from 5 to 20, dependent on its size. The passing score is that at least 80% of all questions are correctly answered. Click the Test button in the selection column to enter the test (Fig. 17).

Fig 17 The test button

7.1 Notification and two symbols

A pre-test notification displays for what you must know. (Fig. 18)

<table>
<thead>
<tr>
<th>What you must know before test:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Pay attention to the symbols before the provided answers. Radial circle indicates that the question has just one correct answer. Check box indicates that the question can have one, two or all answers correct. You must choose all correct one(s) to be right.</td>
</tr>
<tr>
<td>• Modifying submitted answer(s) is impossible. Nevertheless, you can redo the test.</td>
</tr>
<tr>
<td>• After passing test, you will receive the certificate via email. If it does not arrive, a) check your spam box, b) fetch the certificates online. Refer to the User Instructions.</td>
</tr>
</tbody>
</table>

Please read the above test instructions carefully and then press the Start button to begin with your test. Maximum number of attempts: Unlimited

Fig. 18 Pre-test notification

Pay attention to the explanation of two symbols assigned to all provided answers. (Fig. 19) You would encounter difficulty if you do not know them.

• The radial buttons: Only one answer is selectable, and only one answer is correct.
• The check boxes: All answers are selectable. One, two or all three answers can be correct. You MUST select all correct answer(s) to be right.

<table>
<thead>
<tr>
<th>2.1</th>
<th>2.2</th>
</tr>
</thead>
<tbody>
<tr>
<td>What does ASV stand for?</td>
<td>What does ASV do?</td>
</tr>
<tr>
<td>✅ Automatic support ventilation.</td>
<td>✅ ASV adjusts the target minute volume, automatically.</td>
</tr>
<tr>
<td>rinsed: Adaptive servo ventilation.</td>
<td>✅ ASV sets and adjusts tidal volume and rate, automatically.</td>
</tr>
<tr>
<td>✅ Adaptive support ventilation.</td>
<td>✅ ASV selects the type of breath to deliver, automatically.</td>
</tr>
</tbody>
</table>

Fig. 19 Two symbol types

Click “Start test” button to display the test page.

7.2 Test page

The test page has two areas and three common active objects. (Fig 20)

The areas are highlighted with green frames.

- Area A lists all questions so that you know where you are.
- Area B displays the current question and provided answers.

The three objects are framed and number in red.

1. The horizontal bar is known as “answer barometer”, indicating the number of answered questions (right), and the number of correctly answered questions (left) of the total.
2. Click “Submit test” to submit the entire test after answering all questions. Click “Pause test” to suspend the current test.
3. Click “Submit answer” to submit your answer(s) to the current question and move to the next question. Note: You cannot correct the answers after clicking “Submit answer”. Click “Next question” to skip the current question.

Fig. 20 A typical test page
To understand the user satisfaction and meet the requirement of continuing education, we add a form of evaluation at the end of a test. All users are required to answer three simple questions as below. (Fig. 21) The answer will not influence your overall score.

![Fig. 21 valuation form](image)

### 7.3 Submission, result and certificate

After you click “Submit test”, a window pops up, asking for your confirmation. (Fig. 22)

![Fig. 22 The confirmation window](image)

After clicking the “Ok” button, this session of test is completed, and your test result is displayed as below. (Fig. 23)

![Fig. 23 Test result](image)
By scrolling down, you can view your answer(s) to every question. When you pass the test, your certificate of completion for this module is delivered automatically to your mailbox. (Fig. 24) The certificate is in English, German and Russian.

It is rare yet possible that you do not receive your certificate because a) the mail is blocked by the firewall of your computer or institution, and b) it is directed to the junk/spam folder. Check these folders first.

Don’t worry, you can all of your certificates at any time access in two steps. (Fig. 25)

1. Click the star symbol on the top right to display all of your certificates so far.
2. Click the pdf symbol for the desired certificate.

7.4 Retake a test

You need to exit and relaunch this module. Click “Test” button to display the results of the previous test. Scroll down to the very end. Click “Start test” button to begin the new test session.

8. CEU/CPD

In many countries, medical professionals are required to participate in continuing education programs for a certain number of hours each year in order to keep their qualification to practice in their fields. CEU (Continuing Education Unit) and CPD (continuing professional development) are often used to quantify the participation time.

“Can I use the certificates of Hamilton Medical College as proof to earn CEU or CPD credits?” Yes, you can. However, two points are important to know:
Firstly, your hospital or healthcare organization has the right to accept or reject the certificates for CEU or CPD credits. Therefore, it is a good idea to talk to the person in charge of staff education beforehand.

Secondly, the CDU and CPD credits are based on the time of contact, i.e. the estimated mean time required to complete a module and the test. The table below lists the time of contact of all modules that are currently available.

<table>
<thead>
<tr>
<th>Module title</th>
<th>Play time (minutes)</th>
<th>Time of contact (hour)</th>
<th>AARC accredited</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basics</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lung ventilation, natural and mechanical</td>
<td>22</td>
<td>0.5</td>
<td>---</td>
</tr>
<tr>
<td>Ventilator system concept</td>
<td>14</td>
<td>0.5</td>
<td>---</td>
</tr>
<tr>
<td>Essential variables and mechanical breath types</td>
<td>30</td>
<td>1.0</td>
<td>---</td>
</tr>
<tr>
<td>Ventilation modes ABC</td>
<td>35</td>
<td>1.0</td>
<td>---</td>
</tr>
<tr>
<td>Basics of capnography</td>
<td>20</td>
<td>0.5</td>
<td>---</td>
</tr>
<tr>
<td>ASV (the 2nd edition)</td>
<td>40</td>
<td>1.25</td>
<td>Yes</td>
</tr>
<tr>
<td>Dynamic lung and vent status panels</td>
<td>10</td>
<td>0.3</td>
<td>---</td>
</tr>
<tr>
<td>Introduction to INTELLivent-ASV</td>
<td>30</td>
<td>1.0</td>
<td>---</td>
</tr>
<tr>
<td>Basic operation of INTELLivent-ASV for G5/S1</td>
<td>55</td>
<td>1.5</td>
<td>---</td>
</tr>
<tr>
<td>Basic operation of INTELLivent-ASV for C3</td>
<td>55</td>
<td>1.5</td>
<td>---</td>
</tr>
<tr>
<td>Basic operation of INTELLivent-ASV for C6</td>
<td>55</td>
<td>1.5</td>
<td>---</td>
</tr>
<tr>
<td>Features</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Preparation for a ventilator module</td>
<td>16</td>
<td>0.5</td>
<td>---</td>
</tr>
<tr>
<td>HAMILTON-C1 ventilator</td>
<td>45</td>
<td>2.5</td>
<td>Yes</td>
</tr>
<tr>
<td>HAMILTON-C2 ventilator</td>
<td>65</td>
<td>1.5</td>
<td>---</td>
</tr>
<tr>
<td>HAMILTON-C3 ventilator</td>
<td>45</td>
<td>1.5</td>
<td>---</td>
</tr>
<tr>
<td>HAMILTON-C6</td>
<td>45</td>
<td>1.5</td>
<td>---</td>
</tr>
<tr>
<td>HAMILTON-MR1 ventilator</td>
<td>45</td>
<td>1.5</td>
<td>---</td>
</tr>
<tr>
<td>HAMILTON-MR1, use in MRI room</td>
<td>12</td>
<td>0.5</td>
<td>---</td>
</tr>
<tr>
<td>HAMILTON-G5 ventilator</td>
<td>77</td>
<td>2.5</td>
<td>Yes</td>
</tr>
<tr>
<td>HAMILTON-T1 ventilator</td>
<td>45</td>
<td>2.5</td>
<td>Yes</td>
</tr>
<tr>
<td>HAMILTON-T1, use for patient transport</td>
<td>20</td>
<td>0.5</td>
<td>---</td>
</tr>
<tr>
<td>HAMILTON-H900 humidifier</td>
<td>20</td>
<td>0.5</td>
<td>---</td>
</tr>
<tr>
<td>IntelliCuff pressure regulator</td>
<td>5</td>
<td>0.25</td>
<td>---</td>
</tr>
</tbody>
</table>

As indicated, four of the learning modules are accredited by the AARC CRCE. The respective certificates carry the information of the accreditation. We are working on getting more modules accredited.