SmartMan Code User Manual – 5.0 Results

For SmartMan Code, Megacode and Megacode ROC
V1.1.0 current at 1 October 2013

Table of Contents

SmartMan Code User Manual – 5.0 Results 1
SMARTMAN CODE SMARTMAN MEGACODE SMARTMAN MEGACODE ROC 2
5.0 RESULTS 2
5.1 RESULTS ON-SCREEN 2
5.1 1 Information Area (Results) 2
5.1.2 Current Progress Area (Results) 2
4.1.3 Intervention and Timer Area (Results) 3
4.1 4 Real Time Feedback Area (Results) 3
4.1.5 Health Status Area (Results) 3
4.1.6 Compliant Compressions Button: 4
4.1.7 Print Results Button 4
4.1.8 Advanced Analysis Button 4
4.2 RESULTS IN AFTER ACTION REPORT - AHA 7
4.2.1 Generating the After Action Report 7
4.2.2 Overview of The Sections of the AAR 8
4.2.3 Title Section 8
4.2.4 Intervention Timeline 9
4.2.5 Code Summary Stats 9
4.2.6 Megacode Stages 10
4.2.7 Compliant Compressions By Stages 11
4.2.8 Analysis of Compressions 12
4.2.9 Analysis of Ventilations 13
4.3 ARCHIVE RESULTS 14
4.3.1 Print After Action Report 14
4.3.1 Store After Action Report as pdf 14

5.0 RESULTS

Some information in this manual applies ONLY to ROC protocols. That information is clearly marked. ROC **ROC ONLY** appears in an orange shade like this.

Difference in ROC:

What is performed whenever BLS CPR is required..

Thus On-screen in the feedback area, what is displayed as the code is going on will display lower volume for ventilations and they will displayed during continuous compressions.

In Results, there will be two appropriate volumes for reporting;

1. *During the Code*: The low volume of BLS CPR
2. *Results*: The normal volume when/if the patient is intubated.

5.1 RESULTS ON-SCREEN

The screen changes once the code is completed and you move to review results. Once results are displayed you are able to:

See a quick summary on the screen

5.1 1 Information Area (Results)

This area disappears and it becomes the area to display an advanced analysis of the skills performed. See the section on Advanced Analysis below.

5.1.2 Current Progress Area (Results)

See right side of the picture below.

This now displays summary information related to the total number of chest compressions performed during the code. It also provides the duration of the code.

Below this is a percentage of how well the total of compressions performed were correct for Depth and Rate. The last percentage is the percentage of the total compressions performed which were totally compliant with the current AHA guidelines.

Top

4.1.3 Intervention and Timer Area (Results)

The Intervention Buttons will disappear and here you will see which buttons you pressed and at what times. See next picture.

4.1 4 Real Time Feedback Area (Results)

This area contains each cycle of CPR. At the top left of the area it will tell you how many cycles of 30 you can scroll through. Each cycle shows you the quality of each chest compressions and ventilation. Click on the Next Button on the left edge of the display to show the next cycle.

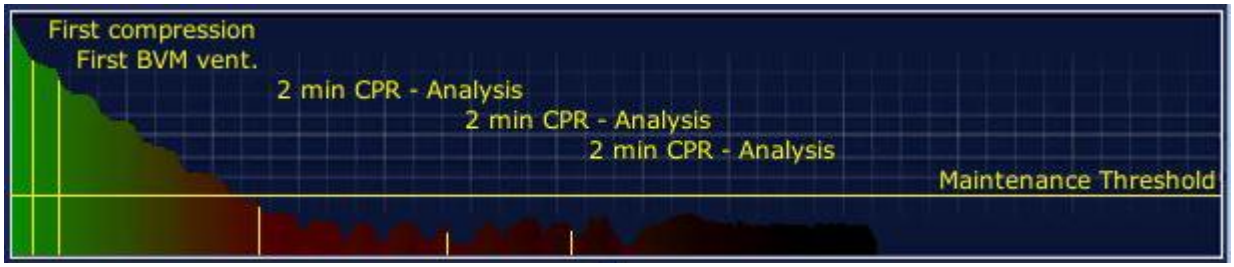
When you are showing a particular cycle, click on the “Compliant Compressions” button to display only those compressions which are fully compliant. This ONLY displays the compliant status for the cycle which is currently showing. Click the “Compliant Compressions” button again to return to the normal display.

Click the next cycle button to display results for the next cycle.

Top

4.1.5 Health Status Area (Results)

This area now shows the completed quick graph as a timeline.



Color: The color shows the oxygen available to the patient. In the above case it shows the decrease in oxygenated blood as the code continues. By performing perfect CPR you can greatly slow down how quickly oxygenated blood is used up. That is, the better you perform the more gradual the decline.

Maintenance Threshold: This is the Horizontal Yellow Line. The following picture is an example of a Health Status Display. The use of external heart massage cannot provide the

same oxygenation as present in normal breathing. The “Maintenance Threshold” line indicates the maximum you can aim for.

You will notice that stopping chest compressions reduces the health status. By performing better compressions (in accordance with the current AHA Guidelines) the health Status will improve.

Stages: This timeline also indicates when each stage started (a solid vertical line). This is triggered by use of the AED. Currently this Health Status Display will only show results for the first 10 minutes of the code.

Labels: The labels indicate when key events took place.

Top

4.1.6 Compliant Compressions Button:

During CPR, our aim is to provide more compressions (less hands off the chest time) and better compressions (fully meeting the guidelines).

This button shows you only the compressions which are fully compliant with the current 2010 AHA Guidelines. They are perfect for depth, rate and recoil. When you press the button, all of the colored compressions bars showing on the screen which are NOT bright green will disappear. This only applies to the set which are currently displayed on the screen.

4.1.7 Print Results Button

Click this button and an html page will load. It will show you a summary of the performance. Active X must be turned on for you to see the numbers in this form. You can then save the page, print it, or attach it to an email. See below for more details.

Top

4.1.8 Advanced Analysis Button

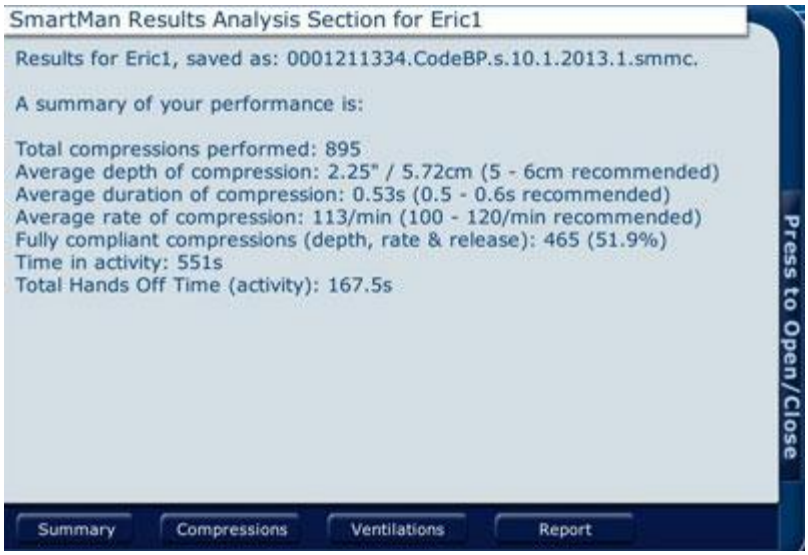
To display the advanced information relating to the performance of skills during the code, go to the far left edge of the window and click on the “Press To Open/Close” Button.

It will open a window and it will display the summary information of the current code.

Summary Button

The following picture is an example of the summary information displayed:

Top



Click on one of the buttons at the bottom of the window to see more information.

Compressions Button

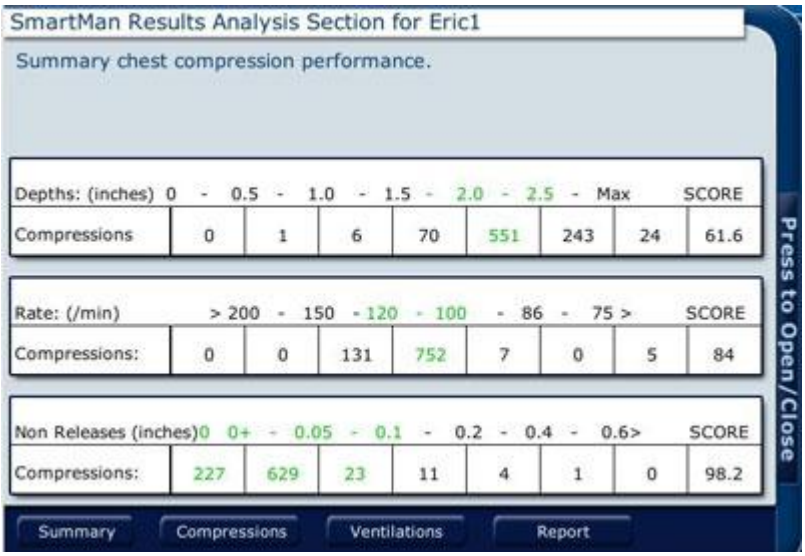
The total number of compressions and how they were performed will be grouped according to each parameter and the level at which they were performed. Those performed to the target level are shown in green.

Line 1 Depths are categorized in groups of ½ inch.

Line 2 Rates are categories as described in the headings in the table.

Line 3 Non-release of the chest are categorized in groups of 0.1 of an inch. As SmartMan records even minor non-releases you may see a couple of categoriey slight non releases. If these are bright green and 0.1 inch or less then these are acceptable.

Top



Top

Ventilations Button

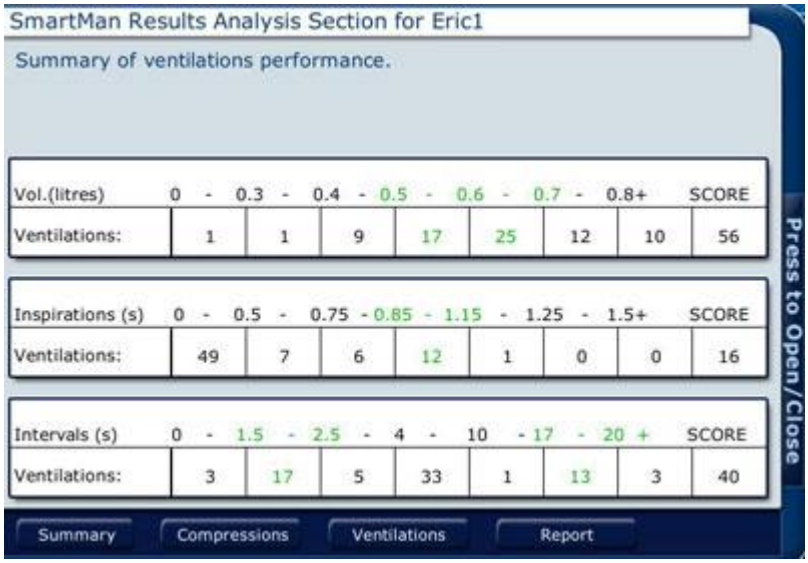
The total number of ventilations and how they were performed will be grouped according to parameter and the level at which they were performed. Those performed to the target level are shown in green.

Line 1: Vol (litres) refers to the volume of the ventilations provided.

Line 2 Inspirations refers to the rate at which the ventilation was delivered. These are put into categories with the target volumes being in green.

Line 3 Intervals refers to the time between ventilations.

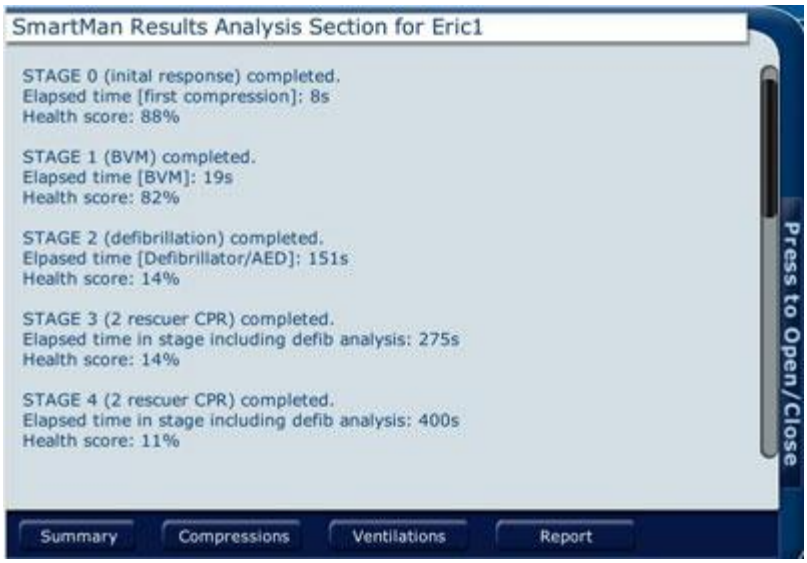
Top



Top

Report Button

The report button provides information on the performance as related to the expected stages and the expected idealized time within each stage. It provides the time spent in that stage and a percentage for the health score.



Top

4.2 RESULTS IN AFTER ACTION REPORT - AHA

The report will be generated from the data that was stored as the code was performed. It is created from the data each time you press the print report. The After Action Report will open your default browser.

You may receive a message from your browser, saying that an application is trying to make a change to your page. You must allow this, or the numbers (the data) will not be permitted to be entered into your browser page.

4.2.1 Generating the After Action Report

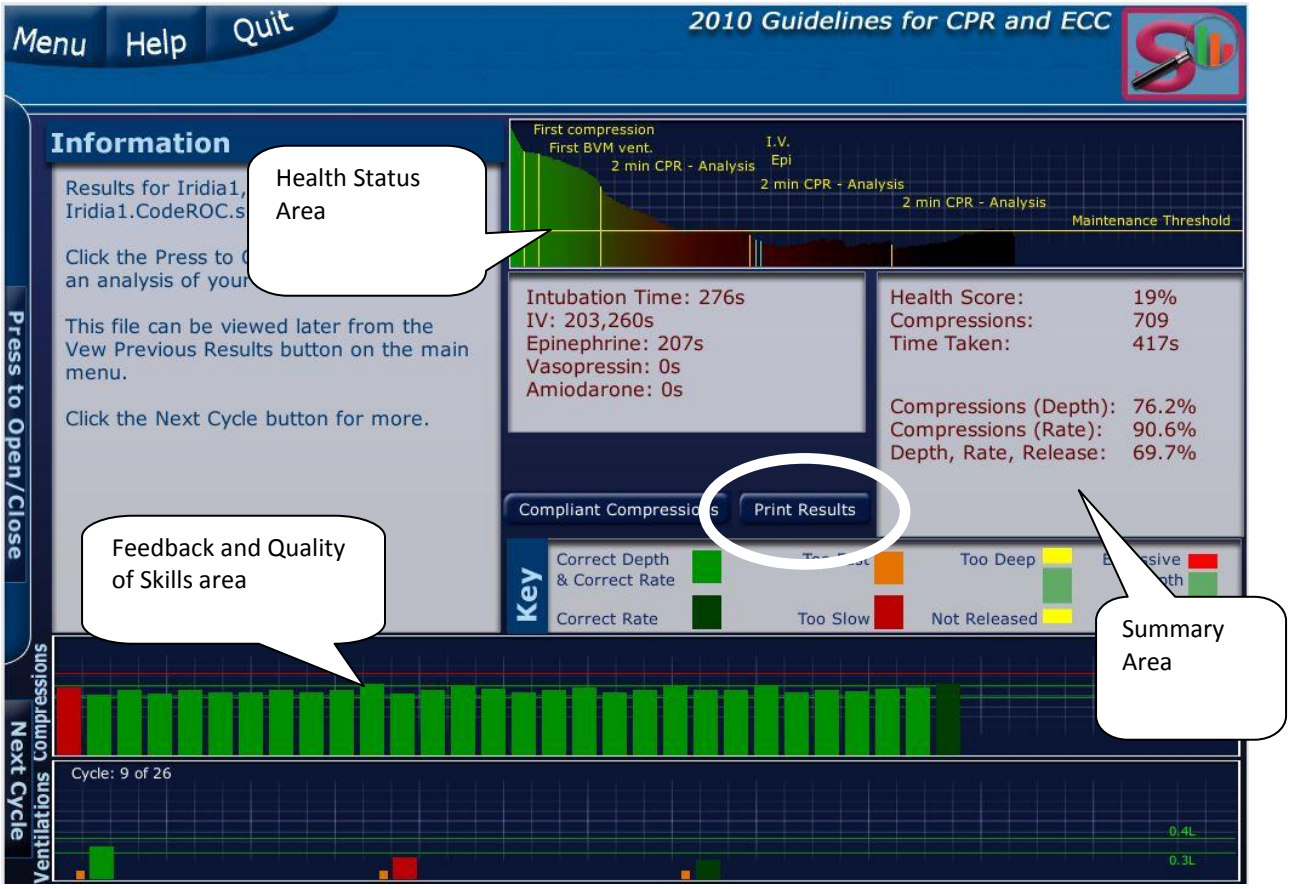
The main screen provides real time feedback as the code is being performed. Once the code is finished it displays the results. To generate the After Action Report, you must have the Results on your screen.

The Print Results button is located in the middle of the screen. See the picture below.

Since the report will be displayed in your default browser, it must open your browser. This may take a few seconds if it is not already open.

NOTE: You will have to allow the program to put the data into your browser page. If the page loads but there are no numbers in it, then your browser has been set to prevent the program from allowing it to be changed by another program. You must allow this.

Top



Press the “Print Results” button to generate the After Action Report.

Top

4.2.2 Overview of The Sections of the AAR

There are 7 sections to the After Action Report. Each section provides specific information related to the code.

1. Title Section
2. Intervention Timeline
3. Codes Summary Stats
4. Megacode Stages
5. Compliant Compressions By Stages
6. Analysis of Compressions
7. Analysis of Ventilations

Each section is described in detail below.

4.2.3 Title Section

Results are recorded on the local computer under the login name. It is possible to copy and delete results from the local computer.

The time and date information used in the files is the time and date as set on the computer when the activity was performed. To make sure this file has the correct date and time, check the computer date and time settings before you begin the activity.

The following information is contained in this section.

Name: This contains identifying name that was used for Login. If you created a Login name, it is much easier to keep track of what was done.

File Name: This is the file name as stored on the hard drive. It will identify which activity was performed and the date it was performed (according to the computer it was performed on),

Activity: This will identify which activity was performed.

Date/Login ID: This reports the date the activity was performed and the name used for the login.

Health Score: This is the health score of the patient when the code was stopped. A good health score is close to 20%

Top

4.2.4 Intervention Timeline

This contains a graph from the beginning of the code until it is stopped.

- Each stage of the code is marked.
- Each time an intervention button was pressed, an identifying marker and the time is put onto the graph.

For example the graph indicates each time the defibrillator was used to analyze the heart rhythm, when an IV is established, when epinephrine was given, etc.

4.2.5 Code Summary Stats

This section gives a overall evaluation of how well skills were performed during the code.

Key points might indicate areas where improvement needs to be made or in fact where it is being performed very well

Total Time in Activity	362 seconds
Hands Off Time in Activity	129.3 seconds
Total Compressions	550
Average Rate of Compressions	105/min
Overall Compressions Compliant	57.5%
Total Ventilations	41
Ventilations Compliant	10

Note: 1/3rd of code not performing compressions

Note the overall low level for compliant compressions

Top

4.2.6 Megacode Stages

This section provides a table of the running time, a list of the stages of the code with the critical event that occurred, and details on performance during each stage.

It also provides detail on the total number of chest compressions were performed during that stage of the code along with how many of those were compliant with the protocol being practiced.

Below is an example of the report produced during this stage of the After Action Report. A couple of points are highlighted below to draw your attention to the information. These highlights are not a part of the report but are a part of this explanation.

Time from Start	Critical Event	Details
4	Stage1	Initial Response = first compression detected
		94% health score
22	Stage2	Initial ventilation = BVM arrived.
		17 compliant of 30 compressions
		0 compliant of 1 ventilations
		85% health score
71	Defib1	Defibrillation Analysis.
		50 compliant of 68 compressions
		1 compliant of 5 ventilations
		71s to defib. analysis
		56% health score
178	Defib2	Defibrillation Analysis.
		130 compliant of 154 compressions
		6 compliant of 10 ventilations
		107s to defib. analysis
		15% health score
272	Defib3	Defibrillation Analysis.
		24 compliant of 151 compressions
		3 compliant of 10 ventilations
		94s to defib. analysis
		7% health score
285	Intub.	Intubation Recorded
363	Defib4	Defibrillation Analysis.
		95 compliant of 147 compressions
		0 compliant of 15 ventilations
		91s to defib. analysis
		14% health score
368	Stop called	SCA response ended.
		14% health score

Analysis of CPR from 1st Defibrillator use until Defibrillator used again

Note the difference in quality during the different stages

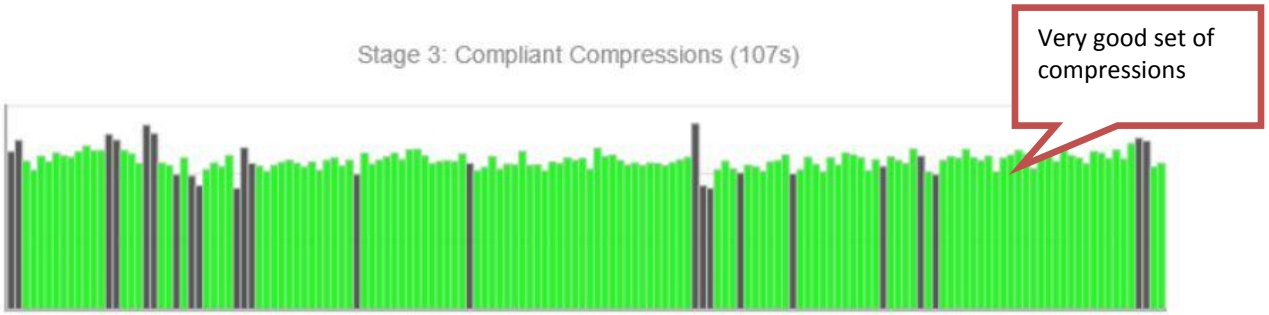
4.2.7 Compliant Compressions By Stages

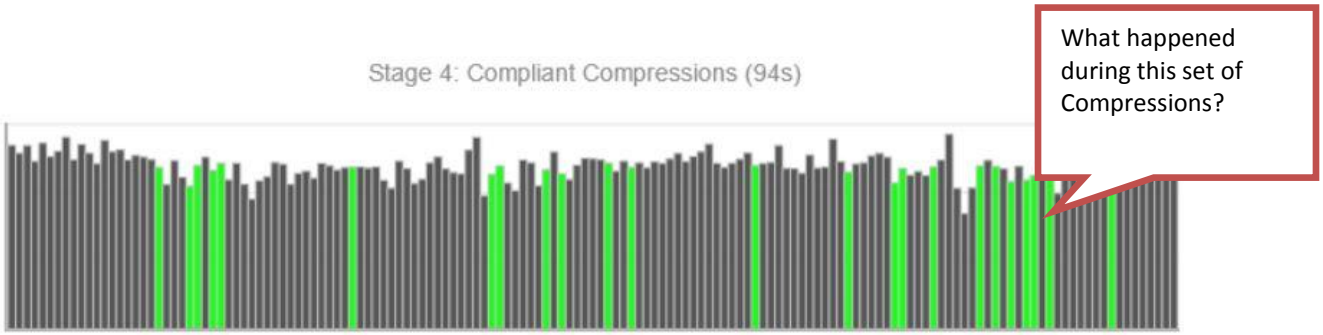
This provides an at a glance view of how well compressions during each stage were performed.

- All compressions during each stage are displayed.
- Only two colors are used; bright green for all correct (compliant) or dark grey for not correct. Each compression is a single bar.

This allows you to instantly see whether it is a mostly compliant performance or not. In a situation where there is a change of team, you can instantly see if one team was much better than another.

Top





Top

4.2.8 Analysis of Compressions

This section provides detail on the overall performance of chest compressions. It provides each of the following statistics:

- Total compressions performed:
- Average depth of compression:
- Average duration of compressions
- Average rate of compression
- Total time in activity:
- Hands off time (activity)

Also there is a statistic for the total compressions by depth, rate and release. There is also a percentage for fully compliant compressions.

See the picture below:

Analysis of Compressions

Performance of Compressions	
Total compressions performed:	741
Average depth of compression:	2.24in. (5.69cm)
Average duration of compressions:	0.54s
Average rate of compression:	111/min
Total time in activity:	403s
Hands off time (activity):	94.6s
Compressions by	
Compressions (Depth)	66.3%
Compressions (Durations)	87%
Compressions (Releases)	97.7%
Compressions (Fully Compliant)	58.3% (432 of 741)

Top

Further Details on Compressions

The total number of compressions and how they were performed will be grouped according to parameter and the level at which they were performed. Those performed to the target level are shown in green.

Line 1: Depths are categorized in groups of ½ inch. The target depth (2.0 – 2.5 inches) are shown in green. The percentage of compressions performed within this target range is also provided.

Line 2: Rates are categories as number performed per minute. The target rate of 100 – 120 per minute noted in green. Also the percentage of compressions performed at the target rate is provided.

Line 3: Non-releases of the chest are shown in tenths of inches. As SmartMan records even minor non-releases you see that a non-release of up to 0.1 of an inch is acceptable and hence the compression bar is shown in green. The percentage of chest compressions performed with full release of the chest is also provided.

Below is an example of this section of the After Action Report.

Compressions: Detailed analysis								
Depths (inches)	< 0.5	<1.0	<1.5	< 2.0	2.0 - 2.5	>2.5	Max	Score
Comps	0	0	3	64	491	159	24	66.3%
Rate (/min)	>200	>150	>120	>100	>86	>75	<75	Score
Comps	0	1	85	645	6	1	3	87%
Releases (inches)	0	<0.05	<0.1	<0.2	<0.4	<0.6	0.6+	Score
Comps	118	594	12	12	2	0	1	97.7%

Top

4.2.9 Analysis of Ventilations

This section provides detail on the overall performance of ventilations. It provides each of the following statistics:

- Total ventilations performed:
- Average volume of ventilation (low vol):
- Average volume of ventilation (normal volume):
- Average duration of inspiration (low vol):
- Average duration of inspiration (normal vol):

Also there is a statistic for the total ventilations by volume and duration of inspiration. There is also a total percent for fully compliant ventilations. See the picture below for an example of this information

Analysis of Ventilations

Performance of Ventilations	
Total ventilations performed:	67
Average volume of ventilation (low vol):	0.4L
Average volume of ventilation (normal vol):	0.46L
Average duration of inspiration (low vol):	0.35s
Average duration of inspiration (normal vol):	0.29s
Ventilations by Sub-skill	
Ventilations (correct volume)	37.3%
Ventilations (correct duration of inspiration)	56.7%
Ventilations (Fully Compliant)	23.8% (16 of 67)

Top

Further Details on Ventilations

The total number of ventilations and how they were performed will be grouped according to parameter and the level at which they were performed. Those performed to the target level are shown in green.

Line 1: Volumes of air given in each breath are categorized in 100ml stages. The target ventilation is provided in green. The percentage of ventilations performed within the range is also provided.

ROC ONLY In the example below, there are two target volumes because ROC protocol uses a low volume ventilation when the patient is not intubated. If you were performing AHA protocols there would be no information relating to low volume breaths as all breaths are provided at the same target range.

Line 2 Inspiration refers to the rate at which the ventilation was delivered. These are categorized as show in the picture below. The target volumes are shown in green and the percentage of ventilations delivered within the target range is also provided.

ROC ONLY In the example below, there are two target inspiration rates because ROC protocol uses a low volume ventilation provided on a non-intubated patient while chest compressions are ongoing. This ventilation must be provided on release of the chest.

Ventilations: Detailed analysis

Volume (L)	< 0.3	<0.4	<0.5	< 0.6	< 0.7	<0.8	Other	Score
Vents	7	19	26	4	2	2	7	37.3%

Inspiration (s)	<0.2	0.2-0.4	<0.6	<0.85	0.85-1.15	1.15+	Other	Score
Vents	0	38	9	1	0	0	19	56.7%

Top

4.3 ARCHIVE RESULTS

It is always possible to return to the results on your computer but there may be times when you want to keep a print copy of the code results and/or you may want to keep a convenient copy of the after action report in a pdf. Pdf's are easy to print and easy to attach to an email.

4.3.1 Print After Action Report

The results displayed on your screen are in html format (the same format as a normal web page). Simply go to print in your browser.

4.3.1 Store After Action Report as pdf

You must be viewing performance results to print them. Results will appear as soon as you press the Stop Button. Or from the Main Menu, select the View Previous Results, select Megacode, then select the particular results you wish to view.

Print Results

Click “Print Results” button near the middle of the screen. The results will be generated in an html page. Note:

If your browser is not yet running, it may take a few seconds to load before you see the results.

Active X must be turned on in your browser for you to see the numbers on this page.

The print page will show you a summary of the performance. Once it is displayed you can print the page and save it as an mht or maff file or it can be attached to an email.

Top