



Shanghai Honglian Medical Technology Group Co.,Ltd.

Comprehensive Emergency Training System

TYPE: GD/ACLS8000D

Instruction Manual



Shanghai Honglian Medical Technology Group Co.,Ltd.

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Premise

Thank you for buying GD/ACLS8000 Comprehensive Emergency Training System!

The advent of this system has once again demonstrated our pursuit “Innovation and Quality”. The system follows AHA 2020 emergency guideline for CPR and ECC, and adds more new features and realizable manikin technology on the basis of original CPR training equipment.

- ✧ **Benefits of Education**—Provide highly realistic simulated emergency training, so that students can quickly and accurately master the standard emergency operation.
- ✧ **Multifunctional usage**—can simulate different types of real cases, suitable for all divisions of medical staff to use.
- ✧ **Cost-effective**-- Cost-effective and high quality service
- ✧ **Multiple cases script**—so that learners can study abnormal cases that is rare in real life
- ✧ **Easy to use**—can be flexible to be used in different subjects
- ✧ **Realistic anatomy**—Vividly simulate multiple vital signs
- ✧ **Convenient delivery**—Convenient installation and disassembly

Honglian enterprise is willing to cooperate with old and newer friends sincerely both at home and abroad to create a better future.

Brief Introduction

Shanghai Honglian Medical Instrument Co., Ltd. was established in 1993. There are more than 200 employees for technology, production, management and sales. The turnover has reached RMB 50 million every year; it has enjoying great prestige in health education circles. Many famous university and medical institutes are retained as our company's supporters for technology and research, such as Shanghai Jiaotong University, Fudan University, and so on. In January 2002, we were authenticated by British Moody Company and got the Certification of ISO 9001-2000.

We are the first batch of company, which is granted two management licenses and 5-year production exemption from inspection by state Drug supervision bureau.

We are one of the largest enterprises for producing medical instruments in China at present.

"General Doctor" series products include Anatomical Model, Medical Clinic Training Simulator, Medical Nursing training Manikin, etc. They got good reputation from many customers owing to their good material and exquisite handicrafts, and be approved by Ministry of Health, Ministry of Education and Red Cross Society of China. At the same time, they are be recognized by more and more oversea customers, and exported to many countries over the world.

"Go straight" and "honesty-oriented business" are our tenets. We wish we could contribute our power to impel medical education development.

GD/ACLS8000D Manikin Instruction Manual

GD/ACLS8000D system mainly provides ACLS operation procedures training and assessment. Through simulating virtual emergency cases and emergency skills training to help medical learners with standardization training. The emergency teaching system consists of full-body male manikin, vital signs simulator, multi-parameters simulative monitor, computer, with BLS and ACLS emergency functions, invasive BP measurement, auscultation, identification of normal and abnormal heart sound, respiration sound, bowel sound, pulse, BP, ECG and other vital signs functions. At the same time, the system also is suitable for rural physicians' skills training, and provides CPR and external defibrillation operation skills; the system is a combination of pictures, text, auditory image and videos, features operation log, save, assessment evaluation, result print and online interactive function; its birth can fill the domestic gaps, marking China's emergency training mode can catch up with developed countries.

GD/ACLS8000 Emergency Skills Training Software

System function introduction

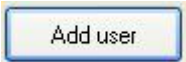
- a) ACLS special skills training
- b) ACLS self-setting scenes operation
- c) ACLS professional emergency cases training
- d) ACLS professional emergency cases assessment

Logging

Choose logging name, click “confirm” button to enter into main interface



Features:

- 1、: Add Logging user: information will appear in the lecturer information list after finish addition;
- 2、Click logging name, enter password, choose serial port No, then click “Confirm” button to enter main interface.
- 3、Delete logging user: Enter password to delete the logging user.

Main interface



Introduction of main interface:

Main interface consist of Title bar, Menu bar, Function display area and Output window, etc;

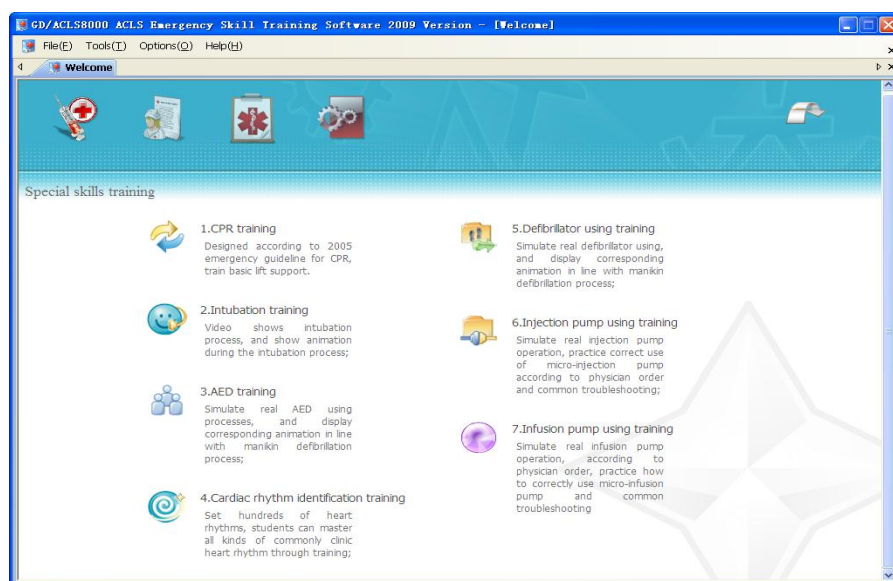
- (1) Title bar: [Minimize] () 、 [Maximize] () and [Close] ()
- (2) Menu bar: include nearly all the system orders, which is consistent with the features of Functional area;
- (3) Function display area: It is the most important components, directly display the main features and components of this system; it includes system courseware, special skills training, professional emergency case training, professional emergency cases assessment, system functions.

One、Special skills training



Method 1: Click “  ” to enter into interface (as following fig.)

Method 2: Click System functions---Special skills training---directly enter into the required courseware contents



Special skills training content includes:

- a) CPR emergency training
- b) Intubation training
- c) AED usage training
- d) Cardiac rhythm identification training
- e) Defibrillation machine usage training

- f) Injection pump usage training
- g) Transfusion pump usage training

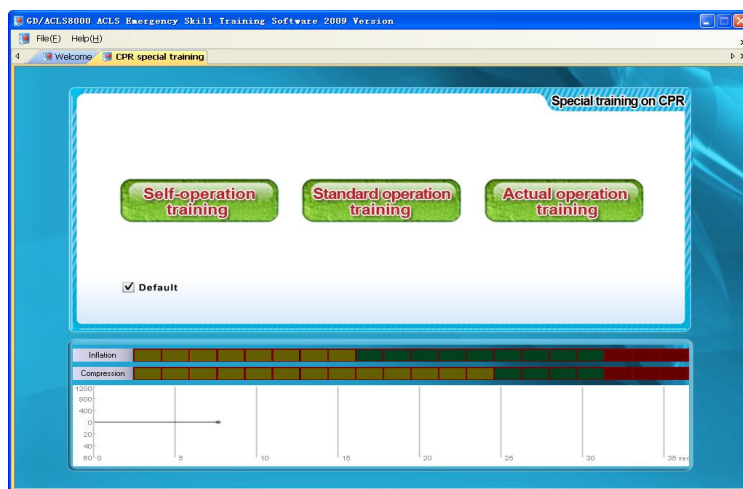


(1) CPR emergency training: click “ ” to enter the following interface (as following fig.)

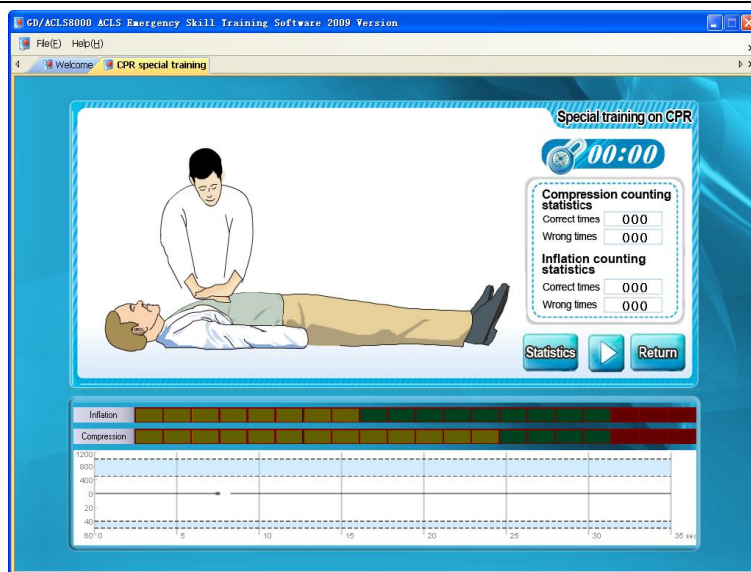
Features:

1、 Training mode: have 3 kinds

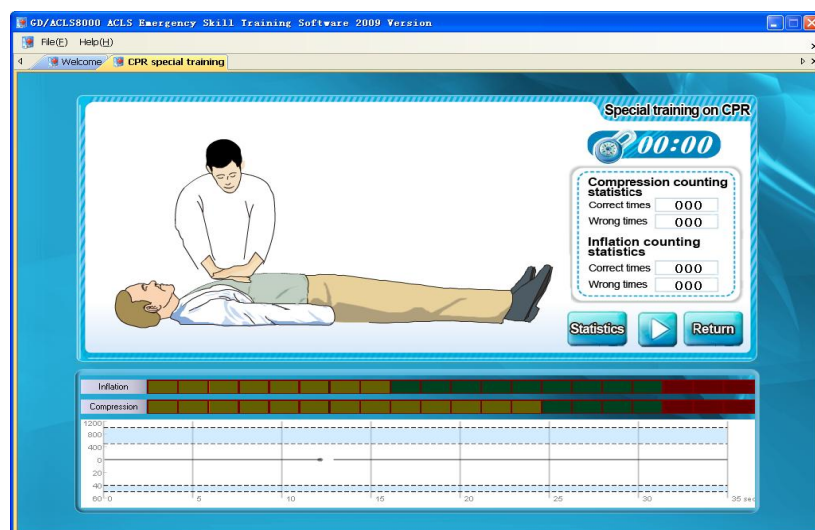
- ✧ Self-operation practice: Carry out artificial respiration and external chest compression freely, do not need to follow the ratio of 2:30 for artificial respiration and external chest compression;
- ✧ Standard operation practice: must operate follow the ratio of 2:30; and can only give 30 times right compression (do not count the wrong compression)after 2 times correct inflation (do not count wrong inflation)
- ✧ Actual operation practice: must follow the operation ratio 2:30; after 2 times inflation(both right and wrong operation would be counted), act 30 times compression(both right and wrong operation would be counted)



Click one of the CPR operation; such as”Self-operation practice” to enter the following interface (as following fig.)



- 1、 The interface displays CPR operation FLASH, Time Control Area, Statistic Area, Inflation and Compression bar code and Operation Time Area



- 2、 Click “”, patient would be in initial state, “” begin time counting;
- 3、 Synchronous FLASH operation display
- 4、 Compression times statistics: Statistics according to compression depth, system default is 4-5cm; can count right and wrong times;
- 5、 Inflation times statistics: Depending on inflation volume, system default is 500-1000ml; can count right and wrong times
- 6、 Inflation bar code: Bar code would show yellow, green and red color when the inflation volume is deficient, right and excessive
- 7、 Compression bar code: bar code would show yellow, green and red color if compression depth is too shallow, right and excessive; the following picture shows deficient compression depth, bar code is yellow color;



8、 Real time display artificial respiration and external chest compression wave-form



9、 “Return” : return to previous interface



10、 “Statistics” : with statistics after completing operation; show student name, operation date, lecturer, result,can print (as following Fig.)

CPR operation statistics dialog box

CPR operation statistics sheet					
Name:	Date: 2010-2-3	Teacher: hujs	Result:	Print	
Statistic report:					
Compression rate/per min:	0	time/min	Average inflation volume:	0	ml
Average compression times /min:	0	time/min	Inflation volume per min:	0	ml
The average compression depth:	0	mm	Times per min:	0	times
Total correct compression times:	0	times	Total correct inflation times:	0	times
Total wrong compression times:	0	times	Total wrong inflation times:	0	times
Too excessive compression:	0	times	Excessive inflation:	0	times
Deficient compression:	0	times	Insufficient inflation:	0	times
Incomplete release compression:	0	times	Inflation comes into stomach:	0	times
Wrong compression site:	0	times	Airway close-up:	0	times
Low position:	0	times	Other wrong inflation:	0	times
Too high position:	0	times			
Too right position:	0	times			
Too left position:	0	times			
Other wrong compression:	0	times			

✧ Self-operation practice procedures:

- 1、 Check manikin states: dilated pupil, no spontaneous pulse of carotid pulse; consistent with CPR operation standards;
- 2、 Click “Start” to begin time counting
- 3、 Inflation practice
- 4、 Compression practice

✧ Standard operation practice and actual operation practice procedures:

- 1、 Check pupil states: dilated pupil, no spontaneous carotid pulse; in line with CPR operation standard
- 2、 Click “Start” to begin time counting
- 3、 2 times of correct inflation
- 4、 30 times of correct compression
- 5、 Finish in regulated time, check manikin states, contrated pupil, spontaneous pulse of carotid artery; successful rescue;
- 6、 Statistic and print result sheet

(2) Intubation training

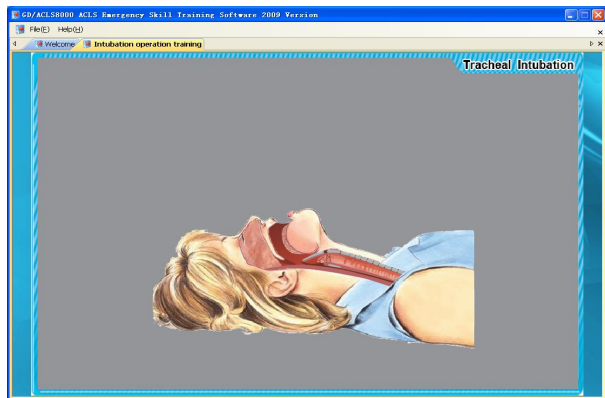
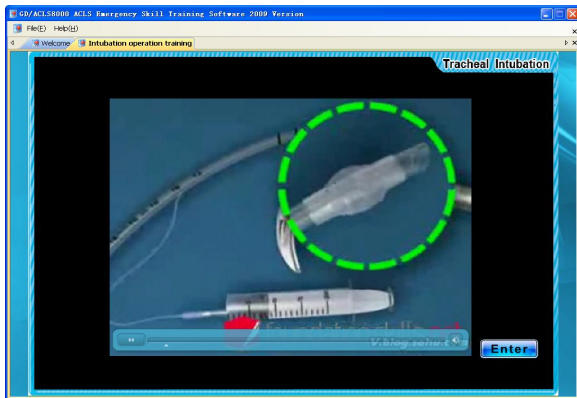


Click “Intubation training” to enter special intubation training, as following fig.

Features:

1、Video displays tracheal intubation manikin,

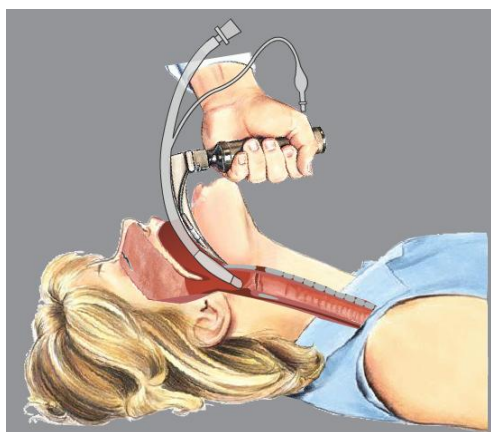
2、Click “Operation” to begin training on Computer cartoons synchronously display operation process



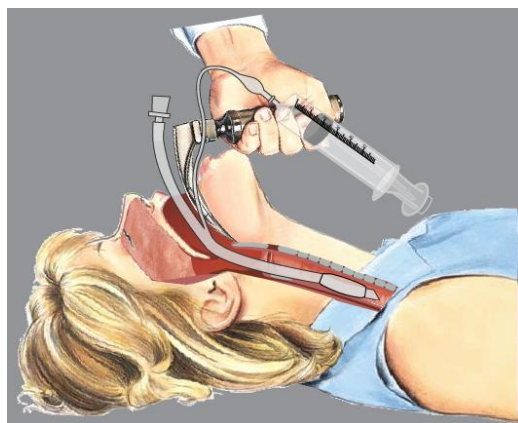
2、In initial states, manikin has no breathing

3、Teeth alarming because of laryngoscope pressure on teeth

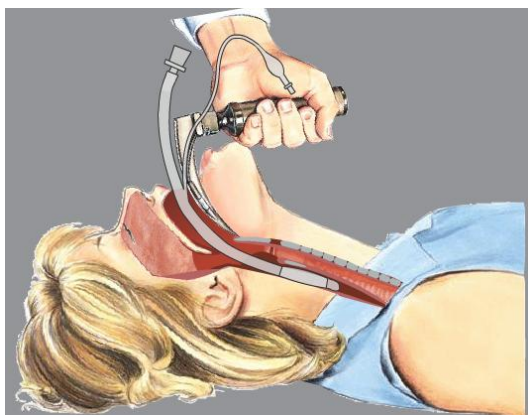
4、Judge tracheal intubation position via different animation display (as following fig.)



Canula inserts into stoma of trachea



when canula inserts into airway

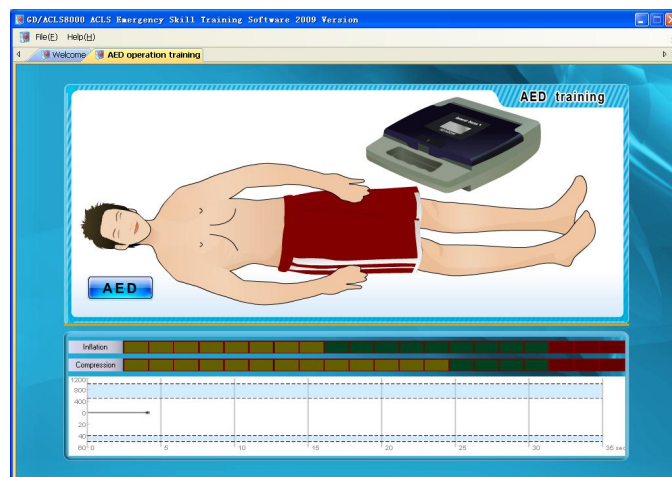


Canual inserts into esophagus

2、After successful intubation, auscultate respiration sound on manikin with electronic auscultator.

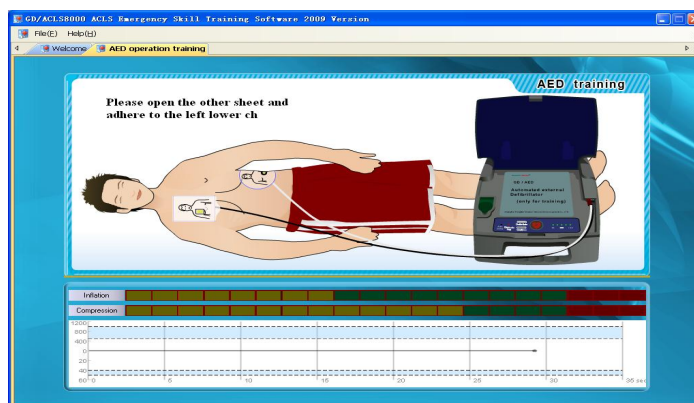
(3) AED usage training

Click  to enter AED training, as following figure:



1、English voice prompts during the entire process

2、Click “” to start operation

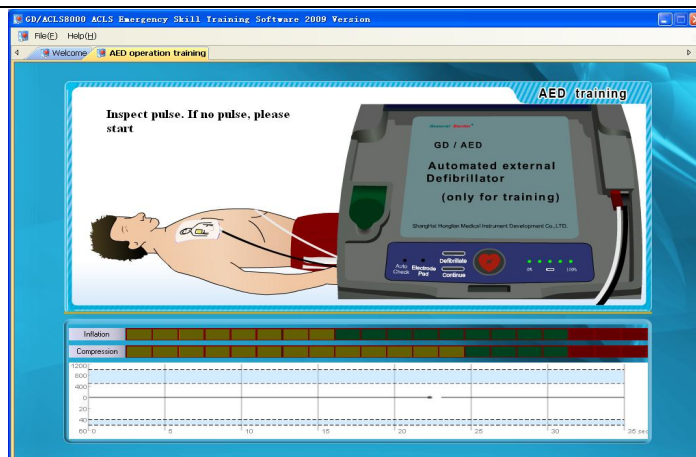


3、If connect to real monitor, there will be ECG

4、AED automatic analysis of heart rhythm

5、Automated charging

6、Click  to discharge



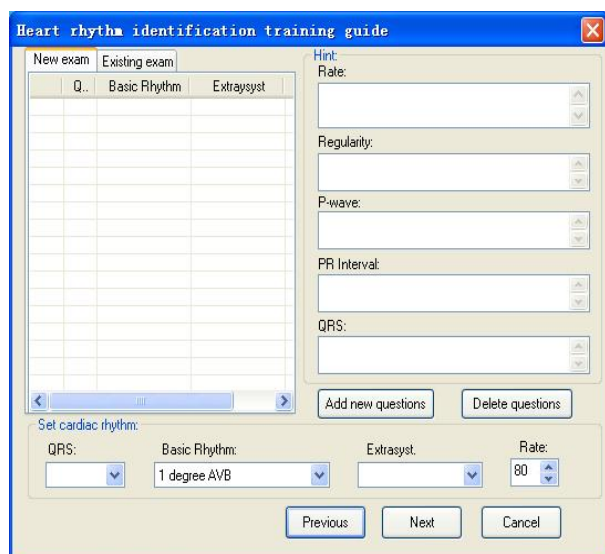
3、 Give one time defibrillation, then 5 cycles of CPR, THE ECG will change

(4)、 Heart rhythm identification training

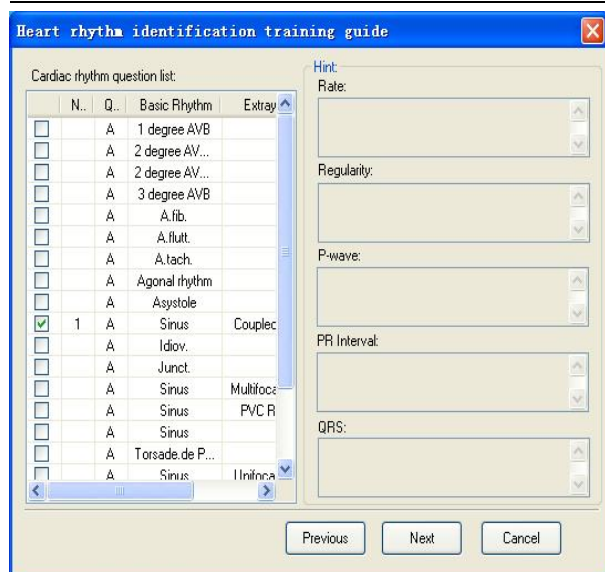


Step 1: click “ ”

Step 2: Edit heart rhythm identification questions, input parameters, click “Add New Questions”, set answers.



Step 3: Edit heart rhythm identification papers



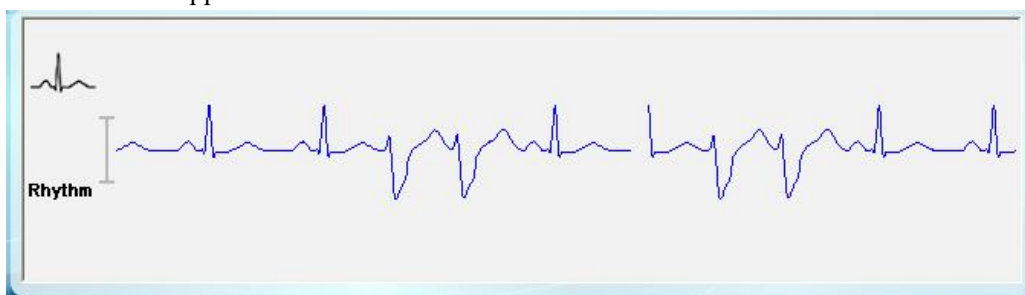
Step 4: Choose questions

Step 5: Click “Finish”

Step 6: Heart rhythm identification training

Features:

1. Main interface appears ECG waveform



2. **Size 1X**: ECG waveform can be enlarged 1times and 2times

3. **Speed: Fast**: Speed can be accelerated

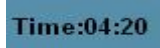
4. **Drag show**: Available of drag display and block refresh display

5. **Freeze**: ECG table grid on the back of ECG





6. : Show result and correct ratio.



7. : Training time counting

8. Can check heart rhythm identification clues

9. Choose ECG name from the pull-down frame



10. Click “Next question”, the reference answer would appear on the last line for a short time



6. Defibrillation machine usage training



Click “ ” to enter main interface

Features: Simulate real defibrillation machine usage, multimedia animation display defibrillation process;



Step 1: set physiological parameters

Step 2: Choose defibrillation times

Step 3: Click “Start” button

Step 4: Click defibrillation machine, display ECG

Step 5: Choose energy value with mouse



Step 6: Click “ ” for charging



Step 7: Click “ ” to discharge

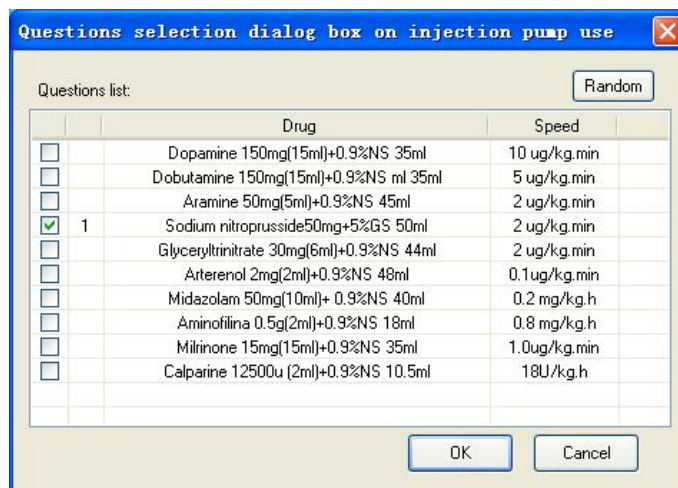
Note: can be used with real and simulative defibrillator and pacemaker, synchronous operation

Step 8: Animation displays log record, defibrillation times and energy, defibrillation success.

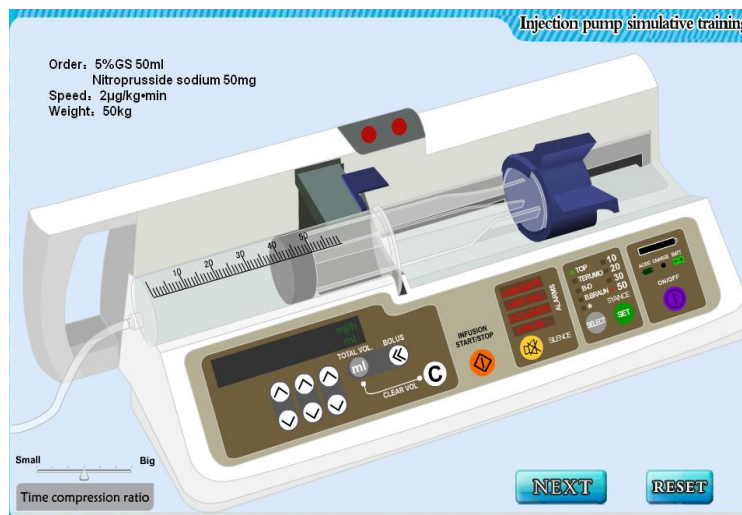
7. Injection Pump Usaging Training



Click “ ” to enter main interface



Step 1: Choose injection drug



Step 2: : On/Off key

Step 3: Input injection speed “  ” via adjusting “  ”

Step 4:  Start/pause injection

Step 5 : Finish injection



8. : Infusion pump usage training

Step 1: Choose injection drug

Step 2: “” Turn-on



Step 3: : Input injection speed

Step 4:  Start

Step 5: Infuse liquid



Step 6: show infused liquid volume

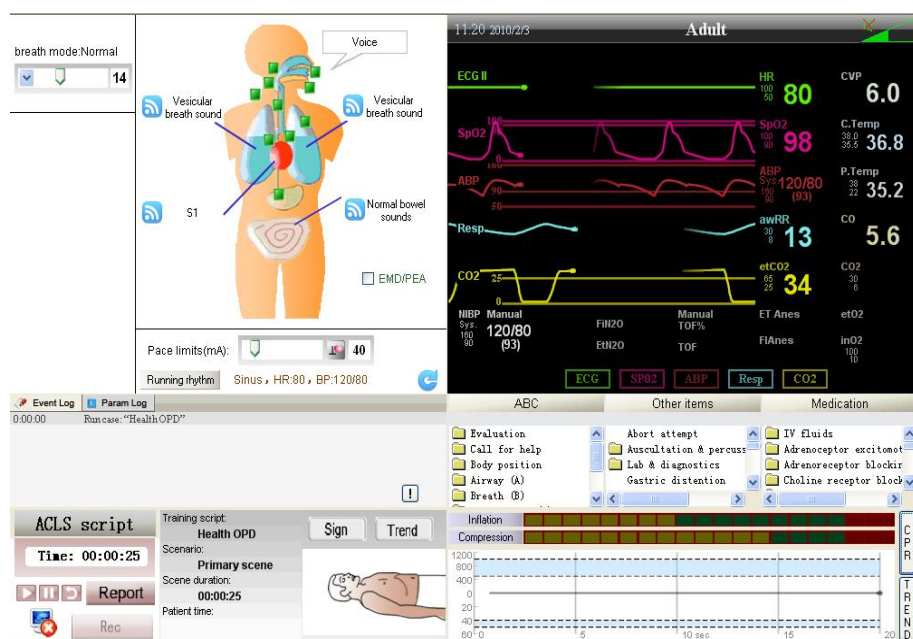
Step 7: Complete infusion  STOPPED

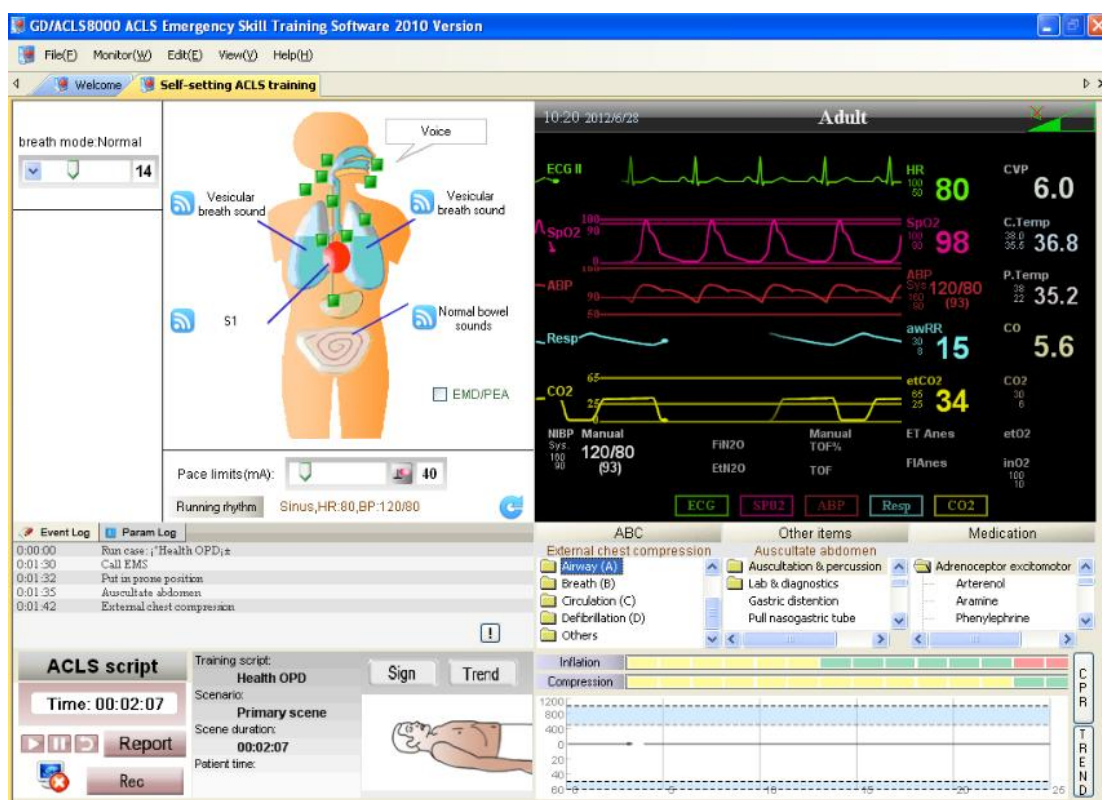


ACLS self-setting scenes

Method: System function—self-setting scenes operation

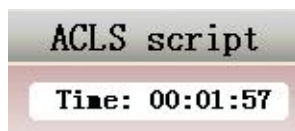
In the self-setting scenes operation, it runs Health OPD cases and can simulate patient conditions.





Features:

1. Case name: display the running case's name and time



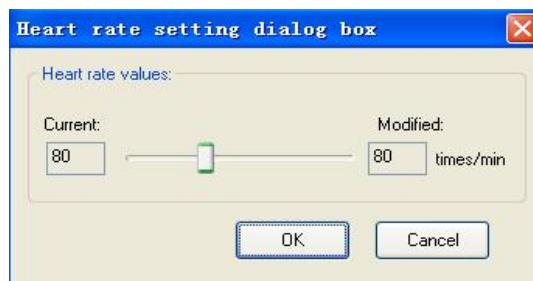
2. Event log: Operation and changes of vital signs can be displayed in this area

Event Log	Param Log
0:00:00	Run case: "Health OPD"
0:02:32	Check airway
0:02:33	Check spontaneous respiration
0:02:35	Check Hemoglobine
0:02:35	Measure glucose

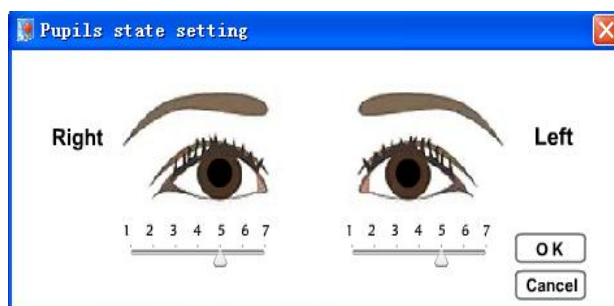
3. Respiration mode change: Drag " " to change respiration frequency
4. Set vital signs parameter: click "Running rhythm" to enter the operation; Manikin ECG contents would change as the change of parameters.



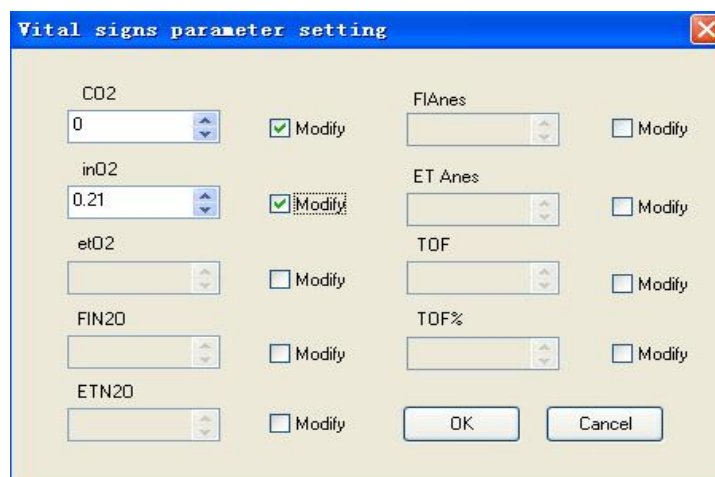
- Heart rate change: Move “” to change heart rate, as following figure:



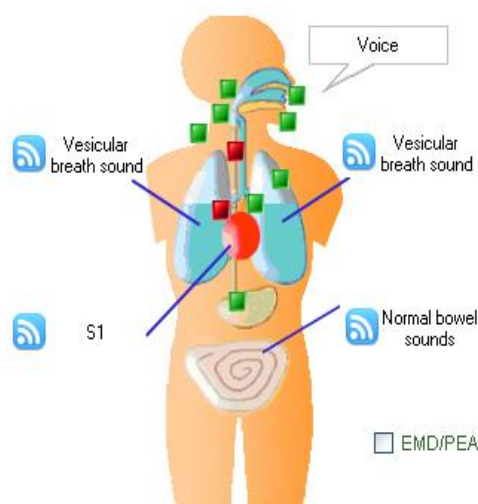
- Saturation of blood oxygen change: move “” to change blood oxygen saturation
- Changes of BP: move “” to change systolic pressure and diastolic pressure
- Changes of body temperature: move “” to change central temperature and exterior temperature values
- Changes of CO2 in end expiration: move “” to change CO2 values in end expiration
- Changes of central venous pressure: move “” to change central venous pressure
- Changes of cardiac output: move “” to change cardiac output
- Pupil changes : shift “” to change bilateral pupils, manikin pupils can be in dilated and normal states



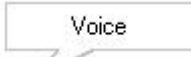
- Changes of other vital signs: click  修改 to modify physiological signs, as following figure:

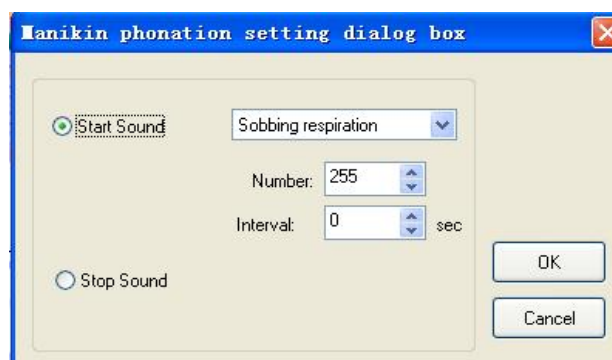


5. Simulate airway management: click “” to choose different states, red colors indicates it has been choosing, green color indicates in normal states; can simulate the normal and abnormal states of gullet, throat, neck, musculus masseter, tongue, main airway, right airway, left airway, left chest; show as following figures, left pneumothorax;



6. Auscultation: control hardware via software; act real auscultation on manikin via electronic auscultator
- Voice: have 45 kinds

Click “” to change voice kinds, start manikin voice, stop voice, change times and interval time

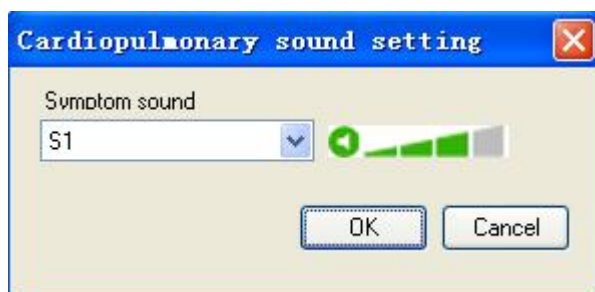


- Bilateral vesicular breath sound: 24 kinds of respiration sound

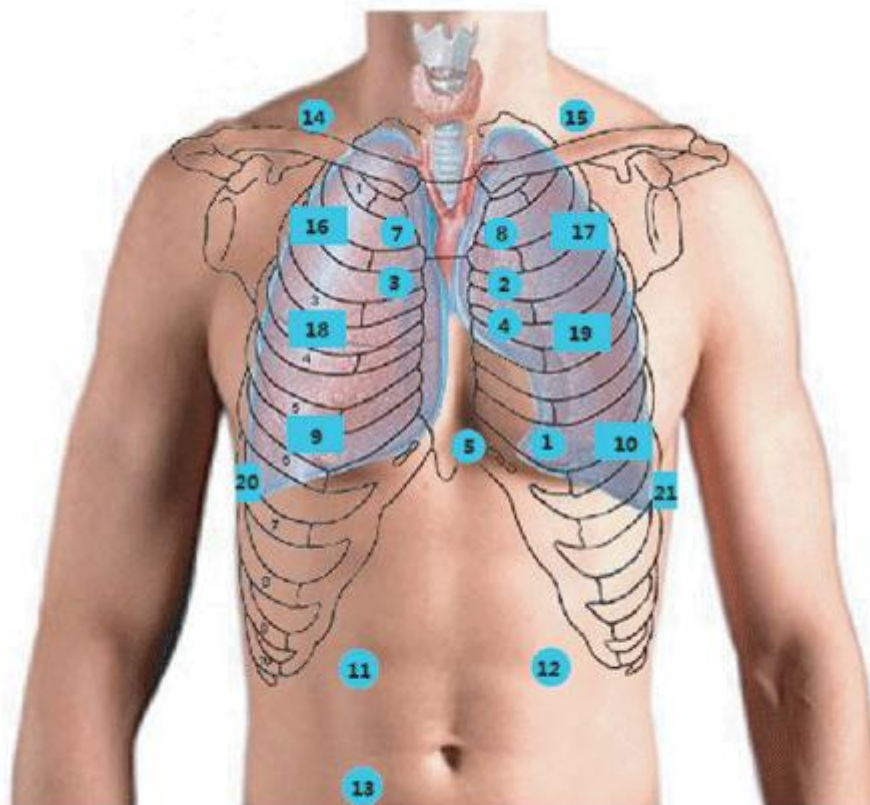
Click “ Vesicular breath sound” can change one side respiration sound; if you need to change bilateral respiration sound, it needs to change two times



- Heart sound: 42 kinds of heart sound
- Click “ S1 ” to change heart sound kinds and volume via pull-down menu



- Bowel sound normal, active, fetal heart sound, vascular murmur
Attach auscultation site picture:



Heart sound list:

Position No.	Medical name
1	S1, S3, S4, ST, Sinus Bradycardia, frequent PVC, Bigeminy, Trigeminy, Atrial fibrillation, Enhanced S1, Decreased S1, Pendular rhythm, splitting of S1, Protodiastolic gallop, Late diastolic gallop, Summation gallop, Diastolic quadruple rhythm, Opening snap, pericardial knock, tumor plop sound, Mid-late systolic coick, Read' s syndrome, Mitral incompetence, Mitral stenosis
2、 3	S2, Enhanced S2, Decreased S2
2	Physiological splitting of S2, General splitting of S2, Fixed splitting of S2, Paradoxical splitting of S2, Pulmonic ejection sound, ASD, Graham Steell murmurs, PDA
3、 4	Aortic ejection sound, aortic valve stenosis
2、 4	Tetralogy of Fallot
4	VSD
2、 4、 5	Physiologic murmur
1、 3、 4	Aortic incompetence
1、 4、 5	Pericardial friction rub

Respiration sound auscultation list (24pcs)

Medical name	Auscultation position No.
Vesicular breath sound	9、 10、 16、 17、 18、 19、 20、 21
Bronchovesicular breathing sound	7、 8、 14、 15
Tachypnea	9、 10、 16、 17、 18、 19、 20、 21
Bradypnea	9、 10、 16、 17、 18、 19、 20、 21
Kussmaul breath	9、 10、 16、 17、 18、 19、 20、 21

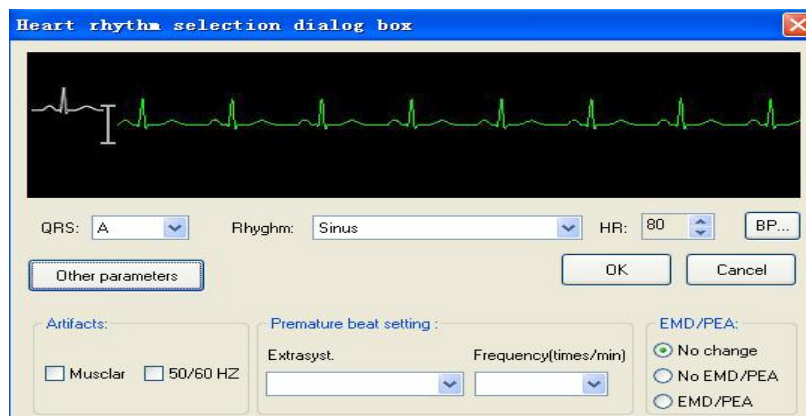
Cheyne-Stokes breath	9、10、16、17、18、19、20、21
Biots breath	9、10、16、17、18、19、20、21
Sighing breath	9、10、16、17、18、19、20、21
Weakened or absent vesicular breath sound	9、10、16、17、18、19、20、21
Enhanced vesicular breath sound	9、10、16、17、18、19、20、21
Cogwheel breath sound	9、10、16、17、18、19、20、21
Coarse breath sound	9、10、16、17、18、19、20、21
coarse crackles	7, 8
Medium crackles	9、10、16、17、18、19、20、21
Fine crackles	9、10、16、17、18、19、20、21
Velcro crackles	9、10、16、17、18、19、20、21
Crepitant rale	9、10、16、17、18、19、20、21
Sibilant rhonchi	9、10、16、17、18、19、20、21
Sonorous rhonchi	7、8
Bronchophony	9、10、16、17、18、19、20、21
Pectoriloquy	9、10、16、17、18、19、20、21
Egophony	9、10、16、17、18、19、20、21
Strengthened whispered voice	9、10、16、17、18、19、20、21
pleural friction rub	9、10、20、21

Abdominal auscultation list

Bowel sound normal	13
Bowel sound	13

active	
Bowel sound absent	13
Normal fetal heart sound	13
Vascular murmur	11, 12

7. Change heart rhythm: click “” can change heart rhythm



8. Defibrillation and pacing: can be used with real defibrillator and pacemaker



: Need pacing



:Do not need pacing

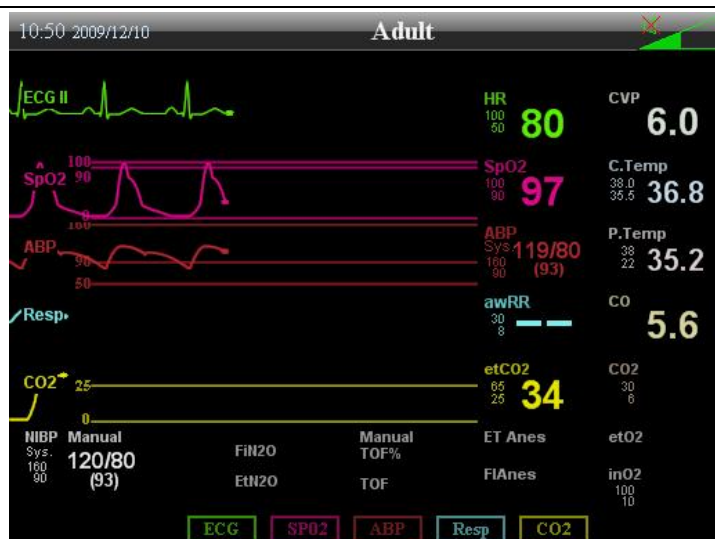
Show as: 0:21:54 No pacing

Change pacing limiting value: shift “”

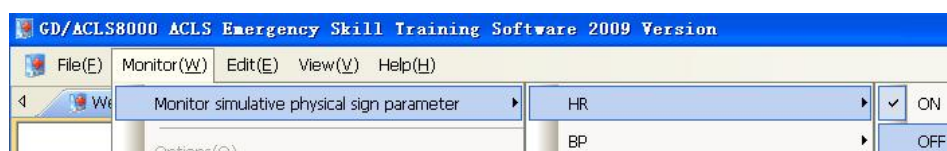
Pace limits(mA):   40

9. Monitor

- Display all vital signs; ECG would change as vital signs change, show as following fig.



- Can change the display content of monitor



10. Manikin animation display

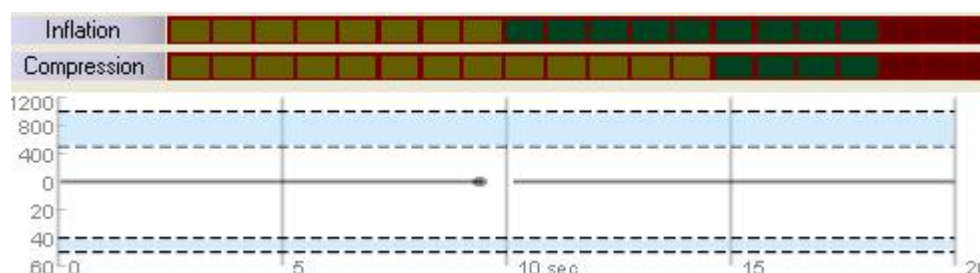
- Carotid artery examination: carotid artery pulse is in line with heart rate; carotid artery pulse strength is related to BP; systolic pressure >70mmHg, strong carotid artery pulse; 60mmHg<systolic pressure <70mmHg, weak carotid artery pulse; systolic pressure <60mmHg, no carotid artery pulse; it would show on computer, if you can touch carotid artery pulse (show as following fig.)



- Open airway: as following fig.

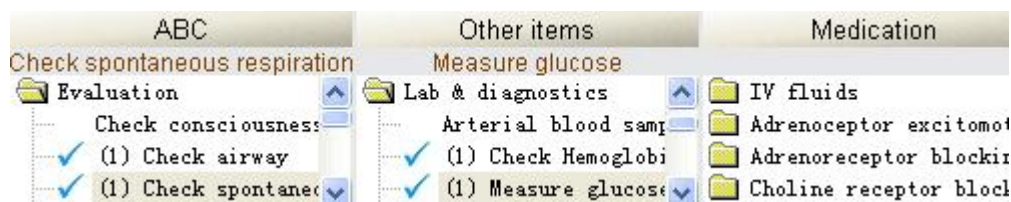


11. CPR: Can act CPR, synchronously display inflation and compression depth and bar code



- #### 12. Treatment measures: including rescue measures and administration project; you can directly choose treatment projects if some treatment measures can be operated on manikin but without respond on

computer.

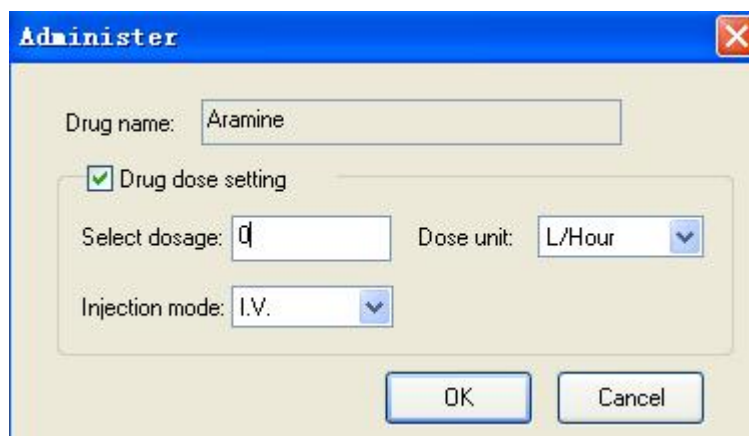


For example: Administration

Step 1: Choose drug name

Step 2: choose drug dose, unit and injection mode

Step 3: Click “confirm”



13、Lister to the report

Click “**Report**” can display operation process and pathogenetic condition result

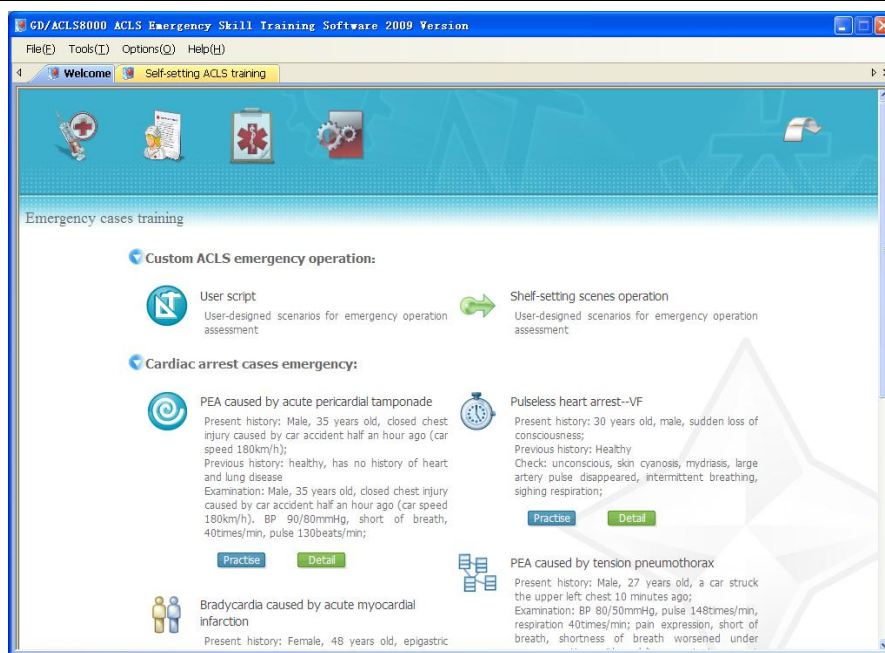


Professional Emergency Cases Training



Method 1: Click “**Report**” to enter the interface

Method 2: Click system function---Professional emergency cases training-directly enter the requiring content



Cases training content:

1. Custom ACLS emergency operation: Act training operation for the scripts that have been edited
2. **System emergency cases:** System memory cases; choose different cases via clicking the following diagram names;

[\[Cardiac arrest\]](#)[\[Bradycardia\]](#)[\[Tachycardia\]](#)[\[Chest pain\]](#)[\[Poisoning and overdose\]](#)[\[Metabolic disease and environmental damage\]](#)[\[Breathing difficulty\]](#)[\[Brain injury\]](#)

Asystole case: PEA caused by acute PT, Pulseless heart arrest-VF, PEA caused by tension pneumothorax

Bradycardia cases: caused by acute myocardial infarction

Tachycardia cases: Acute coronary syndrome- unstable angina, unstable tachycardia, acute coronary syndrome-anterior septal wall myocardial infarction

Chest pain cases: PEA caused by PT

Metabolic disease and environmental disease: DMKA

Difficult breath cases: Acute severe bronchial asthma attack, airway foreign body obstruction, respiration failure

Head injury case: Epidural hematoma, cerebral apoplexy

e.g. 1: System storage emergency cases



PEA caused by acute pericardial tamponade

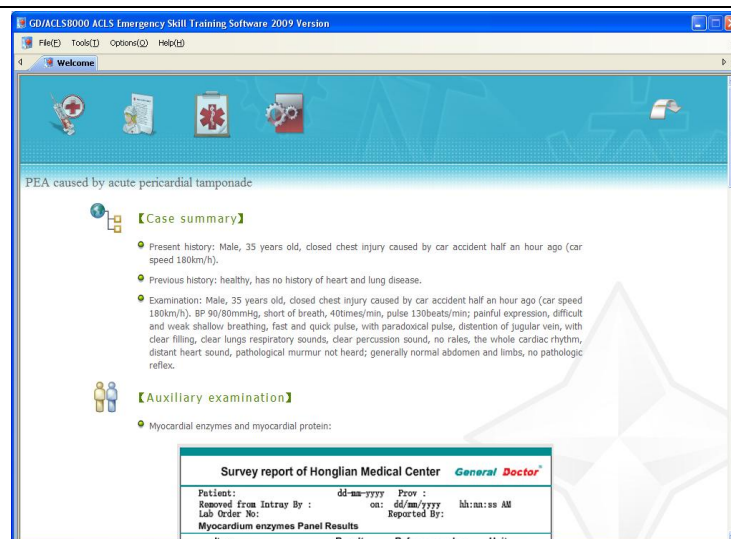
Present history: Male, 35 years old, closed chest injury caused by car accident half an hour ago (car speed 180km/h);
Previous history: healthy, has no history of heart and lung disease
Examination: Male, 35 years old, closed chest injury caused by car accident half an hour ago (car speed 180km/h). BP 90/80mmHg, short of breath, 40times/min, pulse 130beats/min;

[Practise](#)

[Detail](#)



Click “  ” would appear detailed cases features and emergency operation keypoints

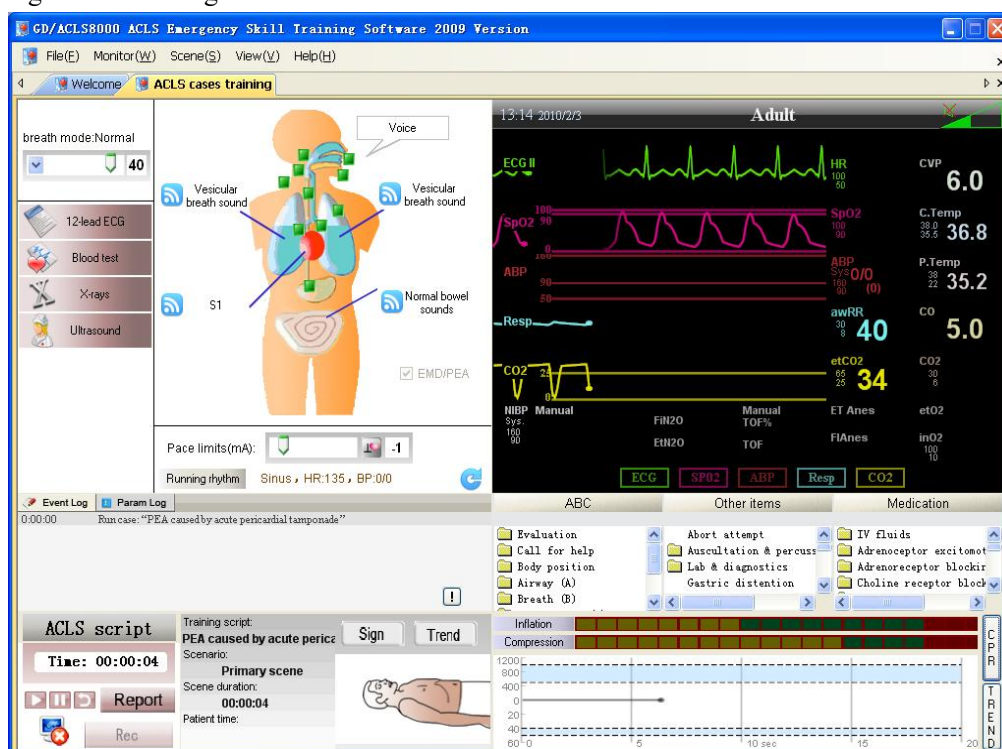


Pull-down the main interface to directly observe all kinds of vital signs and treatment plan

Click “Training” to enter the following interface (as following fig.)

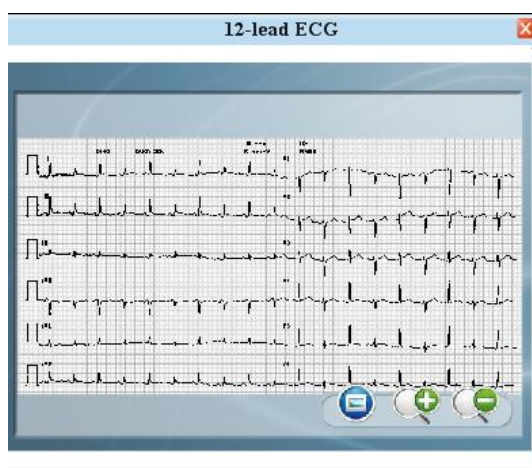
Features:

1. Can observe vital signs: respiration mode, active ECG, active BP value, breathing frequency, saturation of blood oxygen, etc, can observe vital signs parameters via the monitor, can change voice volume in the scenes;
2. Can act all kinds of treatment measures
3. Vital signs would change with treatment measures



Check auxiliary examination: 12-lead ECG

Check chemical examination result

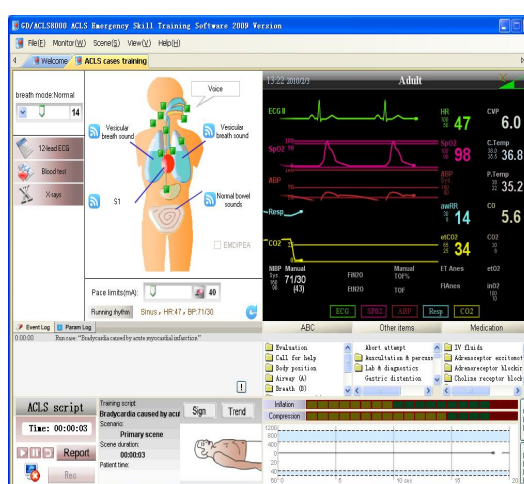
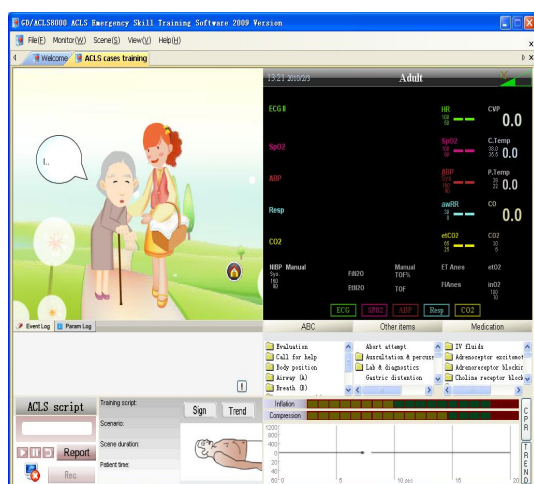


Survey report of Honglian Medical Center <i>General Doctor</i>			
Patient:	dd-mm-yyyy	Prov :	
Removed from Inray By :	cm: dd/mm/yyyy	hh:mm:ss AM	
Lab Order No:		Reported By:	
Myocardium enzymes Panel Results			
Item	Result	Reference value	Unit
LDH	584	95-245	U/L
LD1/LD2	/	<0.7	-
CK	417	10-174	U/L
CK-MB	251	0-26	U/L
Mb	/	6-85	μg/L
cTnT	10.5	0.02-0.13	μg/L
CTNI	15.7	<0.2	μg/L
FABP	/	<5	μg/L

e.g. 2: Bradycardia caused by acute myocardial infarction



click “ ” to enter the following interface



Professional emergency cases assessment



Method 1: click “ ” to enter the interface (as following fig.)

Method 2: click system function-professional emergency cases assessment—directly enter the required content

Content is in line with professional emergency cases training

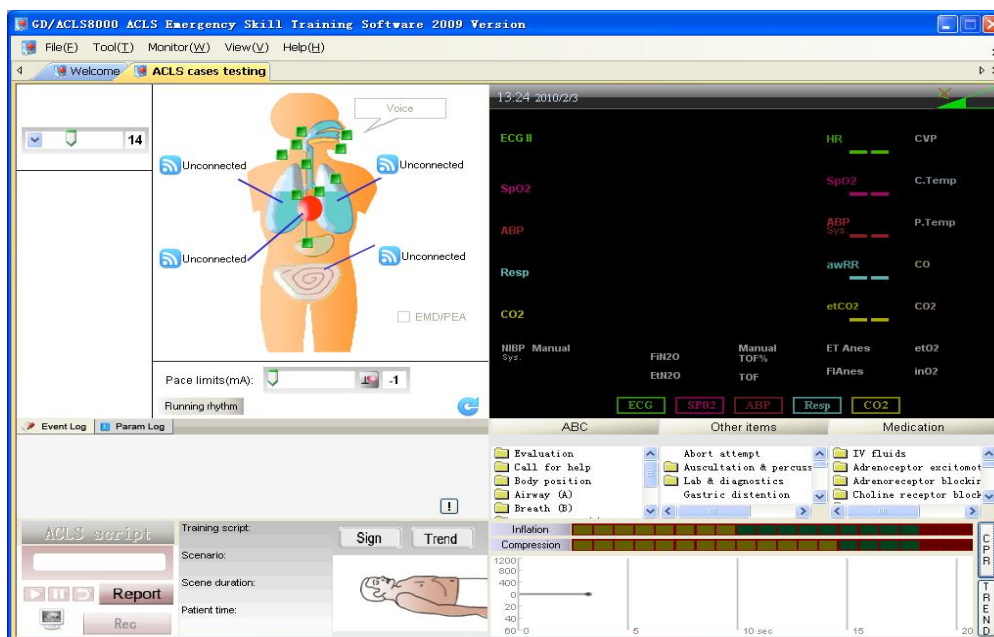
Can act system storage emergency cases and user's self-editing cases

Choose case, click “assessment” to enter the following interface (as following fig.)

Features:

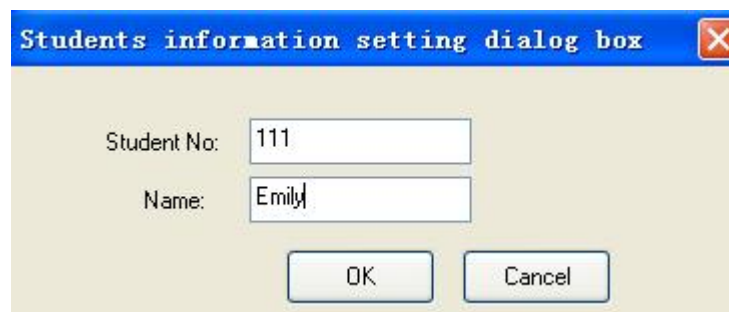
1. Can set information of exam students
2. Can check patient condition introduction
3. Check patient vital signs change via monitor

4. can check patient auxiliary examination
5. Act treatment for patient, conditions would change according to treatment measures.



Assessment procedures:

1. Establish a file in any disk to save assessment result
2. Click “Tool”—“Choose students for assessment”—students information setting dialog box, input students information



3. Click “Confirm”, system would connect to manikin automatically for simulative exam
4. Open ACLS emergency operation log in “Document” and save it
5. Open the submitted students operation log in “Tool” bar
6. Save result: open “Document”—“ACLS emergency operation log saving”, save to the pre-set files, as following fig.



7. Check result sheet, save and directly enter the following figure, can choose students name, check exam result, and evaluate the result, write marks, then submit; as following fig.

GD/ACLS8000 ACLS Emergency Skill Training Software 2009 Version

File(E) Help(H)

Welcome ACLS assessment log package

ACLS8000 Emergency Training Operation Log

Return Manikin event physical signs

Student information

Name: Emily ID: 111 Test result: None

Remarks: none...

Submit

Manikin event

0:00:00 Run case: "PEA caused by acute pericardial tamponade"

0:00:04 Put in lateral position

0:00:05 Put in prone position

0:00:05 Put in supine position

0:00:07 Check Hemoglobine

0:00:07 Check Hemoglobine

0:00:11 Complete script operation

Simulative monitoring physical signs

Time	HR	SBP	DBP	CVP	CO	RR	EtCO2	TEsoph	TBlood	SPO2	EtO2	InO2	FiN2O	EtN2O	FiAnaest	EtAnaest	TOF	TOF%
0:00:00	135	0	0	6.0	5.5	40	34	36.8	35.2	96								

System setting



Method 1: Click “ ” to enter the interface (as following figure)

Method 2: Click system setting to directly enter the content

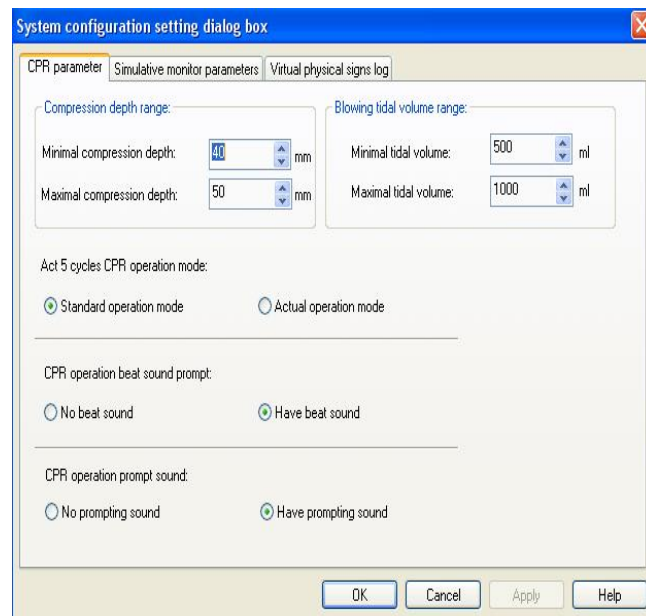
Content includes: System configuration setting, Amend lecture logging password



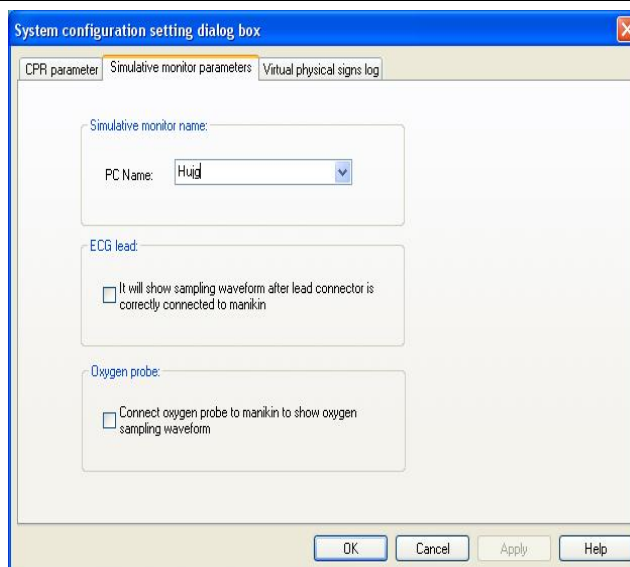
Click “ ” to enter the following interface (as following figure)

Features:

1. Can set the parameters of CPR, simulative monitor, simulative body signs log, then click “Confirm”
 2. This is the system default technical parameters
 3. After setting the parameters, the corresponding training operation would change accordingly
- CPR parameters setting: can set compression depth range, inflation volume, CPR 5 cycles operation mode, CPR operation prompting sound

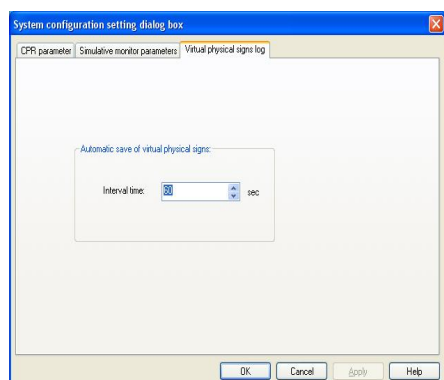


Simulative monitor parameters: can set monitor would display on which computer, display ECG lead and blood and oxygen probe



Simulative body signs log: set body signs and Automatically save the interval time

Click “ ” to enter the following interface(as following fig.); can modify logging password;



Advanced Emergency Training Script Editing Software

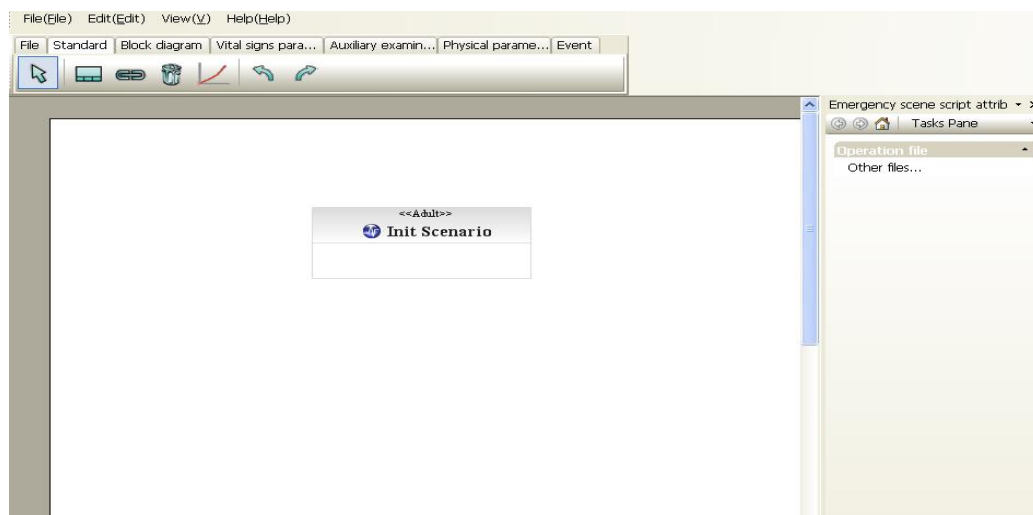
System function introduction

1. Simulate patient conditions developing process
2. Setting patient physiological parameters
3. Set treatment process and post-treatment effect
4. Give training and assessment according to different pathogenetic condition

Logging: same as other software logging

System main interface introduction

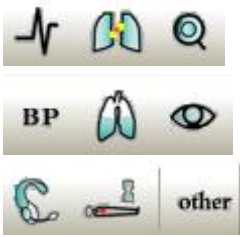
The system interface includes three parts: the upper parts show Menu bar and Tool bar; the central area is cases designing area; right side displays Task panel, consists of script name that system comes with and current operation document lists;



1. "File(F)" menu introduction

"File" menu	Short-cut key	Function
New file		Open new script editing window, display "Initiator Scene" in the view
Open...		Open the existing script
Save		Save the current designed script
Save as...		Save the current script with another name
Print...		Print the current opened script
Print preview		Print preview the current opened script
Printer installation...		Install new printer
Exit		Exit utility program

2. "Edit(E)" menu introduction:

“Edit” menu	Short-cut key	Features
Withdrawl		Withdrawl user’s operation
Repeat		Restore the previous operation
Script primer		Edit patient history and physical examination
New scene		Creat new cases in the view
Animation scene		Respiratory system emergency-I, Respiratory system emergency-II, the first time BLS emergency, Non-first time BLS emergency, VF/Pulseless VT scene-I, VF/Pulseless VT-II,Pulseless electrocardial activity scene, ventricular asystole, angina, Bradycardia, tadycardia, actue stroke
Physical parameters		ECG, airway management, heart, lung and bowel sound, BP, respiration mode, pupils, manikin voice, patient time, physiological parameters signal.....
Physical parameters		Pacing setting and tredancy operation setting
Add frame		Single event frame, combination event frame, selection event frame
Event column		Pulse examination, CPR operation, time, shock, defibrillation, pacing, ABC event, other items events, administration event
Custom event editing		ABC event editing, other events editing, administration event editing
Connection operation		Connecting different Frames to establish relationship

Tendency editing		Editing physiological parameters
Creat new page		Creat new view area
Delete blank page		Delete the blank page
Delete		Delete cases, connection ling and elements in the scene

3. “View(V)” menu: control the display and hide of tool bar and task panel

3. “Help(H)” menu: show the help information of utility program

Cases editing introduction

1. Scene introduction: one “scene” represents the patient vital signs for a period of time



The whole cases includes two part: “Adult initiator scene” (represents name) and pathogenetic condition in the below area, can set a serial of physiological state: breath, heart rhythm, saturation of blood and oxygen; the dash line indicates the frame can be enlarged;

2. Introduction of event frame: Event represent medical order and treatment measures, event will be wrote in the event frame; choose different event frame according to treatment plan;

Click “Frame gram”

✧ “”single event frame, appear “”; Note: can only set one treatment measure; finish this treatment to enter next period of illness;

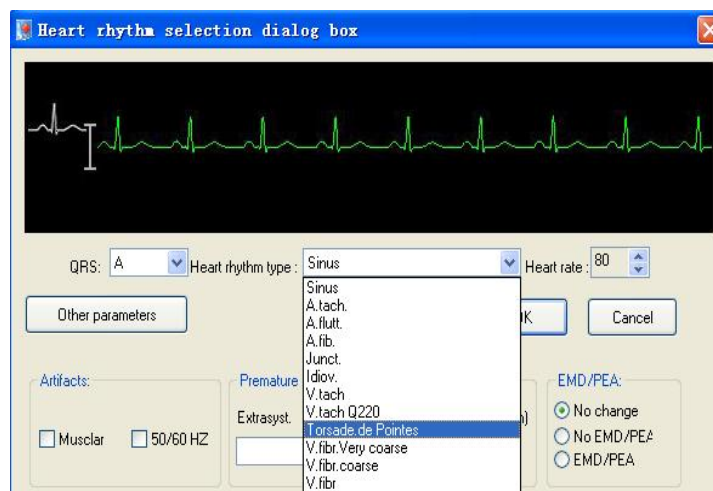
- ✧ “” selection event frame, appear “”, Note: can set multiple treatment measures; only need to make one treatment to enter next period of pathogenetic condition

- ✧ “” combination event frame, appear “”; Note: can set multiple treatment measures, need to finish all the treatment, then to enter the next period of pathogenetic conditions;

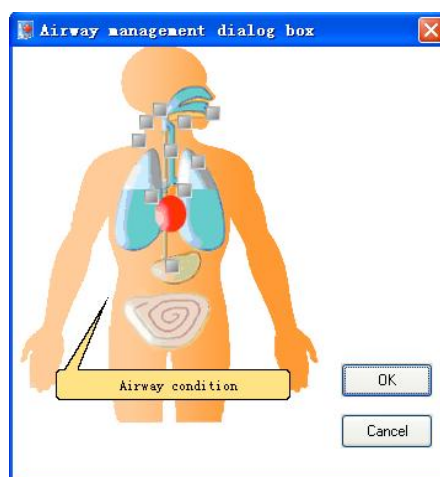
Write event in the event frame, then creat new cases via connection 

3. Edit pathogenetic condition

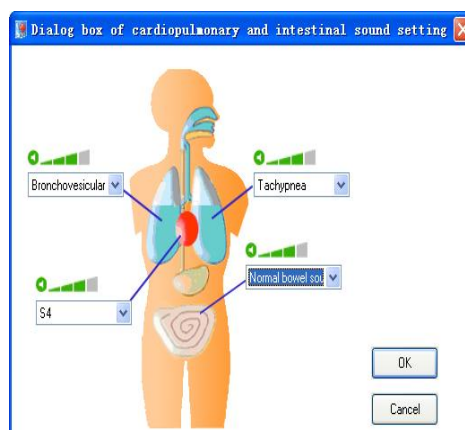
- 1) “” can choose heart rhythm, heart rate, ECG, muscular fibrillation, premature beat type, premature beat frequency, Pulseless electrocardial activity



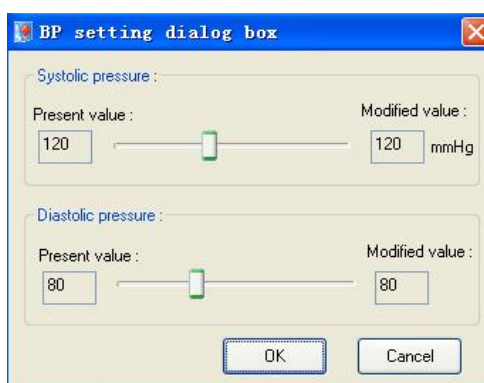
- 2) “” can set the normal and abnormal state of maxillary joint, tongue, cervical part, pharyngeal portion, laryngopharyngeal recess, main airway, left bronchus, right bronchus, left chest, gastrointestinal decompression



- 3) “” : can set heart sound, respiration sound, bowel sound, bilateral lung can set 24 kinds of respiration sound; chest can set 42 kinds of heart sound, abdominal part can set 5 kinds of bowel sound; can set volume separately;



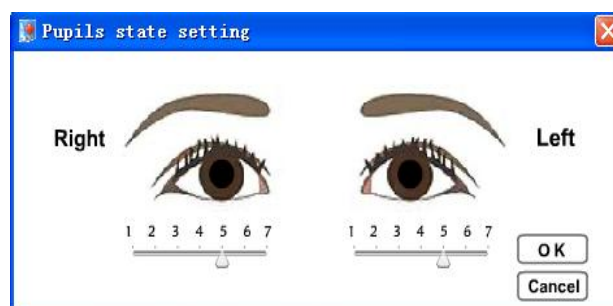
- 4) “” set BP value; range: systolic pressure:0-300mmHg, diastolic pressure: 0-250mmHg



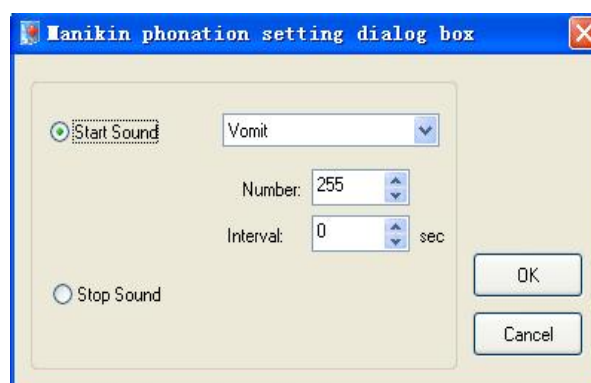
- 5) “”: set respiration mode and breathing times; breathing mode: normal breathing, Kussmaul breath, cheyne-stokes breath, Biot’s respiration, periodic respiration, breathing holding



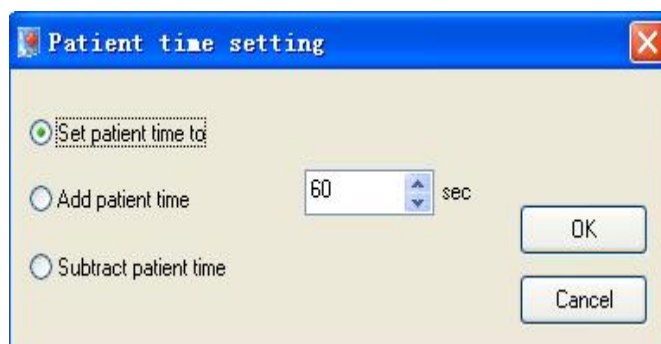
- 6) : can set bilateral eyes’ diameter change



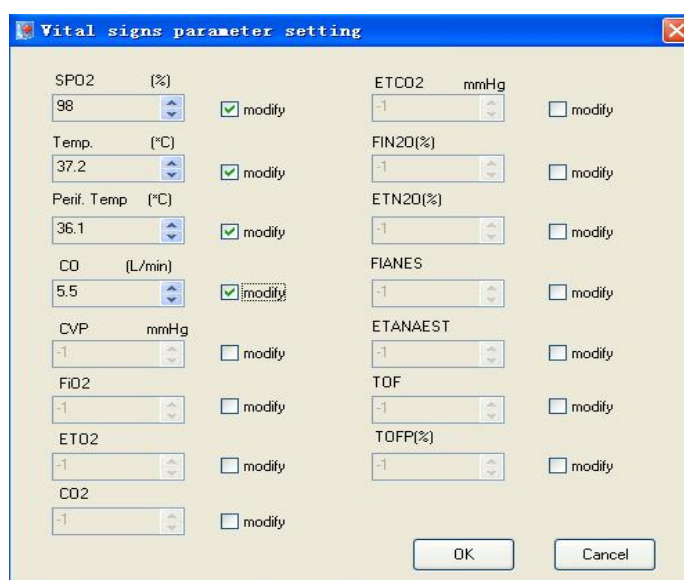
- 7) “” can set manikin voice, totally 45 kinds; can set voice interval and duration time.



- 8) : set patient time



- 9)  "other" can set other physical body signs parameters; click "Modify" to modify parameters

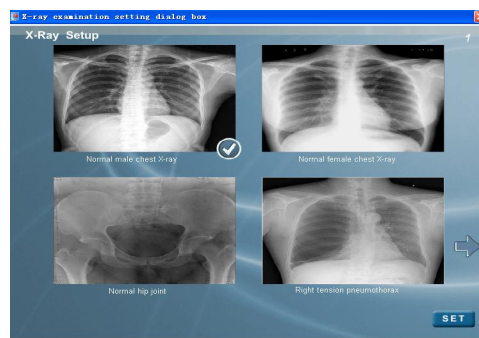
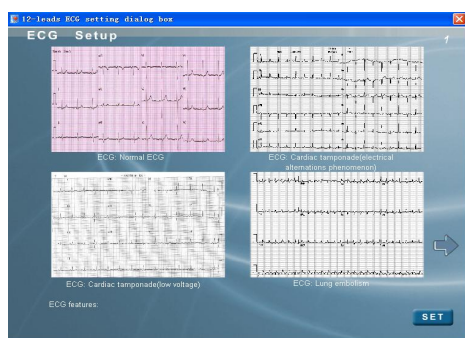


4. Withdrawl the last step operation

Click "Withdrawl" to restore the last step operation

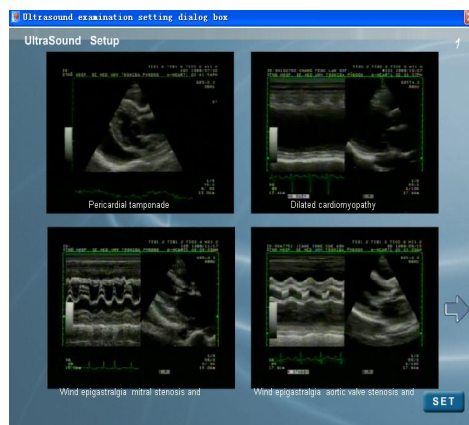
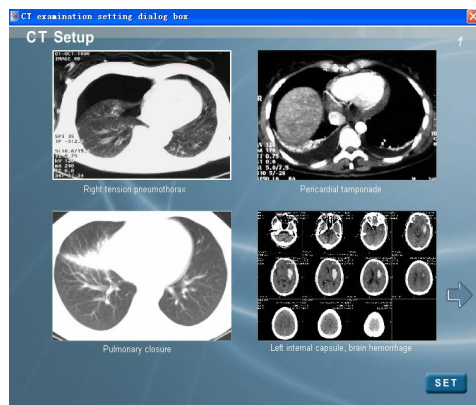
5. Edit auxiliary examination: as the reference material of cases; fill into the scene frame;

- 1)  : 12-lead ECG; totally 30 pages, available Available of page turning
- 2)  : X-rays, totally 19 pages, of page turning

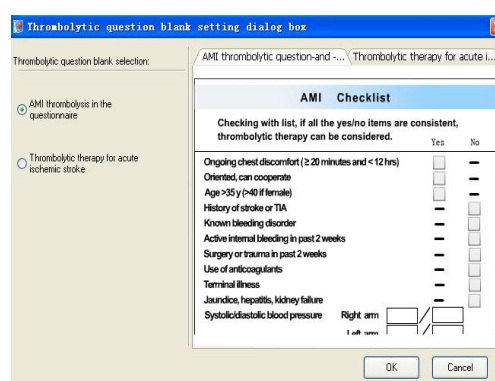
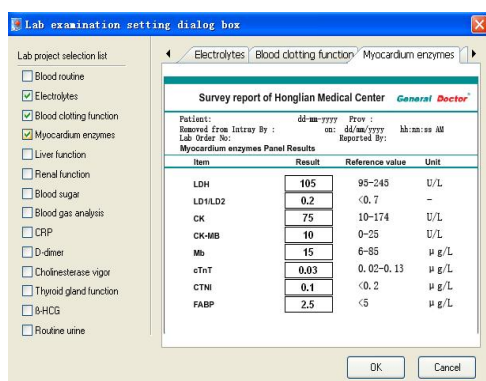


3) : CT examination, a total of 14 Pages, available of page turning

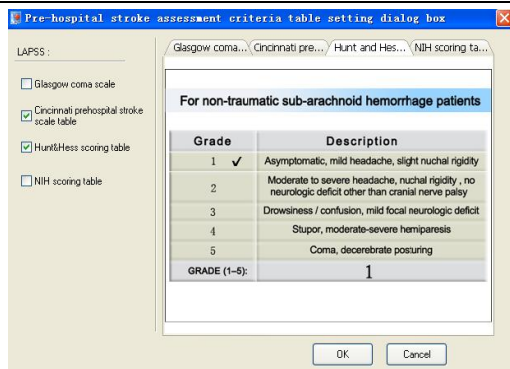
4) : Ultrasound examination, a total of 15 pages, available of page turning



5) : laboratory examination 6) : Thrombolysis question-and-answer sheet

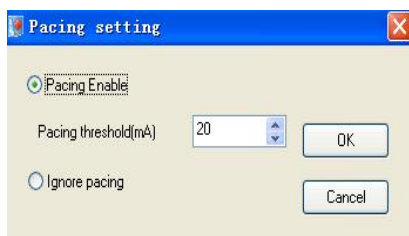


7) : Pre-hospital stroke evaluation standard



6. Set "Physical parameters", fill in the scene frame

- 1) “” pacing setting: system default is “be able to pacing”; Pacing current is 20mA, changeable current; if “Ignore current”, the manikin can not act pacing
- 2) “”: Tendancy setting

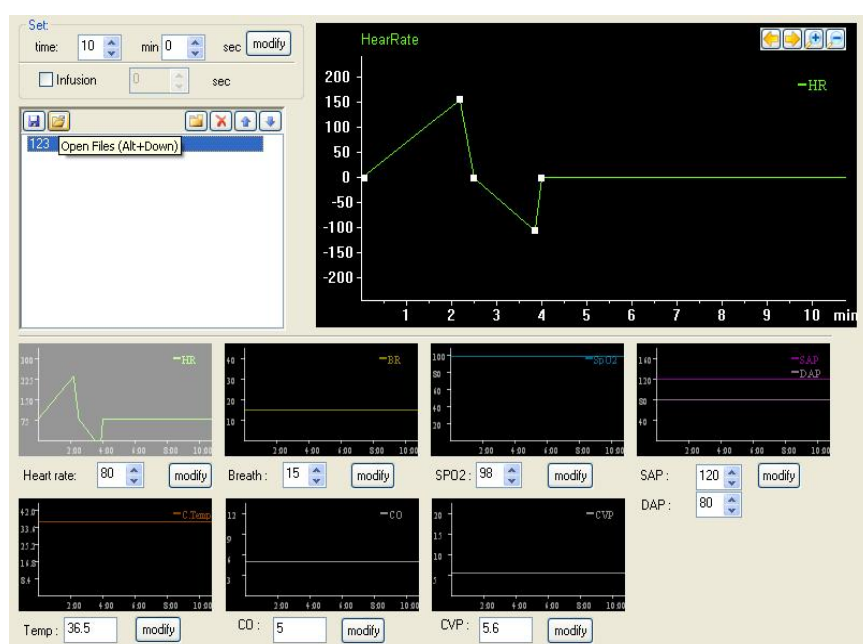


2) Add tendency operation setting: tendency represents a slow change process of vital signs in a scene, which is finer and more exact than the whole process changes of vital signs;

Editing tendency before adding tendency operation

Method: “Edit”---“Tendency editing”

Can set tendency time, heart rate, respiration, blood oxygen, BP, body temperature, cardiac output, central venous pressure, and other physical parameters; as following fig.



Step 1: click “” to create a new file name

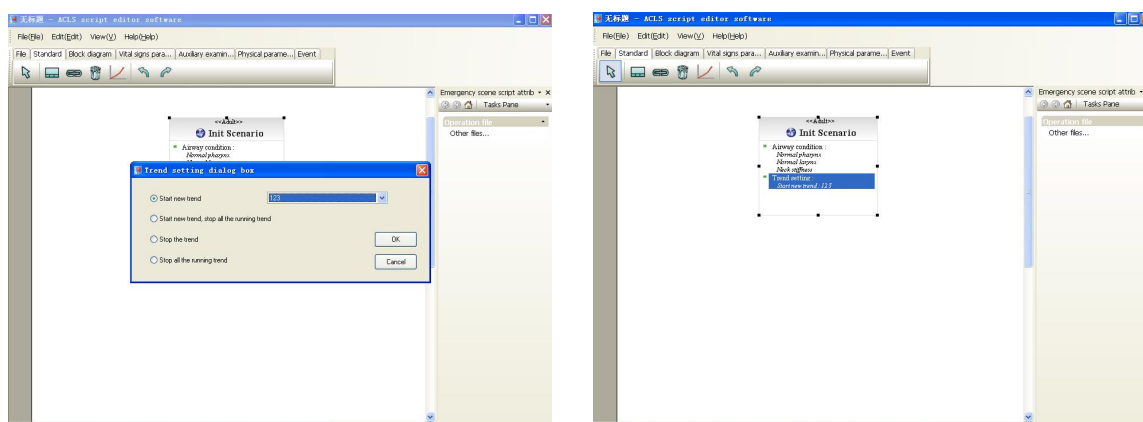
Step 2: according to pathogenetic condition need, modify time

Step 3: Click “Heart rate”, heart rate display turn dimmed, modified parameters show on the upper right screen; X-axis represents setting time, vertical axis represents modified parameters, basing on the original physical parameters, move upward and downward ;

Step 4: click “” to save

Add the physiological tendency to cases after finishing editing

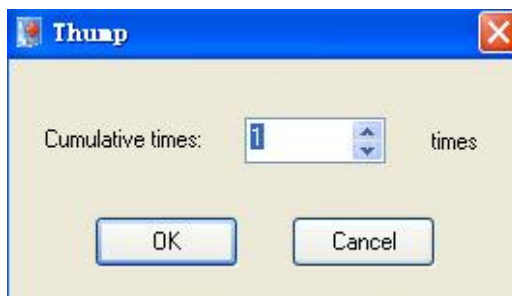
Choose required physiological tendency name



7. “Event” introduction

a) Pulse examination

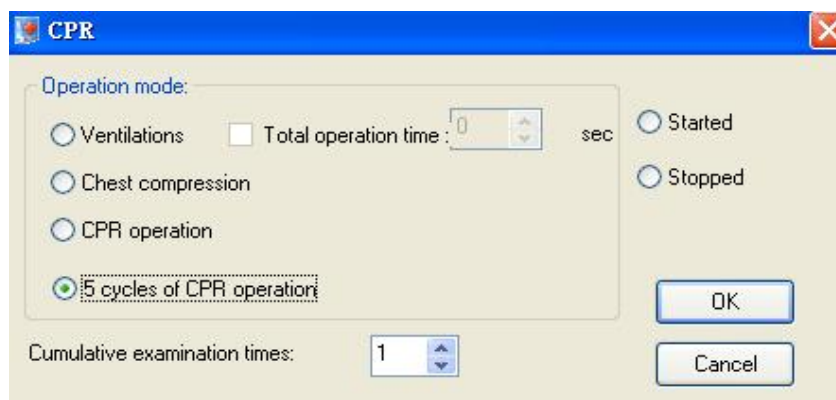
Click “”, then click event frame(as following figure) to set pulse examination times; Finally click “Confirm”;



b) CPR

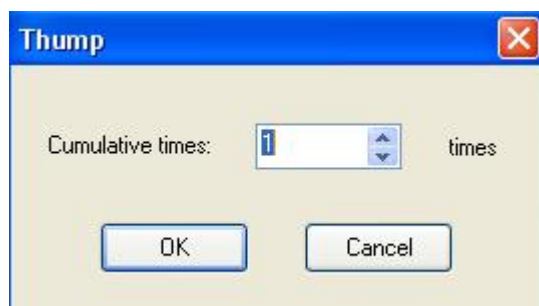
Click “”, then click event frame (as following figure).can set CPR operation mode
Operation mode: only inflation, only chest compression, CPR operation and 5 cycles CPR operation; the former 3 kinds of mode can set “Operation cumulative time”, the fourth kind of mode do not need to set “Operation cumulative time”.

System default “5 cycles CPR operation mode”



c) Shock

Click “”, then click “Event frame” to set cumulative times



Set Thump, indicating set cardiac thump to patient to restore heart beats

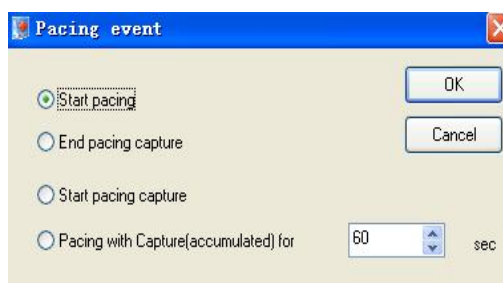
d) Defibrillation

Click “” ---click “event frame”,
Set defibrillation cumulative times
(As following fig.)



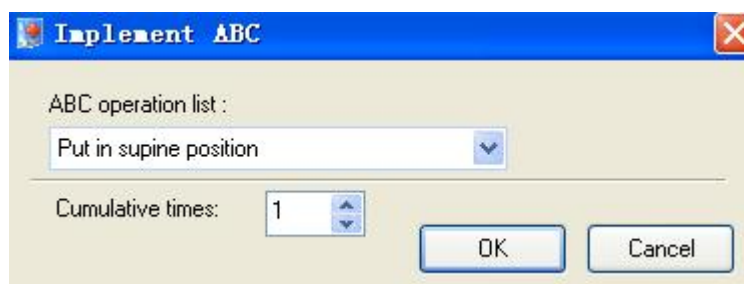
e)Pacing

Click “” ---“Event frame”, can set pacing
physiological parameters (as following fig.)



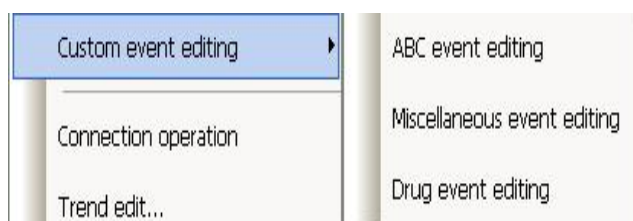
f) There are 2 ABC items in the event

1. Click “”, then click “Event frame”, can set different operation, attaching the
operation list:



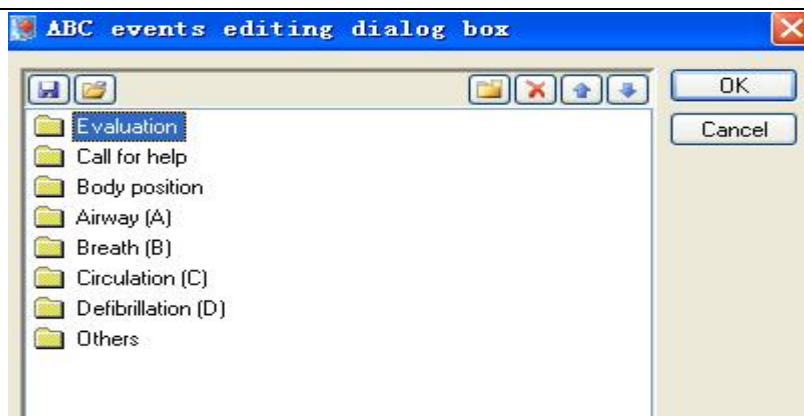
Edit event according to pathogenetic condition

Custom event editing (as following fig.)



e.g.: ABC event editing

Open ABC event editing dialog frame (as following fig.)



save



read file



New file



delete

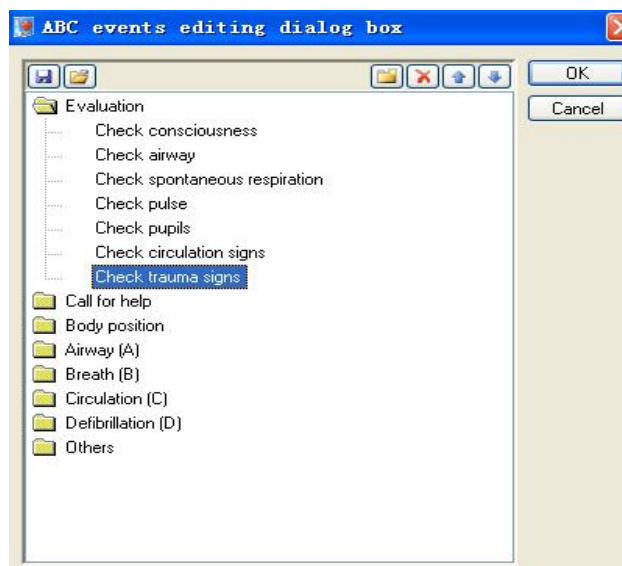


Move to previous step



Move to next step

- ✧ Double click event item, e.g.: start
- ✧ Click “”, click “Operation”—click “breathing machine ventilation” (as following fig.), click “Confirm”;
- ✧ Click the Event, then click “Cancel” to cancel the event
- ✧ ABC event editing, other event editing and administration event editing, all the three operation are consistent;

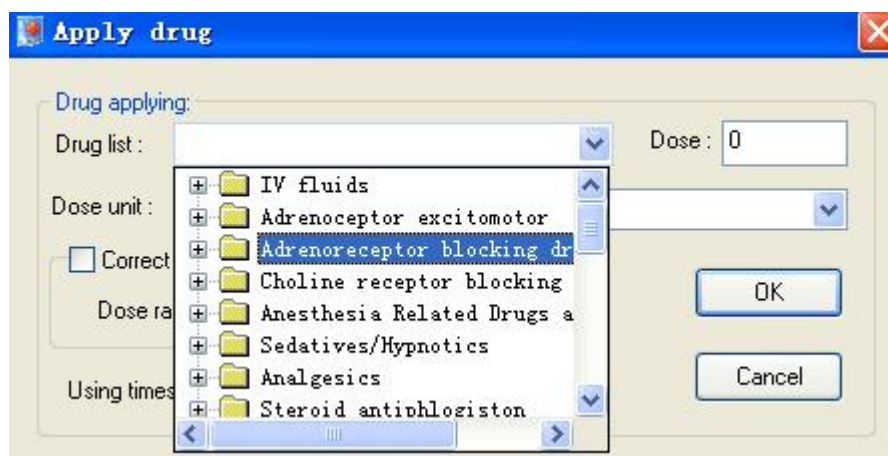


- g) Click “” to set different event (as following fig.)



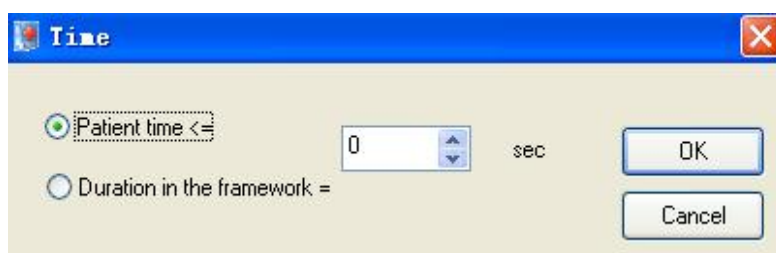
h) Drug

Click “”, then click “Event frame” to choose different treatment drug (as following fig.)



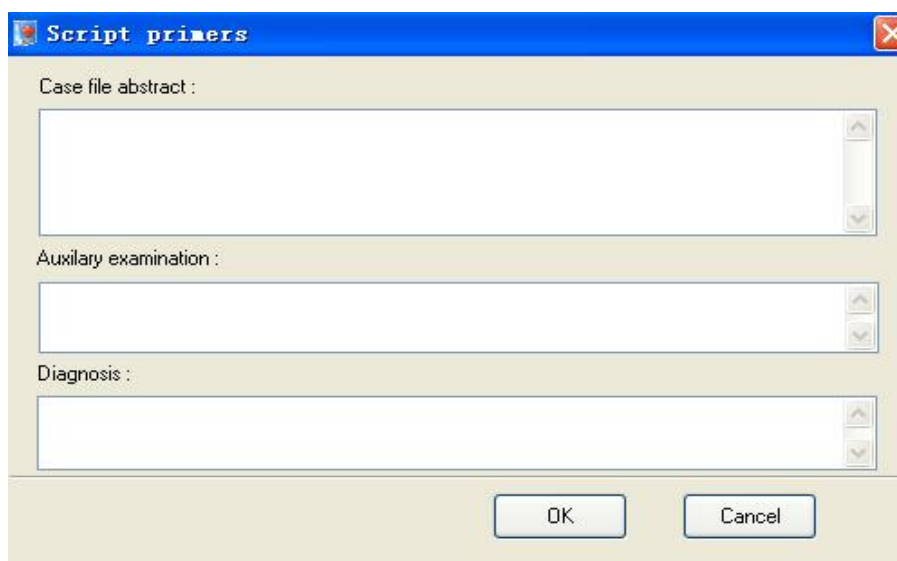
i) Time: represents patient tiem and the duration time of some scene

Click “”, then click “Event frame”, can modify patient time (as following fig.)



8、Add script primer

Open “Edit”----“Script primer”, add cases, as following fig.:



9. Add, delete animation scene: animation scenes vividly display medical cases, strengthen learning effect

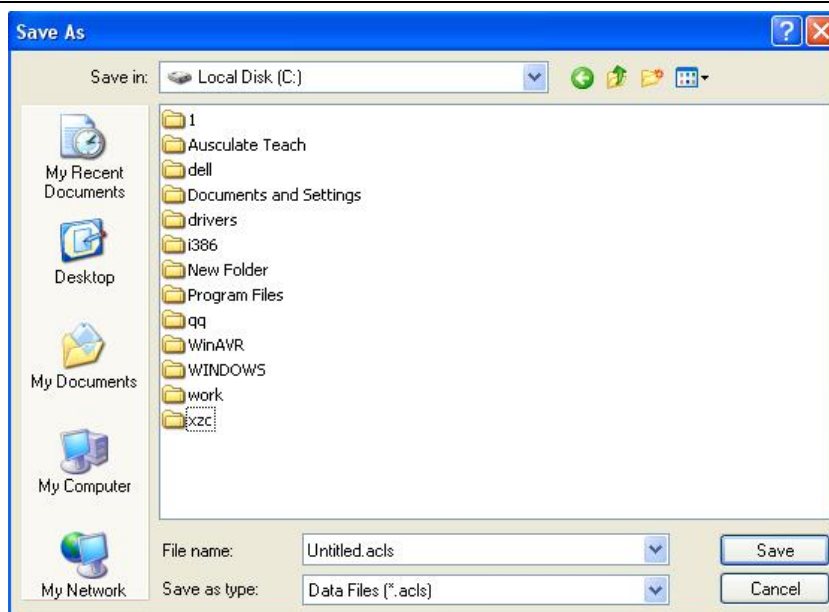
Click your required animation scenes, there would be a  icon, indicating you have choose this animation

e.g.: The first time BLS emergency, when you choose the animation scenes, it would play automatically, only when you choose the stop key, it would stop playing, as following fig.:



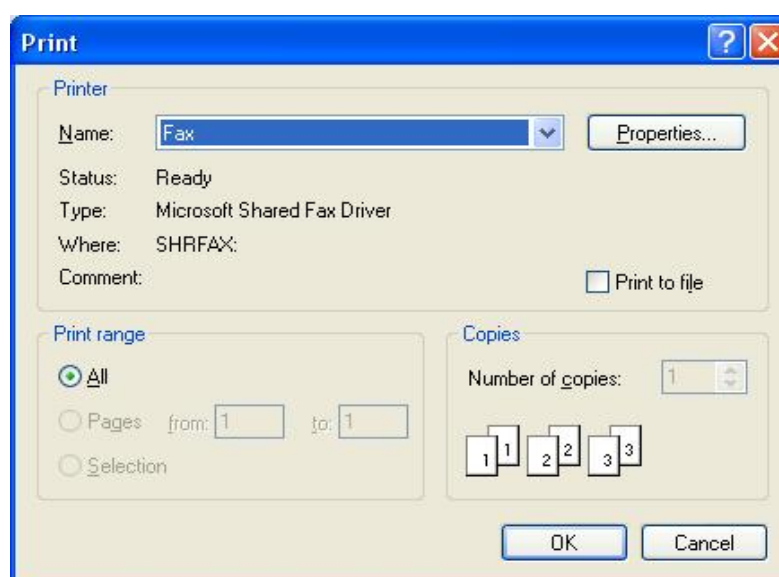
10. Save/save as script

Click "File"—"Save", input document name, then click "save"



11. Print script

Choose "File", click "Print" to print BLS script, it would pop up the following dialog frame:



Set printer name and printing page, click "confirm" to print script

Choose "file", click "Print preview" to preview print effect before printing

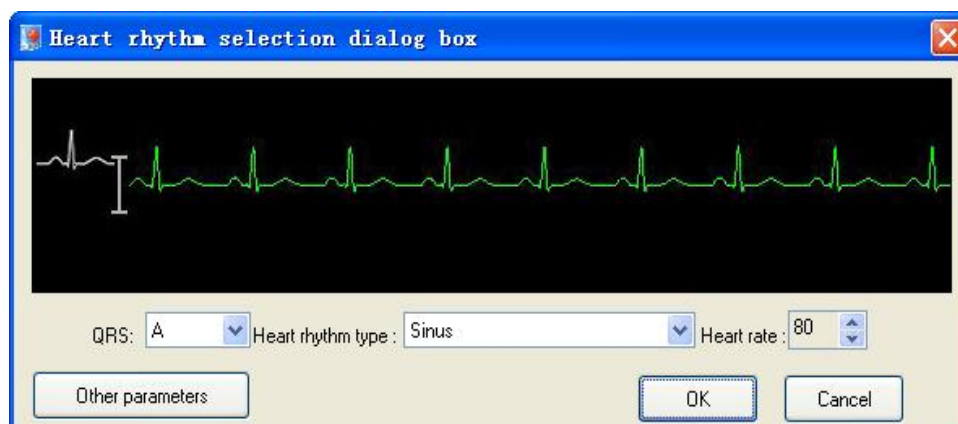
Medical record editing example:

Case 1: "VF, heart rate 0times/min, BP 2/0mmHg, breathing 0times/min; give one time of defibrillation, ECG turn to "Sinua heart rhythm", heart rate 80times/min, BP110/70mmHg; respiration 14times/min"

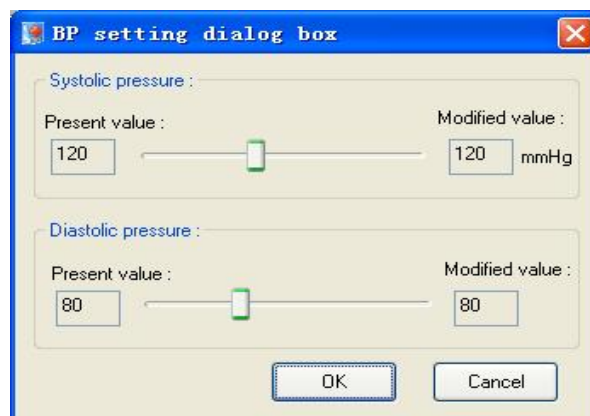
- a) Open Nursing Script Editing Software, show as following fig.



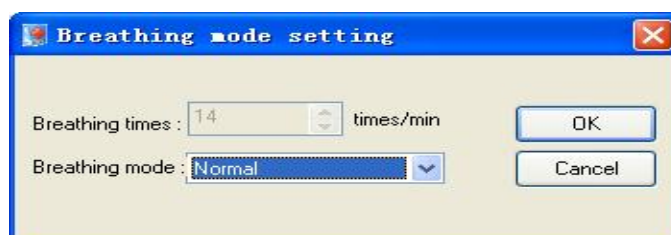
- b) Click “” in “Physical signs parameter”, show as following fig.



- c) Choose ECG from the pull-down menu of “Cardiac rhythm”, click “Confirm”
- d) Click “” in “physical signs parameter”, set BP value as 0/0mmHg, click “Confirm”;



- e) Click “” in “physical signs parameter”, set breathing pause, click “Confirm”



- f) After finishing setting pathogenetic conditions, appear the following fig.



g) Click “ ” from “Frame diagram”



h) Click “ ” from “Event”, show as following fig.



i) Choose defibrillation times : 1 time

j) Click “ ” to creat new scene, as following fig.:



k) Click “ ” from “physical signs parameter”, choose sinus heart rhythm from “Cardiac rhythm type” pull-down menu

l) Click “BP” in “physical signs parameter”, set BP value as 110/70mmHg, click “Confirm”



m) Click “ ” in “physical signs parameter”, set respiration time 12times/min, click “Confirm”

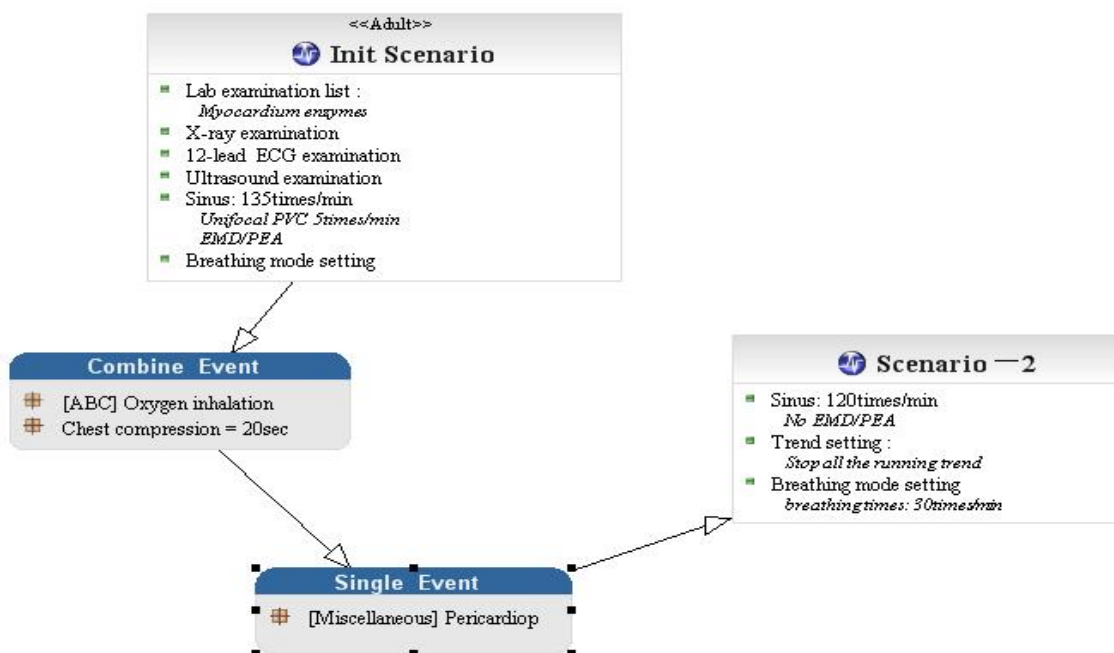


n) Click “ ” to connect “Initiator scene” and “Single event frame”

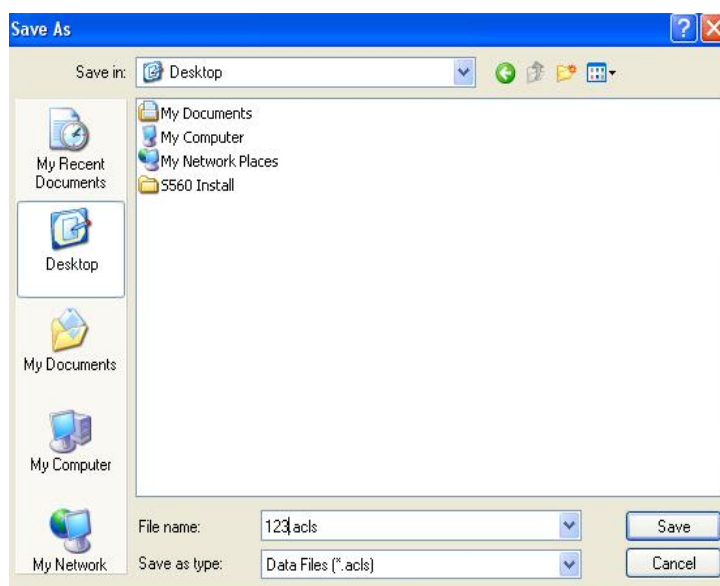


o) Click “ ” to connect “Single event frame” and “Scene--1”

p) The entire operation diagram is as follows:



q) Save: click “” —name—click “save” button

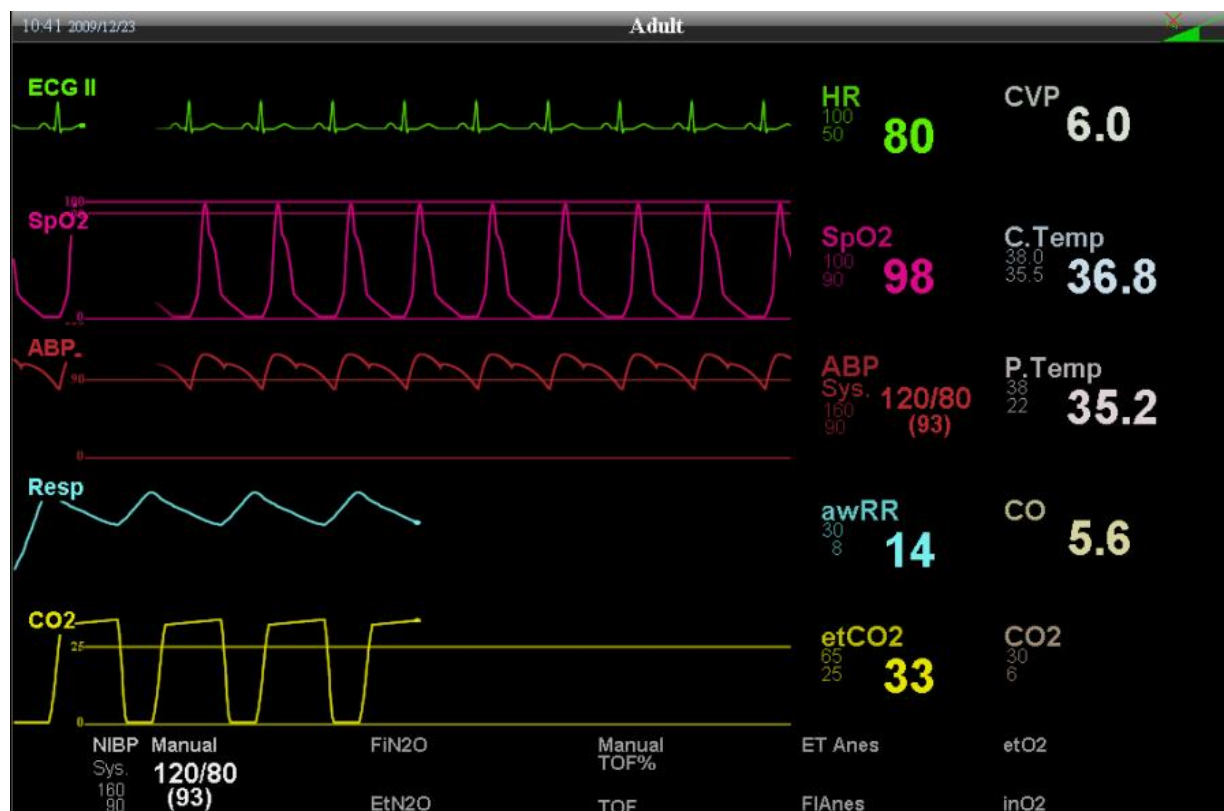


Note: Every script includes multiple scenes; only when you finish the designated operation, can change to next scene from the previous scene; for different scripts, the scenes are also different. You need to be familiar with script before operation. For script, please refer to “Script editor”.

Simulative Physical Signs Monitoring Software

Used with simulative vital signs monitor (is not included)

1. Monitoring content: heart rate, blood oxygen, BP, body temperature, etc
2. Can use blood oxygen probe, can be caught between the fingers, with finger pulp facing the concave of probe
3. Can connect ECG lead to monitor vital signs (as following fig.)



Arm Venous Injection

Site: commonly used basilica vein, vena mediana, cephalic vein of cubital fossa, and back of hand

Features:

1. There is obvious feeling when penetrates into vein
2. Blood flash back indicated successful puncture
3. Can act venous infusion, blood drawing



Fig.1

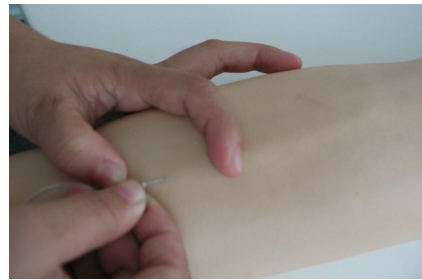


Fig.2

Subcutaneous Injection of Thigh Lateral Muscle

Features:

The thigh lateral muscle module can be taken out and squeeze out the water

Site: Thigh lateral muscle



BP Measurement

Features:

- Systolic pressure, diastolic pressure and heart rate parameters can be set by user self

Systolic pressure: 70-230mmHg; diastolic pressure: 40-140mmHg; heart rate: 20-260beats/min

- a. Ex-work parameters setting: systolic pressure: 120mmHg, diastolic pressure: 80mmHg; heart rate: 70beats/min

- b. System would give alarming sound if the systolic pressure setting value $\leq$ DBP value

- Can set auscultation interval to simulate special symptom.

Upper limit of auscultation: systolic blood pressure less than the current settings-5mmHg

Lower limit of auscultation: diastolic blood pressure more than the current settings +5mmhg

- Cuff pressure: real-time measure BP and display

- Pressure measurement range: 0-240mmHg

- Cuff pressure can be corrected.

Blood pressure measurement with real Korotkoff broadcast, volume can be adjusted; can connect to the earphone and voice box. (Note: earphone and voice box are not included)

■ Shortcut key

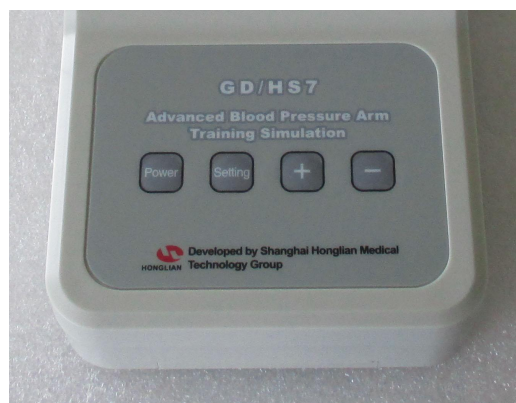
For the convenience of use, the product presets 3 default shortcuts key;

- Restore the factory parameters: Press “Setting” and “+”button at the same time to restore the factory parameters. During operation, if there is confusion or parameter can not be setting due to misuse or electromagnetic interference, this shortcut key can be used to restore.
- “Pressure correction” shortcut key: Press “setting” and “-”button at the same time to directly enter pressure correction interface.
- Training/assessment mode switching: Press “+” and “-” button at the same time to activate this function.

■ Flexible power choice: DC9V external power adapter or 4 pcs of No.5 batteries; when it is used with GD/ACLS8000, batteries and external power are not necessary.

■ Automatic turn-off: In the use of battery-powered, if the trainer is not in use for 5 minutes, the system will automatically turn off.

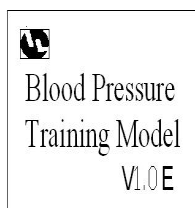
Introduction of function key



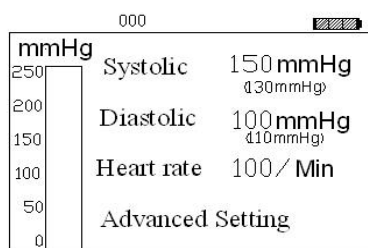
“Power” button: press this button once to turn the unit on; press it again to turn off the unit.

“Setting” button: Press this button to select “Systolic pressure”, “Diastolic pressure”, “Heart rate”, “Advanced setting”.

“+”, “-” button: Press this key to increase or decrease settings



Turn the unit on, the system will self-test and display the interface as left figure

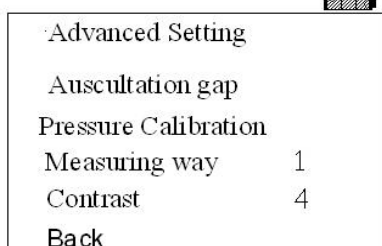


Turn the unit on, the system will self-test and display the interface as left figure

a) Introduction of menu interface

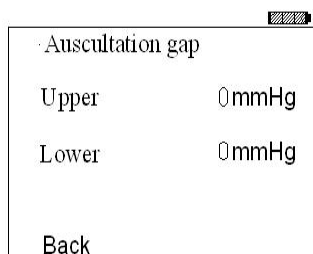
■ Main menu interface

The simulative mercury column in the left side of screen simulates the cuff pressure, and the upper part displays the real-time pressure value (when the cuff pressure is more than 30mmHg, the center of the screen will display the pressure value by big characters; at this point, the keyboard is locked, and unable to perform single bond operation.); the right side shows systolic pressure, diastolic pressure and heart rate settings. “Systolic pressure”, “diastolic pressure”, “heart rate”, “Volume” and “Advanced setting” these menus shown on the screen. At the beginning, the choice box points to “Systolic pressure”; pressure “setting” button to move the choice box and choose the menu required to be modified. Press “+” or “-” to amend the setting value.



Choose “Advanced setting” and press “+”or “-”to enter the interface, show as left figure.

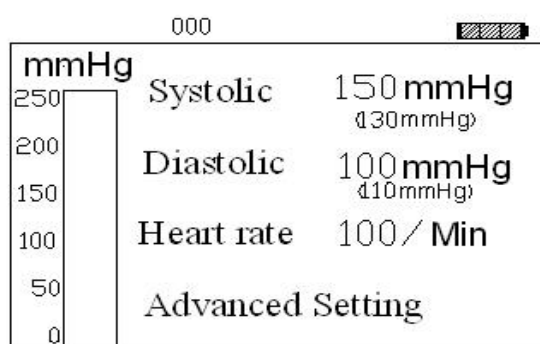
■ Set auscultation interval



Choose “Auscultation interval”and press “+”or “-”to enter its setting interface, show as left figure. Choose “The upper limit of auscultation” and “The lower limit of auscultation” respectively, then press “+”or “-” to set.

The requirement of upper /lower limit of auscultation is as the above mentioned; if the setting of both limits is wrong, press “Restore” to correct, and the trainer would give a buzzing sound.

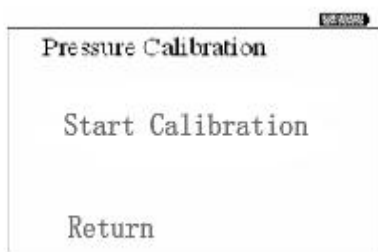
◆The default upper/lower limit of auscultation is 0, which shows this feature is not turned on.



Shown as left figure, the current systolic pressure is 150mmHg, diastolic pressure is 100mmHg; the upper limit of auscultation is 130mmHg, and the lower limit is 110mmHg. Therefore, during measuring, Korotkoff sound will not be heard between 110-130mmHg.

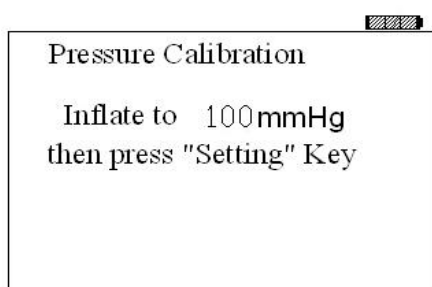
■ Pressure correction

The pressure has been corrected before the products leave factory; users can make correction again according to the situation

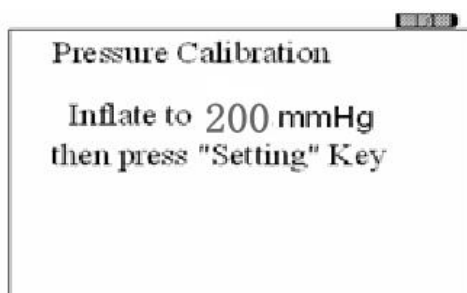


Pressure correction method:

Choose “Pressure correction” in the “Advanced setting” interface and press “+” or “-” button to enter the correction interface (as left figure). Choose “Start correction” and press “+” or “-” button to enter the correction procedure.



In accordance with the screen prompts, inflate so that the cuff pressure to 100mmHg, locking valve and press “Setting” button to enter next step.



According to screen prompts, inflate to 200mmHg, locking valve and press “Setting” button; the trainer will return to main menu interface and finish correction.

You can also use shortcut key to enter “Pressure correction”.

Note: It would give alarm warning if user's operation is wrong, and the system will return to "Pressure correction" procedure to let users restart operation.

■ Manometry mode

It only supports one kind of manometry mode in V2.XX version; so the "Manometry mode" menu can not be used, otherwise the trainer will prompt there is wrong operation.

■ Contrast ratio

"Contrast ratio" in the "Advanced setting" menu is used to change the screen display effect, dividing into 5 levels; users can amend according to their requirement.

Preparation

Blood pressure trainer (figure 1), Blood-pressure meter (figure 2), Log, auscultator (figure 3)

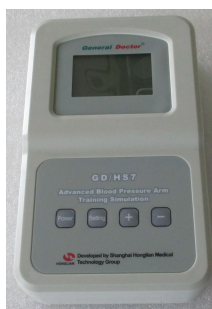


Fig.1



Fig.2



Fig.3

Training method

1. Choosing the position to measure blood pressure.
2. Make the cuff flat, arms abduct about 45 degrees, and wrap the cuff on the upper arm, the tightness is able to insert a finger; the lower edge of cuff is 2-3cm above cubital fossa.
3. Wear auscultator, and place the auscultator chest piece at the brachial artery. Use one hand to fix it, and the other hand hold rubber ball to close the valve, inflate until the pulse sound disappears.
4. Deflate air at the speed of 4mmHg per second (when the speed >8mmHg/s, there will be alarm warning) to hear the first "flap" sound, indicating the systolic pressure; continue gas releasing until the pointer points 0.(Blood pressure trainer will show the set pressure values on the LCD screen, see as figure 4).

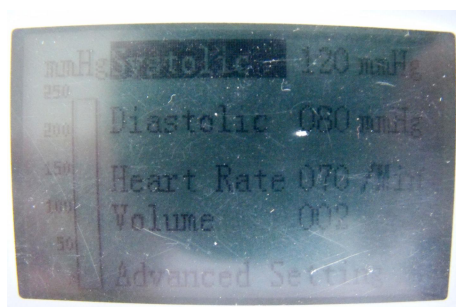


Fig 4



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