美国民间健康基金会-中国

儿科护士教学大纲

基础课程

第 一 单 元

物理检查

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PROJECT HOPE/CHINA

PEDIATRIC NURSE
TEACHING PROGRAM
BASIC COURSE

MODULE 1
PHYSICAL ASSESSMENT

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JOINT VENTURE

中文翻译

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STUDY GUIDE: PHYSICAL ASSESSMENT

I. Objectives

Upon completion of the module the learner will be able to:

1. Demonstrate the ability to take vital signs: blood pressure, heart rate, temperature, respiratory rate.
2. Document on the flowsheet a comprehensive nursing assessment.
3. Demonstrate the ability to assess a neonate and an older child.
4. List the methods for problem-solving an ECG monitor and a Dinamapp.
5. Describe the normal and abnormal values for each vital sign.

II. Sources of Information

Required Readings

A. Procedures
1. Measuring blood pressure by palpation
2. Measuring blood pressure by auscultation
3. Measuring blood pressure using a Dinamapp
4. Operating the Dinamapp machine
5. Using the continuous cardiac monitor

B. Lessons
1. Vital signs
2. Assessment guidelines for documentation for the neonatal patient
3. Assessment guidelines for documentation for the pediatric patient

III. Clinical Activities

A. Performance Checklist
1. Measuring blood pressure using a Dinamapp
2. Measuring blood pressure by palpation
3. Measuring blood pressure by auscultation
4. Using the continuous cardiac monitor

B. Activity

Document on the flowsheet an assessment of the child for one shift. This should be reviewed by the nurse educator.

Document on the flowsheet an assessment of a neonate for one shift. This should be reviewed by the nurse educator.

IV. Post Test

学习指引： 物理检查

Ⅰ．目的
修毕本单元后，学员应该能够：

1. 检查各生命体征：包括血压、心率、体温、呼吸频率等。
2. 在病历上完整地记录评估结果。
3. 评估新生儿和幼童。
4. 如何解决心电图监测仪和 Dinamapp 所出现的问题。
5. 描述各生命体征的正常和不正常值。

Ⅱ．资料来源
必修课程

A．操作程序

1. 用触诊法量血压
2. 用听诊法量血压
3. 用 Dinamapp 法量血压
4. Dinamapp 机器的操作
5. 使用持续心电图监测仪

B．课程

1. 生命体征
2. 如何评估和记录新生儿病情
3. 如何评估和记录儿科病人病情

Ⅲ．临床活动

A．实习项目

1. 用 Dinamapp 量血压
2. 用触诊法量血压
3. 用听诊法量血压
4. 使用持续心电图监测仪

B．活动

记录一班内对病人的评估结果，记录要由导师改正。

Ⅳ．测验

PROCEDURE: MEASURING BLOOD PRESSURE BY PALPATION

Overview

The palpation method of blood pressure monitoring is often the simplest way of measuring a neonates blood pressure, or the blood pressure of any sick pediatric patient. This method provides only an approximate mean pressure which lies between systolic and diastolic obtained by auscultatory method.

EQUIPMENT

Appropriate sized blood pressure cuff
with manometer and bulb inflator

PROCEDURE

ACTION	RATIONALE
1. Gather equipment.	1. The size of the cuff is very important. The inflatable part of the cuff should be long enough to wrap entirely around the arm or leg. The width must be 2/3 the length of the arm from shoulder to elbow.
2. Wash hands.	2. Prevent infection.
3. Wrap the cuff around the arm or thigh.	
4. Check to see that the gauge reads zero.	4. If the gauge does not read zero, adjust it or get a new gauge.
5. Hold the arm straight, with the palm and inner part of the arm facing you.	5. The following principles apply to aking a blood pressure in the thigh, as well.
6. Using your index finger of this same hand, feel for the pulse in the antecubital space.	6. Pulse is usually just above the crease of the elbow and slightly toward the inside of the arm. For the thigh, palpate for a pulse over the popliteal artery.
7. When you feel the pulse, keep your finger lightly pressed over this spot.	7. Too much pressure can restrict the blood through the artery and may result in falsely low blood pressure readings.
8. Using your other hand, pump up the cuff until the needle reads 100mmHg for the neonate and 140mmHg for the child older than one year.	8. For the older child, you may need to pump as high as 200mmHg.

操作程序：用触诊法量血压

概论

触诊法是监测新生儿和儿科病人血压的最简单方法。本法只能提供一粗略的平均压，介于用听诊法得出的收缩和舒张压之间。

器材

大小适当的压力袖，连接压力计和打气泵。

操作程序

步骤	原因
1．集中器材。	1．袖的大小很重要，能够充气的部分至少要能够包绕手臂和大腿，袖的阔度要等于肩至肘部长度的 2／3 。
2．洗手。	2．防止感染。
3．用压力袖包绕上臂或大腿。	
4．检查压力计读数是否为 0 。	4．如读数不是 0 ，要调准它或换另一副压力计。
5．握住手臂，使它伸直，掌和臂内侧朝向自己。	5．量大腿血压时，原理一样。
6．用同一手的食指摸肘窝的脉搏。	6．脉搏通常在肘上部靠臂内侧处。大腿脉搏在腿弯部的腿弯动脉处。
7．摸到脉搏后，用手指轻按搏动点。	7．压力太大使动脉血流减少，可能会量到错误性的低血压。
8．用另一手泵气，充盈压力袖，量新生儿时泵到压力仪读数为 100mmHg， 量大于一岁的小童，泵至读数为 140mmHg	8．如为较大儿童量血压，可能要泵至 200mmHg。

9. Release the screw clamp and let the needle fall slowly, approximately 2mmHg per second.

10. Watch the needle as it falls. Note the reading on the gauge when you first feel the artery pulsate.

11. After you have felt the artery pulsate, deflate cuff rapidly.

12. Record the B/P reading and document as using the palpation method.

9. If the needle falls too quickly, the B/P reading will be falsely low.

10. The B/P reading is when you first feel the pulse.

12. Example: 58/palpation or 58/p. Notify the physician of an abnormally high or low reading.

PROCEDURE: MEASURING BLOOD PRESSURE BY AUSCULTATION

Overview

Auscultating the blood pressure is the method of choice whenever possible. Auscultation gives both systolic and diastolic measurements. The auscultation method (listening with a stethoscope) is almost impossible to do with a neonate unless a doppler instrument is available. This method should be used with an older child.

EQUIPMENT

· Appropriate size blood pressure cuff, with manometer and bulb inflator
· Stethoscope

PROCEDURE

ACTION

1. Gather equipment.

2. Wash hands.

3. Wrap the cuff around the arm and leg evenly.

4. Check to see that the gauge reads zero.

5. Hold the arm slightly bent with the palm and inner of the arm facing you.

RATIONALE

1. The size of the cuff is very important. The inflatable part of the cuff should be long eno.ugh to wrap around the arm or leg The width should be 2/3 the length of the arm from the shoulder to elbow.

2. Prevent infection.

4. If the gauge does not read zero, adjust it or get a new gauge

9．松开螺丝阀，让压力仪指针慢慢下降、下降率为约每秒 2 mmHg。

10．针跌时，要盯住针，当针跌至脉搏出现时，把该压力记录下来。

11．感觉到脉搏后，可加快松开压力袖放出空气。

12．记录血压，并写明用触诊法。

9．如针跌得太快，量出压力会错误性地低。

10．脉搏出现时的压力就是血压。

12．例：58/触诊或58/P。
有任何太高或太低血压出现，要向医生报告。

操作程序：用听诊法量血压

概论

听诊法在可行情况下是量血压的最好方法，本法可提供收缩和舒张压。除非有声频装置，听诊法（用听诊器）不适合新生儿。本法只适用于较大儿童。

器材
· 大小合适的压力袖，连接压力仪和充气泵
· 听诊器

操作程序

步骤	原因
1．集中器材。	1．袖的大小很重要。能够充气的部分至少要能够包绕手臂和大腿，袖的阔度要等于肩至肘部长度的 2/3。
2．洗手。	2．防止感染。
3．用压力袖均匀包绕手臂或大腿。	
4．检查压力仪读数是否为 0。	4．如读数不是 0，要校准它或换另一部压力仪。
5．握住臂部，使肘微屈，掌和臂内侧朝着自己。	

6. Palpate the brachial artery. Place your stethoscope where the pulse can be most strongly felt.

7. Inflate the cuff to 20-30 mm/Hg above the expected blood pressure.

8. Deflate the cuff slowly, about 2mm-Hg per second.

9. Deflate the cuff rapidly and completely after all sounds disappear.

10. Record the reading, method used and compare the B/P to the previous value.

6. With the arm, the pulse is usually present just above the crease of the arm.

8. If the needle falls too rapidly, the B/P reading may be falsely low. Systolic Pressure. The point at which the pulse becomes audible. Diastolic Pressure: The point where sounds are muffled or absent.

10. Notify the physician of an abnormally high or low reading.

PROBLEM SOLVING-PALPATION OR AUSCULTATION METHODS

1. You may measure the B/P correctly, but not take the B/P often enough.

2. The strap may be wrapped too tightly or the cuff may be left inflated.

3. The inflatable part of the cuff is too small.

4. The inflatable part of cuff is too large, or you release the pressure too fast.

1. A sick or unstable patient needs frequent B/P measurements. One normal reading does not mean the B/P will remain normal.

2. This could restrict the blood flow for a long time and cause tissue damage.

3. Readings will be falsely high.

4. The reading will be falsely low.

PROCEDURE: MEASURING BLOOD PRESSURE USING A DINAMAPP

Overview

The Dinamapp is an electronic machine designed to measure blood pressure automatically. When the machine is used correctly, the B/P value is generally correct. The heart rate on the cardiac monitor should match the heart rate given on the Dinamapp after completing a reading.

此为试读，需要完整PDF请访问：www.ertongbook.com

5．触摸肱动脉。把听诊器放在搏动最强点处。

6．上臂脉搏通常在肘摺上方。

7．泵气充盈压力袖，把压力加到高于预期血压 20-30mmHg。

8．慢慢放气，放气率为约每秒 2mmHg。

8．如指针下降太快，量出血压会错误性地过低。
收缩压：刚听到脉搏的压力。
舒张压：当声音变混浊或消失的压力。

9．至无声时，可加快松开袖子放气。

10．记录血压，写明方法，并与前次读数对比。

10．如有过高或过低血压，要向医生报告。

解决问题一触诊法或听诊法

1．血压量得对，但量的次数不足。

1．情况不稳的病儿要经常量血压。一次正常值不表示血压会持续正常。

2．带子缚得过紧，压力袖被充气后不放松。

2．血液会因此降低过久而引起组织损伤。

3．压力袖可以充气的部位太小。

3．量出血压会错误性过高。

4．压力袖可以充气的部位太大，或放气太快。

4．量出血压会错误性过低。

操作程序：用Dinamapp量血压

Dinamapp 是一种自动电子血压计。如正确使用，量出血压相当正确。用 Dinamapp 量血压时，Dinamapp 读到的心率要与心电图显示的心率相等。

EQUIPMENT
· Appropriate sized cuff
· Neonatal Hose Connector or Adult Hose Connector
· Dinamapp
PROCEDURE

ACTION	RATIONALE
1. Gather equipment.	1. Appropriate width of cuff is 2/3 the length of the arm from shoulder to elbow. If correct cuff is neonatal size, use neonatal hose connector. If cuff is child sized, use screw-type adult hose connector.
2. Insert correct hose connector into back of Dinamapp.	
3. Wash hands.	3. Prevent infection.
4. Wrap cuff around arm or leg matching arrow on the cuff to the palpable pulse.	4. Proper cuff placement is essential for optimal machine function.
5. Choose mode of operation.	5. Choice of modes will depend no severity of illness, patient activity and previous B/P measurement.
a) Manual Mode: Push start button to begin each measurement.	a) Good for periodic readings or if patient is active. Will always pump cuff high before deflating.
b) Automatic Mode: Push auto button, this begins a measurement. Press cycle set to set number of minutes between each measurement (one minute to 90 minutes).	b) Gives continuous measurements. Good for very ill patients, patients on cardiotonic drugs and hypotensive or hypertensive patients. Cuff will inflate to 20mmHg above previous reading, so is more comfortable.
c) STAT Mode: gives five minutes of continuous readouts. Not used often.	c) STAT Mode measurements prevent blood circulation to the extremity with the cuff. A better choice is Automatic Mode with one minute cycle.
6. Set alarm limits. Follow Dinamapp policy instructions.	6. Enhances nurses awareness of of change in patient condition.

器材

· 大小合适的压力袖
· 新生儿型连接管或成人型连接管
· Dinamapp

步骤	原因
1. 集中器材。	1. 压力袖的适当阔度是肩至肘长度的 2/3，如适应的压力袖为新生儿尺码，连接器要用新生儿型。如压力袖为儿童尺码，连接器要用带螺丝的成人型。
2. 把适当的连接器与 Dinamapp 机身后面的插座接上。	
3. 洗手。	3. 防止感染。
4. 用压力袖包绕臂或大腿、袖上的红色箭头要对正脉搏。	4. 压力袖位置正确，对机器正常运作有重要意义。
5. 选择功能方式。	5. 选择功能方式视病情轻重，病人活动情况和前次血压而定。
a）人工挡：按开始掣（start），开始测量。校周期。	
b）自动挡：按自动掣（Auto），开始测量。校周期掣，定出每次测量相隔的时间（可由每分钟至每90分钟）。	b）可提供持续性测量。适用于病情严重的病人和接受强心药、血压低或血压高的病人。压力袖会充气到只高于前次血压 20mmHg 水平，所以较为舒适。
c）"STAT"挡：提供 5 分钟持续性测量，很少应用。	c）用"STAT"挡测量时，肢体血运会因压力袖持续高压而减少。较理想的做法是用自动挡，校周期掣至每分钟测量一次。
6. 校警报的上下限，依照 Dinamapp 说明书执行。	6. 可提高护士对病人情况的警觉性。

7. Leave the Dinamapp cuff in place between measurements, or keep it at the patient's bedside.

7. Cuff must be left on for Automatic Mode to function. Each patient should have their own Dinamapp cuff while they are in the ICU.

PROBLEM SOLVIMG
PROBLEM

1. When alarm conditions occur, determine and correct the problem.
2. Alarm continues to ring after problem is corrected.

SOLUTION

1. Use the Alarm Code system as found in the Dinamapp policy.
2. Turn machine off and back on. Reset mode and time cycle.

LESSON: OPERATING THE DINAMAPP

Procedure for operating:
1. Press POWER ON switch.
2. Set ALARM ON/OFF switch as needed.
3. Set the systolic, MAP, pulse, and diastolic alarm limits. First, press on the SELECT switch. The SYSTOLIC display will show zero or the preset systolic values. Press the HIGH LIMIT and LOW LIMIT switch to set the desired alarm values of the systolic. Then set the MAP, pulse, and diastolic alarm limits one by one in the same way. Lastly, press the SELECT switch to return the display to normal operation. If no switch is pressed within a 10-second period while setting limits, the monitor will automatically return to the normal display.

This monitor has three operation modes from which to choose:

·Manual Mode:

Press START to begin each determination. Press CANCEL to abort a determination and deflate cuff, or to cancel excess time and patient alarm indicators.

·Auto Mode:

Press AUTO/MANUAL to enter auto mode and start a determination. Press CYCLE SET switch to set the desired cycle time. Press CANCEL to abort a determination and deflate cuff, or to cancel the patient alarm indicators.

·Stat Mode:

Press STAT MODE to start a 5-minute period of continual determinations. After 5 minutes, or whenever the CANCEL switch is pressed, the monitor will return to the previous operating mode.

There are two categories of alarms that could occur when the monitor is being used; patient alarms and system alarms. Whenever the patient alarm occurs, the

7. 测量后，可保持 Dinamapp 的压力袖在原位，或把袖放在末边。

7. 用自动挡时，袖要保持原位。在重症监护室，要为每病人供应一部独立的 Dinampp。

解决问题

问题

1. 警报响起，要确定和纠正出现的问题。

2. 警报在纠正问题后仍然持续响起，

解决方法

1. 依照 Dinamapp 说明书，掌握警报密码系统。

2. 关掉机器，然后再开动，重新选挡和校周期。

课程：Dinamapp 的操作

操作程序

1. 按下电源开关掣。

2. 按需要调校警报系统开关掣。

3. 用选择掣、上限掣和下限掣调校收缩压、MAP（平均动脉压）、脉搏和舒张压警报的限值。先按选择掣，收缩压指标会显示 0 值或当时收缩压值。再按上限掣和下限掣来选定收缩压警报的限值。跟着用同样方式校 MAP 脉搏和舒张压警报的限值。最后按选择掣，使指标的显示回复至正常操作状态。如在校警报限值过程内 10 秒钟没有按掣，机器会自动回复至正常操作状态。

监测器有三挡操作功能可供选择：

· 人工挡：
   按开始掣开始进行测量。按取消掣来停止测量、作压力袖放气、或删除多余测量时间和病人警报指标。

· 自动挡：
   按自动/人工掣进入自动程序开始进行测量。按周期掣选择周期时间长短，按取消掣来终止测量、放气或删除病人警报指标。

· "STAT" 挡：
   按即时挡掣进行持续 5 分钟的测量。5 分钟后，或在按下取消掣时，监测器会自动回复至先前的操作功能挡位。

监测器有两项警报，即病人警报和系统警报。当病人警报出现时，仪表中的有关指标值会闪亮，机器会发出一高/低频交替的警号。当系统警报出现时，脉搏显示会出现 899-800 的

associated display will flash the determined value and an alternating high/low frequency audio alarm will be issued. When the system alarm occurs, the number 899—800 will flash on the pulse display to alert the operator to certain abnormal conditions or internal system failures. When 877, 866, 822, 811, etc., flashes ask the Biomedical Engineering (BME) Department to repair the machine. The operator can solve the following problems:

899: This alarm condition indicates that the monitor is unable to make a determination. The possible causes include sudden changes in blood pressure, excessive arrhythmias, cuff too loose, or arterial obstruction. Move cuff to another location and attempt another determination.

855: Indicates that the cuff pressure is held at one pressure level for more than 60 seconds. Check the cuff and hose connections for kinks or blockages and then initiate another determination.

844: This alarm condition indicates that the determination time exceeds 120 seconds which is usually caused by excessive patient movement and/or erratic pulse rate. Restrain patient movement and check the patient's pulse rate. Try another determination.

833: This alarm condition indicates the initial cuff inflation time exceeds 30 seconds and is usually caused by a leak in the pneumatic system. Check the cuff and hose for leaks and try another determination. If alarm persists, refer to qualified service personnel.

800: This alarm condition indicates that the cuff pressure is higher than the normal level. Possible causes include: 1) if the sensed cuff pressure remains higher than 20 mmHg for more than 20 seconds during the wait cycle; 2) if the sensed cuff pressure exceeds 275mmHg with an adult/pediatric cuff attached; 3) if the sensed cuff pressure exceeds 235mmHg with a neonate cuff attached; 4) if the sensed cuff pressure exceeds 250mmHg for a period longer than 20 seconds during a determination with an adult/pediatric cuff attached. Check to see if cuff, hose and connector is kinked or otherwise blocked. If the alarm persists, it is an indication of a hardware malfunction. Refer to qualified service personnel.

If the cuff cannot be positioned at heart level, then compensate by 1.8mmHg for every inch.

If the patient is in shock, with a very close value of systolic and diastolic pressure, the monitor may display only MAP and not display values for systolic and diastolic pressure.