Connex® Vital Signs Monitor
2.2 Software Version

Clinical Inservice Presentation
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Use to obtain vital signs and other parameters

- Adults (>12 yrs)*
- Pediatric (29 days-12 yrs)*
- Neonate (<28 days)*

*Does not apply to Integrated Pulmonary Index (IPI)™, Acoustic Respiratory Rate®(RRa), or EarlySense®.
Roll Stand & Accessory Cable Management System Features

- Ergonomic design: roll handle, night light, easy to roll

- Cable management system with SpO2 holster – please use!

- Infection control features:
  - Holder for wipes
  - Lack of corners for ease of wiping
  - Probe cover storage
Roll Stand & Accessory Cable Management System Features

• Ergonomic design: roll handle, night light, easy to roll

• Cable management system with SpO₂ holster – please use!
Roll Stand & Accessory Cable Management System Features

- Ergonomic design: roll handle, night light, easy to roll
- Cable management system with SpO₂ holster – please use!
- Cross-contamination reduction features:
  - Holder for wipes
  - Lack of corners for ease of wiping
  - Probe cover storage
CVSM Exterior

- Power button
- Ports:
  - Ethernet
  - USB
  - Stereo/nurse call
  - EarlySense Port (if applicable)
CVSM Exterior

- Patient cable/sensor ports
  - $\text{SpO}_2$/Pulse Rate
  - NIBP (non-invasive BP)
  - EtCO$_2$
Power On

Press Power
Button on the side

Power ON
Power OFF

1. Press Power Button
2. Select Power Down on main screen

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The Home Screen

The home screen is divided into three areas:

• Device Status Area
• Content Area
• Navigation Area

Let’s look at each area.
Provides device status information, including:

- Clinician ID
- Device location (*i.e. nursing unit*)
- Time
- Date
- Battery life information
- Connection status (*i.e. Wireless*)
- Alarms and Messages and Patient Profile (*i.e. Spot, Intervals, or Continuous*)
Displays:
• Vital sign measurements
• Patient information
• Manual parameters
• Early Warning Scores (if applicable)
• Shortcuts to alarm controls
• Save button
Provides tabs for:

- Home
- Patient List*
- Alarms*
- Review*
- Settings

*Depending upon profile selected
Spot Profile

Features:
- No alarms
- No BP intervals
- Take SpO\(_2\) sensor OFF prior to touching SAVE
- Provides Early Warning Scores (EWS) if applicable
Features:

- Automatic, Program, and Stat interval settings
- Parameter alarms
- SpO₂ sensor should stay **ON** while you touch SAVE
- Provides EWS if applicable
Continuous Profile*

Features:

• Allows continuous monitoring of vital signs and other parameters
• Continuous data review for current patient

*If applicable to your facility
Continuous Profile*

Features:

- Allows continuous monitoring of vital signs and other parameters
- Continuous data review for current patient
- Gives users ability to pause monitoring for procedures

*If applicable to your facility
Early Warning Scores (EWS)*

Features:

• Provides a facility the capability to calculate Early Warning Scores at the device
• Scoring system is determined by facility
• Available only in Spot Check/ Interval Profiles

*If applicable to your facility
Early Warning Scores (EWS)*

Features:
- Provides a facility the capability to calculate Early warning scores at the device
- Scoring system is determined by facility
- Available only in Spot Check/Interval Profiles
- Scoring summary will notify staff if further clinician notification is required

*If applicable to your facility
Changing Patient Profiles

To change Profiles:

1. Touch the current Profile showing in the Device Status Area
2. Choose the appropriate profile. Your choices may include: Office, Triage, Spot, Intervals AND/OR Continuous.

Note: Once data collection starts in Continuous Profile, the user must end monitoring before switching profiles to Spot or Intervals.
Taking a Non-Invasive Blood Pressure (NIBP)

• **Proper technique** is very important for accurate readings
• Uses SureBP® technology that captures BP on cuff inflation
• Will revert to Step deflation method
  – in times of extreme movement
  – artifact
  – Neonate mode
  – if programmed to do so via Advanced Settings
• Touch the START button to initiate a BP.
• Touch the STOP button to cancel a BP in progress.
Proper Blood Pressure Technique

- No more than two fingers between cuff and arm
- Patient sitting quietly; not moving
- Back supported; legs uncrossed
- Arm at heart level
- Align Artery Index Marker with brachial artery
- Proper sized cuff
- FlexiPort® should be to the outside of the patient’s body
Proper Blood Pressure Technique

For more information on Blood Pressure technique, go to: https://www.youtube.com/watch?v=ScbFRb1dKc4&index=21&list=PLkXnwokwhxrU8d-LnfwYy2Lsjzqa2z7kX

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Simple Steps for Initiating BP Intervals

1. Touch 🔄 within the BP frame on the Home Screen
2. Choose “Automatic” or “Program”
3. Adjust intervals in minutes (Automatic) or choose appropriate program (Program)
4. Touch “Start Intervals”
Taking Interval Blood Pressures: Overview

- Access the Interval options by touching the clock icon within the NIBP frame
- Choose Automatic, Program, or Stat
- Stat takes multiple BPs in a 5-minute period
Taking Automatic Interval Blood Pressures: **Automatic**

- Adjust Automatic Interval setting in minutes
  - Touch arrow keys
  - OR
  - Touch small keyboard icon in bottom right of “minutes” window
- Touch Start Intervals
Taking Automatic Interval Blood Pressures: **Program**

- Choose a preset Program
  - These are set up in Advanced Settings
- Touch Start Intervals
Stopping Interval Blood Pressures

• To stop intervals **entirely**
  – Press within the BP frame on the Home Screen
  – Touch Stop Intervals

• To stop **one single** interval reading
  – Press within the BP frame on the Home Screen
  – The next interval reading will occur at the appropriate time as scheduled
  – You can take BP readings in between scheduled intervals without interrupting the interval schedule
Taking an $\text{SpO}_2$ and Pulse Rate

- Uses Nellcor® or Masimo® technology
- Clean sensor (alcohol pad)
- No nail polish/artificial nails
- Warm/perfused extremity
- Place on opposite limb of blood pressure cuff if possible
- Pulse Rate comes from $\text{SpO}_2$ unless only a BP is taken, in which case the PR comes from the NIBP reading
**Direct Mode**

If the probe is left out of the well for 60 sec or a patient’s temperature is too cold for a predictive measurement (fast mode), the thermometer will go into a direct mode (as indicated). Readings must be measured for 3 min rectal/oral or 5 min axillary. There will not be an indicator beep when measurement is complete. User must record reading.

**Probe Covers**

*Use only Welch Allyn Probe covers.* Covers are designed specifically for SureTemp Plus and are single use only.

**Probe Well**

Well can be removed for cleaning. Blue probe/well for oral/axillary and red is for rectal.
Taking a Temperature Using SureTemp® Plus: Oral & Axillary

Oral Temperatures:

- Pull probe from well and apply probe cover
- Listen for short beep
- Place probe in sublingual pocket
- Thermometer will beep when reading is complete (4-6 secs)
- Press top of probe to release cover, then return probe to well

Proper probe placement is vital to obtaining an accurate reading

*Use ONLY Welch Allyn Probe Covers
Taking a Temperature Using SureTemp® Plus: Oral & Axillary

Oral Temperatures:

• Pull probe from well and apply probe cover
• Listen for short beep
• Place probe in sublingual pocket
• Thermometer will beep when reading is complete (4-6 secs)
• Press top of probe to release cover, then return probe to well

Axillary Temperatures:

• Pull probe from well and apply probe cover
• Listen for short beep
• Press Mode selection button to select Adult Axillary or Peds Axillary
• Place probe vertically in axilla (Think: “Align with the spine”)
• Thermometer will beep when reading is complete (12-15 secs)
• Press top of probe to release cover, then return probe to well

Proper probe placement is vital to obtaining an accurate reading

*Use ONLY Welch Allyn Probe Covers
Taking a Temperature Using SureTemp® Plus: Rectal

- Insert red probe and probe well into device
- Listen for short beep
- Pull probe from well and apply probe cover*
- Place probe in rectum (3/8 in)
- Lubrication is optional (if used, account for heating lubrication if at room temperature and use minimal amount)
- Thermometer will beep when reading is complete (4-6 secs)
- Press top of probe to release cover, then return probe to well

*Use ONLY Welch Allyn Probe Covers
Taking a Temperature using Braun® Thermoscan 4000: Tympanic

1. Remove the thermometer from the case and attach a new probe cover. The device turns on automatically.

2. Wait for the “ready” beep and place the probe snugly into the ear canal; correct probe placement is essential for accurate readings.

3. Press and release the Start Button. The thermometer will beep once. The green ExacTemp light above the Start Button flashes, indicating correct probe placement.

4. A long beep and a solid green ExacTemp light signals the end of an accurate measurement. Eject the used probe cover. For the next measurement, put on a new, clean probe cover.

5. If the probe is placed incorrectly or was moved while taking a temperature, the device beeps, the green ExacTemp light goes out and POS (Position Error) displays.

6. Press button to recall the last temperature.

7. To change default temperature scale: With the device off, press and hold the button for about 5 seconds. Release the button when desired scale is shown.

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End-tidal CO$_2$*

- Utilizes Covidien® etCO$_2$ technology
- Uses proprietary technology to reduce unnecessary alarms
- Provides Integrated Pulmonary Index

**Age Ranges for IPI:**
- 1-3 years old
- 3-6 years old
- 6-12 years old
- 13+ years old

*If applicable to your facility*
End-tidal CO$_2$

To use:
- Place sensor line on patient and connect sensor to monitor. Acknowledge connection message (if applicable)
- EtCO$_2$ and RR readings will appear on the device
- Do not put tape or adhesive over the Nafion® portion of the etCO$_2$ sensor line
End-tidal CO\textsubscript{2}

To use:

- Place sensor line on patient and connect sensor to monitor. Acknowledge connection message (if applicable)
- EtCO\textsubscript{2} and RR readings will appear on the device
- Do not put tape or adhesive over the Nafion® portion of the etCO\textsubscript{2} sensor line
- Adjust alarms as necessary
- Touch etCO\textsubscript{2} number to toggle between waveform and large numeric
- Touch “STOP” in waveform tile to pause monitoring of etCO\textsubscript{2}
Integrated Pulmonary Index (IPI)*

Displayed on a scale from 1 to 10

IPI is captured and analyzed to show upward and downward trends.

Requires $etCO_2$, RR, $SpO_2$, and PR readings to derive value.

Provides an early indication of changes in the patient’s respiratory status that may not be indicated by the current value of any of these four parameters individually.

<table>
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<th>Patient Status</th>
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<td>10</td>
<td>Normal</td>
</tr>
<tr>
<td>8-9</td>
<td>Within normal range</td>
</tr>
<tr>
<td>7</td>
<td>Close to normal range; requires attention</td>
</tr>
<tr>
<td>5-6</td>
<td>Requires attention and may require intervention</td>
</tr>
<tr>
<td>3-4</td>
<td>Requires intervention</td>
</tr>
<tr>
<td>1-2</td>
<td>Requires immediate intervention</td>
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*If applicable to your facility

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Acoustic Respiratory Monitoring (RRa)*

- Requires Masimo SpO₂ and RRa sensor use simultaneously
- Delivers respiratory rate via acoustic sensor
- Intended for adults weighing more than 66 lbs

*If applicable to your facility
• Connect RRa and SpO2 sensors to Masimo adaptor
• Apply sensor to patient’s neck
• Feel for placement by placing fingers on patient neck and having them verbalize “99”
• Placement should be located adjacent to trachea where the best vibration is felt
• Secure sensor to patient gown via adhesive anchor
• Initiate SpO2 monitoring
• Respiratory monitoring will begin
EarlySense®

- Monitors patient movement
- Fall prevention/bed exit alerts
- HR and RR surveillance/trending
  - HR takes ~ 1 min
  - RR takes ~ 3 min
- Turn indicator/reminder
- Age Range: For children and adults weighing > 22 lbs

*If applicable to your facility
1. Place sensor under the mattress face up between mattress and frame as shown.
2. Connect cable into the side of the CVSM as shown. Allow approximately 1 min for pulse rate and 3 min for respiratory rate.
1. Place sensor under the mattress face up between mattress and frame as shown
2. Connect cable into the side of the CVSM as shown. Allow approximately 1 min for pulse rate and 3 min for respiratory rate
3. Signal indicator will appear when device is searching for connectivity
4. L, M, H, EH will appear for patient movement
5. Alarms will occur when patient triggers exit alarm
6. Press turn icon to log patient turn

*If applicable to your facility
Manual Parameter Entry and Clear Function on CVSM 2.2

Automated parameters can now be manually entered or cleared, depending on configurations.

- All readings are marked with “Source: Manual” on the home screen, and are noted with an * in the review tab next to the value.

To manually enter or clear a value:
1. Press and hold the desired parameter frame
2. Type the desired value in the keypad
3. Press OK
4. To clear a value touch the backspace button and press OK
Changing Alarms in Intervals & Continuous Profiles

• From the Home screen, touch the alarm limits control in the selected parameter frame (i.e. NIBP or Pulse Rate)
• Enter the desired upper and lower alarm limits using the up/down arrows or keypad

Note: Alarms may also be adjust by touching the Alarms tab.
Changing Alarms in Intervals & Continuous Profiles

- From the Home screen, touch the alarm limits control in the selected parameter frame
- Enter the desired upper and lower alarm limits using the arrows and/or keypad
- To turn alarm limits on or off, use the ON/OFF toggle button
- If alarm limits are off, no visual or audio alarm signals will occur for that parameter. The alarm icon changes on the Home tab in that parameter frame as shown

Note: Alarms may also be adjusted by touching the Alarms tab
• Alarms occur when vital sign measurements fall outside of set alarm limits
• The light bar on the handle of the monitor illuminates as follows:
  – Flashing red for high priority alarms
  – Flashing amber for medium priority alarms
  – Constant amber for low priority alarms
  – Cyan for very low priority/technical alarms
• To silence/suspend an alarm, touch the triangle in the top left corner OR touch the numeric value in the highlighted parameter frame
Patient Rest Mode

To use:
1. Touch alarms
2. Choose “Patient rest mode on”

If devices are connected to a Connex® Central Station, you may turn on patient rest mode.

This feature allows disabling of audible alarms at the bedside, but keeps alarms on at CS.

If connectivity is lost from the CS, alarms will revert to previous audio state.
Entering Manual Parameters*

- From the Home screen touch the Manual parameters area (height, weight, pain, respirations) pictured below
- Touch parameter box and use keypad to enter desired number
- Touch OK to confirm and return to the Home screen. Note: entries will not be saved unless you touch OK

*If applicable to your facility
Entering Patient Modifiers*

- From Home screen touch **Manual parameters** area
- Scroll down to Modifiers
- Enter desired information (BP site, cuff size, etc.)
- Touch OK to accept or Clear to delete all entries
- Entries will not be saved unless you touch OK
- Modifiers can be customized by facility (up to 20)*

*If applicable to your facility
Saving and Reviewing Vitals

1. When vitals are complete, touch the Save button
   - Data then saves to Review tab and the screen is cleared
   - In Intervals and Continuous Profiles, vitals are saved to the Review tab automatically

2. Touch the Review tab
   - Most recent data is at the top of the screen
   - 400 readings can be stored for up to 24 hours

3. To select a vital sign, touch the box to the left of the reading; a checkmark will appear
   - Options:
     • Send to send vitals to the network (if applicable)
     • Print to print vitals (if applicable)
     • Delete to delete vitals

4. If connected to a network, an envelope indicates the vitals have been sent to and received by Connex
   - If in continuous mode, the review will reflect only the continuously monitored patients vitals and the format will change
   - There is no Save button on the Continuous Home screen as all data entry will automatically flow into Review
Cleaning

- See DFU for cleaning instructions for each accessory
- For CVSM and Accessory Cable Management stand:
  - Clean on a routine basis according to your facility’s protocols and standards
  - The following agents are compatible with the monitor:
    - Hydrogen Peroxide Cleaner Disinfectant Wipes (Clorox® Healthcare)
    - Dispatch Hospital Cleaner Disinfectant Towels with Bleach (Clorox® Healthcare)
    - 70% isopropyl alcohol
      - Wipe the monitor with a clean cloth slightly dampened with 70% isopropyl alcohol
    - 10% chlorine bleach solution
      - Wipe the monitor with a clean cloth slightly dampened with a 10% bleach and water solution
      - Rinse with a clean cloth slightly dampened with water
      - Allow the monitor surface to dry for a minimum of 10 minutes before using.
- Do not submerge or spray anything directly onto device
Advanced Settings

• Accessible only by code; See Biomed for access
  – Contains settings for display, parameters, alarms, and data management
  – Allows users to clone devices via USB drive
• See Directions for Use for further information regarding Advanced Settings
• Separate instruction available for appropriate personnel. Contact your local Welch Allyn Sales Rep or Clinical Consultant.
Thank you for choosing Welch Allyn

Customer Care: 1-800-535-6663

Website: www.welchallyn.com