Colleague CX

V O L U M E T R I C   I N F U S I O N   P U M P
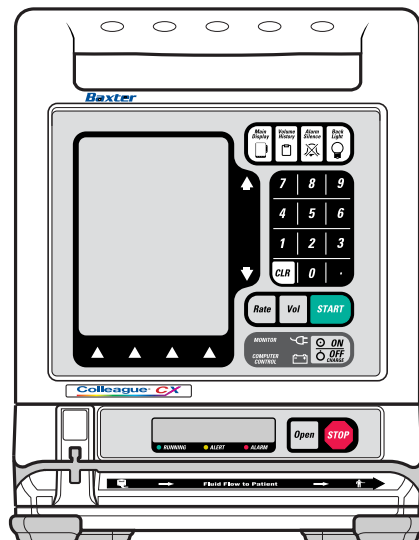
PRODUCT CODE: 2M8161

UIM MASTER SOFTWARE VERSION 5.00.00 AND HIGHER

Baxter

Prior to using this pump, read this manual carefully to fully understand the pump's functionality and to ensure safe and proper operation.

Warning

There are risks associated with using anything other than the recommended sets with this device. Administration sets designated for use with this device are identified in Chapter 3 of the Operator's Manual. Baxter's warranty on this device will be null and void and Baxter will assume no responsibility for incidents which may occur if the product is not used in accordance with product labeling.

The warnings and notes contained within the Operator's Manual are incorporated by reference into this Addendum. Please refer to the appropriate section in the Operator's Manual for the related warning or note.

Computer Software Copyrights

©Copyright 1996 - 2001, Baxter Healthcare Corporation. All rights reserved.

For use only by Baxter Healthcare Corporation. The software contains proprietary information belonging to Baxter Healthcare Corporation. The software must not be reproduced or disclosed to others without prior written approval. Any unauthorized use of this information may subject the user to substantial liability.

Documentation Copyrights

Duplication or distribution of this manual and any information contained within is strictly prohibited without the express written permission of Baxter. This manual and any information contained within, may not be reproduced, distributed, or transmitted in any form, or by any means, for any purpose, without the express written permission of Baxter. To order additional copies of this manual, or other related manuals, contact your local Baxter Service Center.

Disclaimer

The information in this document has been carefully examined and is believed to be entirely reliable. However, no responsibility is assumed for inaccuracies. Furthermore, Baxter reserves the right to make changes to any products herein to improve readability, function, or design. Baxter does not assume any liability arising out of the application or use of any product or circuit described herein; neither does it cover any license under its patent rights nor the rights of others.

Trademark Information

Colleague, Colleague CX, Colleague Guardian, Personality, Personalities, Pump Personality, Pump Personalities, Baxter, the **Baxter wordmark** and the shape of the On/Off clamp are trademarks of Baxter International Inc. in the U.S. Other trademark applications pending. Other product names appearing in this manual are the property of their respective owners.

Patent Information

The Colleague Pump and its accessories are covered by one or more U.S. and foreign patents or patent applications pending. Please refer to the Operator's Manual or the pump patent label for the patent list.

Overview

Note: Use of this device in a homecare setting may result in interference with non-medical electrical equipment that is not in compliance with current standards for electromagnetic interference.

Note: Because the label library is different than in previous versions of Colleague CX Pump software, configuration data is not transferable between pumps with software version 5.00 and pumps with older software versions.

The Colleague CX Volumetric Infusion Pump has a multicolor Main Display screen and several programming capabilities not available in monochrome Colleague pumps. This addendum provides information on the following features unique to Colleague CX Volumetric Infusion Pumps with User Interface Module (UIM) master software version 5.00.00 or higher:

■ Delay Start mode lets you program an infusion to start at a later time. (The Delay Start mode is an additional advanced feature added to Chapter 5 of the Operator's Manual.)

■ The device time and date may be adjusted by selecting the delay start program mode immediately after power up. See "Delay Start Mode" on page 3 of this addendum for more information.

■ The Colleague Guardian feature allows authorized hospital personnel to preset drug parameters for some or all drugs in the pump's Label Library, including custom labels, based on hospital protocol.

Using the Colleague Guardian feature, the following values can be preset for a Label Library item that requires dose programming:

- dose limits
- dose values
- concentration values
- diluent volumes
- drug amounts.

If an infusion is programmed outside the preset Colleague Guardian dose limits, the pump warns the user and does not permit the out-of-limit dose to be delivered. The user can override the dose if appropriate or re-enter the correct dose.

■ The pump has a 10-color Main Display. The colors are summarized in the following table.

Note: For optimum color, view the display from a position directly in front of the screen.

Color	Significance
White	• Battery Charge Level icon • Flow Check icon • Lock icon • Prompt line (with dark blue lettering) • All soft keys • Background of all pop-ups
Light red	• Stop icon except on Advance Air and Prime pop-ups • Status line during alarms or failures • Dose information on Main Display if the user has overridden a limit programmed in the Colleague Guardian feature.
Dark red	• Stop icon on Advance Air and Prime pop-ups • AIR icon on Advance Air screens • Colleague Guardian limits warning, dose data, and **Cancel Dose** soft key on Colleague Guardian limit warning pop-ups
Light green	• Drop icon during infusion, except on Advance Air and Prime pop-ups
Dark green	• Drop icon during Advance Air and Prime, FLUID icon in Advance Air pop-up, and **Accept Dose** soft key on Colleague Guardian limit warning pop-ups
Light blue	• Piggyback icon
Dark blue	• Wristwatch icon on Main Display during Delay Start infusions • Screen backgrounds • ⇧⇩ arrows on Programming Modes select list
Yellow	• Status line during alerts • Highlighted programming fields • Programmed values • Wristwatch icon during Delay Start programming • Colleague Guardian feature icon (mortar and pestle) • Highlighting on programmed dose values when values are outside the Colleague Guardian limits
Gray	• Unavailable options on Options Menu
Black	• Shadow outline behind pop-ups and select lists

Delay Start Mode

Note: The Delay Start information supplements the advanced pump operating instructions provided in Chapter 5 of the Colleague Pump Operator's Manual. The Delay Start feature is available on Colleague CX and Colleague 3 CX Pumps only.

Delay Start Overview

Delay Start is a configurable feature available through the Programming Modes menu. Delay Start lets you program an infusion to begin at a specified time, in 24-hour format. The pump starts delivering the programmed infusion at the programmed start time, and runs until the infusion is completed or the pump is stopped.

Delay Start can be enabled or disabled via the `Enabled Infusion Modes` option on the `Infusion Modes and Features` Menu by authorized personnel only. The default setting for Delay Start is `Disabled`.

Delay Start can be used only for Primary Rate-Volume infusions. The pump must be stopped to enter Delay Start mode.

A completely programmed Delay Start infusion must have valid Rate, Volume to be Infused, and Start At information entered and must be initiated with a *START* key press. When the *START* key is pressed from the Delay Start programming screen, the pump enters Delay Start mode and the pump module is powered off. A Delay Start infusion cannot be started with active alarms or alerts except for the Channel Stopped alert.

A completely programmed Delay Start infusion starts automatically when the pump's clock reaches the programmed Start At time. If the programming screen is displayed when the Delay Start infusion begins, the display will change to the Main Display.

Note: If you press the *START* key at the same time as the Delay Start program is scheduled to start, the infusion will automatically start the following minute.

Example: if the current time is 12:01, the Delay Start infusion is programmed to start at 12:01, and you press the *Start* key at 12:01, the Delay Start infusion will start when the pump's clock changes to 12:02.

When a Delay Start infusion has been programmed, a wristwatch icon is displayed on the Main Display screen.

When a Delay Start infusion starts, the pump's infusion mode changes to Primary Rate-Volume and shows the programmed infusion information. The wristwatch icon changes to the stop icon or the drop icon, depending upon whether the infusion is stopped or running.

The **Piggyback** soft key will not be available until the Delay Start infusion is automatically initiated if the active infusion is Delay Start. Programmed piggyback infusion information is retained when a Delay Start infusion is programmed. The piggyback settings can be accessed after the Delay Start infusion automatically initiates.

If desired, you may lock the front panel after programming a Delay Start infusion.

To view programmed Delay Start settings prior to infusion, press the **Primary** soft key, the *Rate* key, or the *Vol* key. DELAY will appear on the pump module display. If no action is taken, the screen returns to the Main Display screen after two minutes.

If desired, a label may be added without canceling the Delay Start.

If the Rate or Volume to be Infused is changed on the corresponding programming screen, the Start At information is cleared.

To place the pump back into Delay Start mode, enter a time in the Start At field and press the *START* key.

Although you can program a Delay Start infusion without tubing present in the pump module, an administration set must be loaded before the Delay Start infusion automatically initiates, or a Tube Not Loaded alarm will occur when the pump tries to initiate the infusion.

When a Delay Start infusion is not completely programmed and is the active infusion, Incomplete Program is displayed on the Main Display, and the stop icon is displayed to the left of the infusion information.

Programming a Delay Start Infusion

1. From the Primary Rate-Volume screen, press the **Change Mode** soft key.

   The **Programming Modes** screen is displayed.

2. Use the ⇧⇩ keys to select **Primary Delay Start** from the Programming Modes select list (Figure 1).
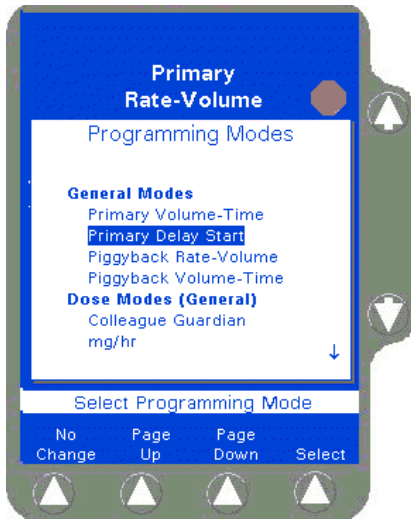

Figure 1   Programming Modes Menu

Figure 2   Delay Start Time Confirmation Screen

Note: The first time you try to program a Delay Start infusion after the pump is powered on, a Time Setting window is displayed so you can confirm or change the pump's current time setting. The Time Setting window displays the set time, month, day, and year. (Figure 2).

If the current date reflects the year 1990, a device error may have occurred. Remove the pump from service and have it checked by authorized service personnel.

3. If the current time and date are correct, press the **Done** soft key.

Note: **Changing the current time or date clears the pump's volume history information.** To record volume history before changing time, press the *Volume History* key. Press the **Done** soft key to return to the Set Time and Date screen.

4. If you wish to change the time and/or date, use the **Increase** or **Decrease** soft keys (or the pump's numeric keypad) to enter the correct time and date.

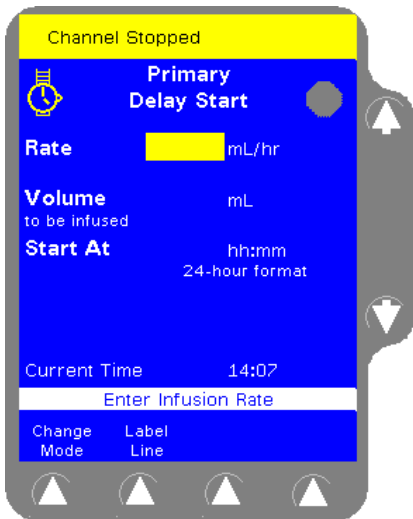5. Press the **Done** soft key when you finish changing the time or date.

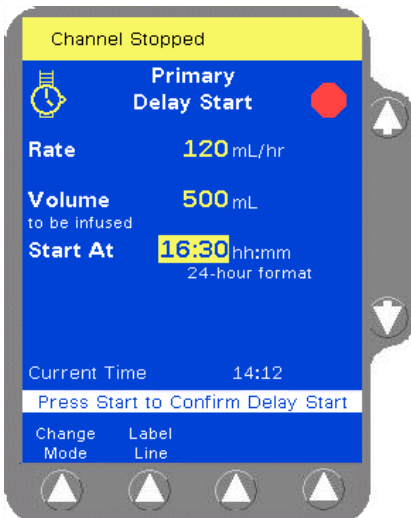**Figure 3** **Delay Start Programming Screen**

Figure 4 **Delay Start Infusion Programming**

The Primary Delay Start programming screen (Figure 3) is displayed.

6. Using the numeric keypad, enter the desired infusion rate for the delayed infusion in the **Rate** field.

7. Press the **Vol** key or the ⇩ key to highlight the **Volume to be Infused** field.

8. Use the numeric keypad to enter the desired Volume to be Infused for the delayed infusion.

9. Press the ⇩ key to highlight the **Start At** field.

10. Enter the desired starting time for the delayed infusion in 24-hour hh:mm format. You may enter a time of up to 23 hours from the current time. A time of 00:00 corresponds to 12:00 midnight and a time of 23:59 corresponds to 11:59 P.M.

    Example: If you want the infusion to start at 4:30 P.M., use the numeric keypad to enter **16:30** in the **Start At** field. (Figure 4).

    If you try to enter a Start At time greater than 23 hours and 59 minutes (23:59), the Start At field displays ****:****. You must enter a valid Start At time.

    Example: If you want the infusion to start at 4:30 P.M. (16:30), but accidentally enter 26:30, ****:**** is displayed in the **Start At** field and **Enter Start At** is displayed on the prompt line. Re-enter the correct start time.

Figure 5   Programmed Delay Start Infusion

Pressing the **Change Mode** soft key and selecting another programming mode clears the Start At field. If no information is entered for the selected infusion mode, Delay Start remains the active mode.

If you enter infusion information for the mode selected from the Programming Modes select list, all programmed Delay Start values are cleared and the selected mode becomes the active mode.

Note: The Delay Start infusion will not start at the programmed time, unless you press the *START* key to initiate the infusion after programming.

11. When all fields contain valid values, the prompt line displays Press Start to Confirm Delay Start. Press the **START** key to initiate the Delay Start infusion so it will begin at the programmed start time. The screen displays the wristwatch icon and the programmed start time for the Delay Start infusion (Figure 5).

Exiting Delay Start Mode

To exit Delay Start mode, press the **STOP** key while viewing the Delay Start programming screen. The Start At time is cleared. Delay Start is still the active infusion mode, but the infusion has not been completely programmed.

Note: You cannot place a completely programmed Delay Start infusion into Standby.

Note: If you place the pump into Standby with an incompletely programmed Delay Start infusion, the Start At time is cleared.

Note: If a Manual Tube Release alarm occurs with a completely programmed Delay Start infusion, the Delay Start infusion is canceled and the Start At time is cleared.

Note: If the pump is powered off, the Start At time for any Delay Start infusions will be cleared, canceling the Delay Start infusion.

Powering On with Delay Start Infusions

If the pump was powered off while in Delay Start Infusion mode, and you power on the pump within the 5-hour memory retention period, the pending Delay Start mode is canceled and the Start At time is cleared. Delay Start is still the active infusion mode, but the infusion has not been completely programmed.

The Delay Start mode will be canceled by using the `Change Personality` pop-up and pressing the **Select** soft key or by pressing the **New Patient** soft key.

Label Library

The 64 labels stored in the pump's library have been changed to those shown in the following table. Please refer to this list instead of the list provided in the Operator's Manual.

The 13 application labels appear first in the list, followed by the 51 drug labels.

Note: If your institution has programmed custom labels, they will be displayed in alphabetical order within the list of drug names.

Name	Abbreviation
Application Labels	
Antibiotic	ANTIBIOT
Arterial Line	ARTERIAL
Blood	BLOOD
Central Line	CENTRAL
Epidural	EPIDURAL
Irrigation	IRRIGATE
Keep Vein Open	KVO
Lipids	LIPIDS
Maintenance Line	MAINTENA
Subcutaneous	SUBCUTAN
Total Parenteral Nutrition	TPN
Umbilical Arterial Catheter	UAC
Umbilical Venous Catheter	UVC
Drug Labels	
Abciximab	ABCIXIMA
Alfentanil	ALFENTAN

Name	Abbreviation
Alteplase	ALTEPLAS
Aminophylline	AMINOPHY
Amiodarone	AMIODARO
Amrinone	AMRINONE
Atracurium	ATRACURI
Carboplatin	CARBOPLA
Carmustine	CARMUSTI
Cisatracurium	CISATRAC
Cisplatin	CISPLATI
Cyclophosphamide	CYCLOPHO
Diltiazem	DILTIAZE
Dobutamine	DOBUTAMN
Dopamine	DOPAMINE
Doxorubicin	DOXORUBI
Eptifibatide	EPTIFIBA
Esmolol	ESMOLOL
Etoposide	ETOPOSID
Fentanyl	FENTANYL
Fluorouracil	FLUOROUR
Heparin Sodium	HEPARIN
Ifosfamide	IFOSFAMI
Isoproterenol	ISPROTER
Ketamine	KETAMINE
Labetalol	LABETALO
Lidocaine	LIDOCAIN
Magnesium Sulfate	MAGNESIU
Methohexital	METHOHEX
Methotrexate	METHOTRE

Name	Abbreviation
Midazolam	MIDAZOLA
Milrinone	MILRINON
Mivacurium	MIVACURI
Morphine Sulfate	MORPHINE
Naloxone	NALOXONE
Nicardipine	NICARDIP
Nitroglycerin	NITROGLY
Nitroprusside	NITROPRU
Norepinephrine	NOREPINE
Octreotide	OCTREOTI
Oxytocin	OXYTOCIN
Paclitaxel	PACLITAX
Phenylephrine	PHENYLEP
Plicamycin	PLICAMYC
Procainamide	PROCAINA
Propofol	PROPOFOL
Prostaglandin E1	PROSTAGL
Rocuronium	ROCURONI
Sufentanil	SUFENTAN
Tirofiban	TIROFIBA
Vecuronium	VECURONI

Colleague Guardian Feature

Note: Information about the Colleague Guardian feature included in this addendum supplements the advanced pump operating instructions provided in Chapter 5 of the Colleague Pump Operator's Manual.
The Colleague Guardian feature is available on Colleague CX and Colleague 3 CX Pumps only.

Colleague Guardian Feature Overview

The Colleague Guardian feature allows dose limits to be preset for any drug label in the pump's label library, including custom labels. The Colleague Guardian feature helps prevent inadvertent medication programming errors by warning you if a programmed dose is not within the dose limits preset by your institution. The Colleague Guardian feature works like this:

- Authorized personnel at your institution configure Colleague Guardian limits for a label. The limits apply to that label whenever the label is selected for an infusion.

- Authorized personnel enable or disable the labels independently for each of the pump's Personalities. The Colleague Guardian limits for a specific label are the same regardless of the selected Personality.

- If you select a Colleague Guardian label when programming an infusion, and if the dose you program is not within the limits configured for that label, the pump displays a warning message to alert you. You can then do one of the following:
  - Reprogram the pump if there is an inadvertent programming error, or
  - Override the Colleague Guardian limits if appropriate for the patient's therapy. Overrides are stored in the pump's history log.

- Colleague Guardian labels are available for primary infusions only.

- You can program a piggyback infusion for delivery with a Colleague Guardian primary infusion.
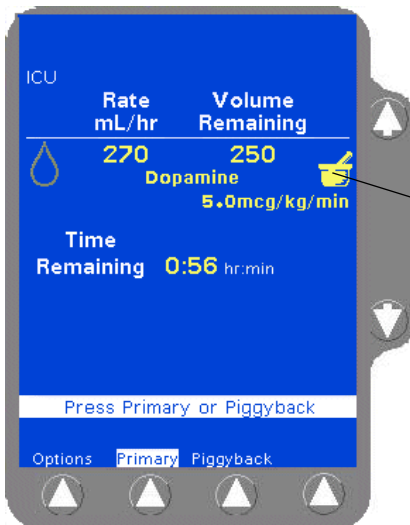
Infusions that utilize the Colleague Guardian feature are identified on the pump's information and programming screens by the mortar and pestle icon ⚗ to the right of the infusion information (Figure 6).

ICU
Rate
mL/hr

Volume
Remaining

270   250
Dopamine
5.0mcg/kg/min

Time
Remaining 0:56 hr:min

Press Primary or Piggyback

Options Primary Piggyback

Mortar and
pestle

Figure 6   Colleague Guardian
Feature Icon

Using the Colleague Guardian Feature

The Colleague Guardian feature is available from the Rate-Volume programming screen or from the Programming Modes menu.

! WARNING !   **Always confirm that the parameters you program match the concentration on the label of the fluid container you are hanging before beginning the infusion.**

Note: The following must take place before you can use the Colleague Guardian feature:

- Colleague Guardian dose modes and limits must be configured for some or all drugs in the pump's label library including custom labels.

- The dose mode(s) that were selected for the Colleague Guardian labels must also be enabled in the pump's Personality.

- The Label Library must be enabled in the pump's Personality.

- One or more labels for which Colleague Guardian limits have been configured must be enabled in the pump's Personality(ies).

- A Personality with configured and enabled Colleague Guardian labels must be selected when the pump is powered on.

To use the Colleague Guardian feature:

1. Power on the pump and select the desired Personality as described in the Operator's Manual.

2. When the programming screen is displayed, press the **Colleague Guardian** soft key (Figure 7).
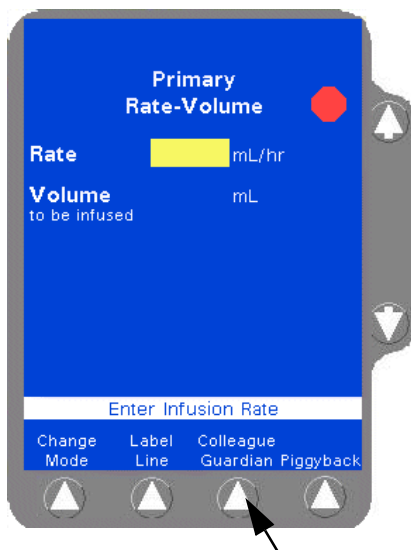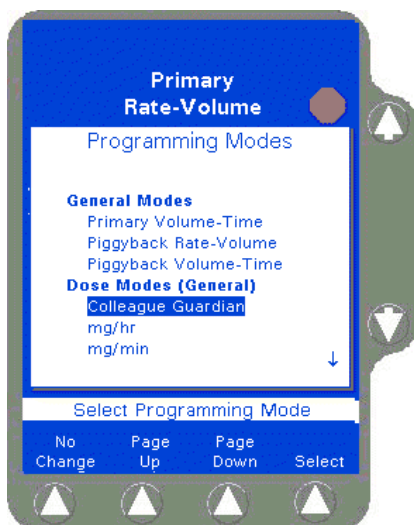

Figure 7   Colleague Guardian Soft Key

Figure 8   Selecting the Colleague Guardian Feature from the Programming Modes Menu

Note: You can also access the list of Colleague Guardian drug labels by pressing the **Change Mode** soft key, then selecting Colleague Guardian from the Programming Modes menu (Figure 8).

If the currently selected Personality has no Colleague Guardian labels configured, then Colleague Guardian is not displayed in the Programming Modes Menu.
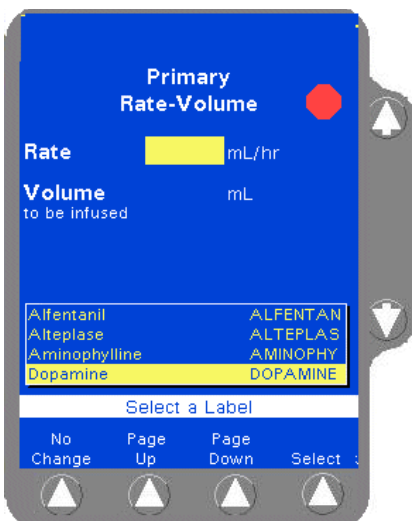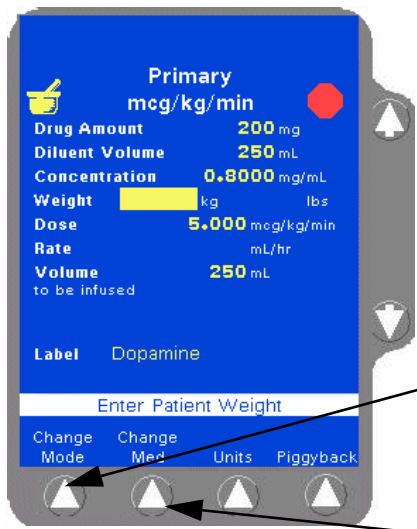

Figure 9   Label List Showing Colleague Guardian Drugs

The drugs for which Colleague Guardian limits have been configured are displayed in a pop-up window. Figure 9 shows an example. In this example, Colleague Guardian limits have been configured for four labels enabled in the currently selected Personality.

3.   Use the ⇧⇩ keys to select a label from the list, then press the **Select** soft key.
The programming mode changes to the mode preconfigured for the label you have selected.

Figure 10 Change Med and Change Mode Soft Keys

Change Mode Soft Key

Change Med Soft Key

Figure 11 Typical Dose Mode Programming Screen

If you want to select a different Colleague Guardian label for the infusion, press the **Change Med** soft key (Figure 10). Use the ⇧⇩ keys to select a different label, then press the **Select** soft key.

Note: If you do not want to use any of the Colleague Guardian labels for the infusion, press the **Change Mode** soft key and select a different infusion mode from the Programming Modes menu. You can then program an infusion as described in the Operator's Manual and choose a label from the pump's label library if desired.

Note: When you select a label from the Colleague Guardian label list, the programming screen is displayed, showing the dose mode, drug amount, diluent volume, and concentration programmed in the Colleague Guardian feature. You cannot change these values. See Figure 11 for an example.

The Dose may be pre-filled with the Colleague Guardian preset value. You can change the dose value if the dose for your therapy differs from the preset dose.

4.   Enter the patient's weight (in pounds or kilograms), and either the dose or the flow rate. Check the values displayed on the screen, then press the **Confirm Settings** soft key to proceed using the programmed values.
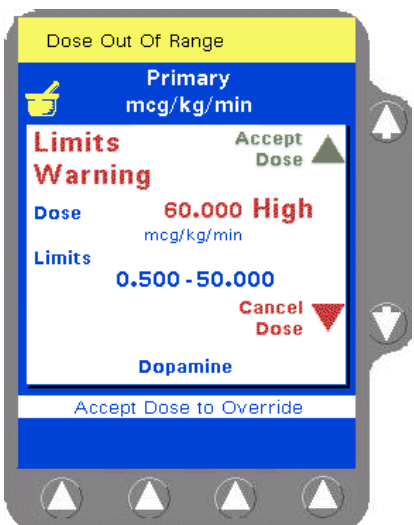
Figure 12 Select Weight Unit Pop-Up

Figure 13 Limits Warning Pop-Up

5. For neonates, you may want to enter the weight in grams instead of kilograms. To change the weight unit, press the **Units** soft key. A pop-up is displayed (Figure 12), allowing you to choose between kilograms and grams as the weight unit.

6. Highlight the desired unit, then press the **Select** soft key.

7. The pump checks that the values you have entered are within the limits configured for the selected drug in Colleague Guardian.

If the values you entered result in a dose either higher or lower than the programmed limits, an alert tone sounds and a pop-up similar to the one shown in Figure 13 is displayed to notify you. The pop-up also shows the dose limits for the selected label and whether the dose you entered was too high or too low.

8. If you want to override the Colleague Guardian limits and proceed with the infusion as you programmed it, press **Accept Dose** (⇧ key). To cancel the dose and reprogram, press **Cancel Dose** (⇩ key) to return to the programming screen. You can then either enter a dose within the Colleague Guardian limits, or choose a different label by pressing the **Change Med** soft key.

*Figure 14 Colleague Guardian
            Infusion Running*

9. When you have finished programming, press ***START*** to begin the
   infusion. Colleague Guardian infusions are indicated by the mortar
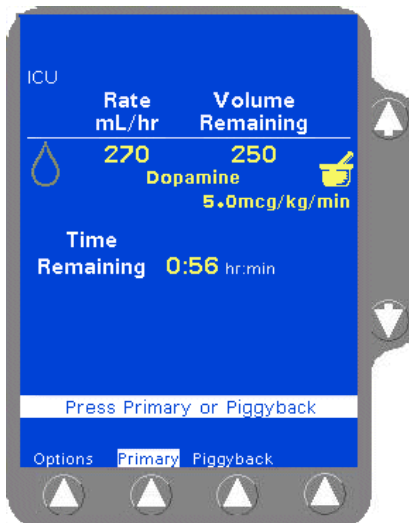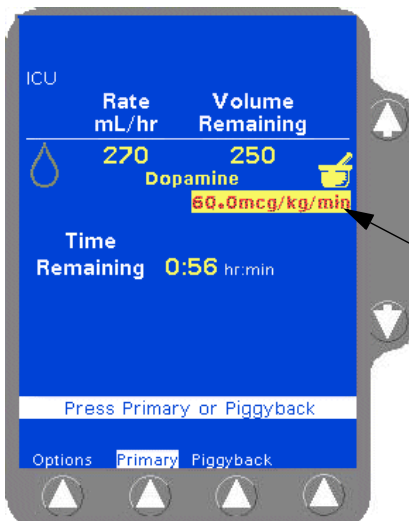   and pestle icon on the Main Display screen (Figure 14).

*Figure 15 Infusion that Overrides
            Colleague Guardian
            Limits Running*

Note: If you overrode Colleague Guardian limits when you programmed
an infusion, the dose data and mode are displayed in red on a yel-
low highlight (Figure 15) to indicate that the programmed dose is
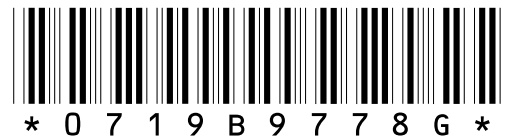outside of the Colleague Guardian limits.

Red text on yellow highlight indicates that Colleague
Guardian limits were overridden for this infusion.

This manual was printed on paper stock created with 20% de-inked post-consumer waste fiber and a total of 100% recycled fiber.

Baxter

||||| |||| || ||| |||| || |||| ||| |||| |||| || ||| |||| |||
* 0 7 1 9 B 9 7 7 8 G *