Infusion
User Manual

Revision 7.0

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1 Infusion

For general and detailed information about the Product environment and the instructions for use of the Control Bar software see the specific documents of the Product. The knowledge and understanding of these documents is mandatory for an appropriate and safe use of Infusion, described in this document.

1.1 Introduction

The Infusion module acquires online data from the infusion systems. Infusion makes it possible to document drug infusions in progress acquiring and displaying data as drug concentration, dosage, pressure in the drip and alarms.

1.2 Supported devices

For the updated list of supported devices pleas contact Ascom UMS or its Distributor.

1.2.1 Information for the user

The Infusion module does not monitor the infusion pumps; it rather acquires, displays and records data provided by the infusion pumps. This information is not provided in real time and must be used solely for documentation purposes.

1.2.2 Module selection

To select the Infusion module click the corresponding icon on the side toolbar.

If no patient is selected the “Ward station” screen opens, displaying all the pumps connected to each patient in the ward (Fig 1).
If a patient is already selected the “Patient station” screen opens, displaying all the pumps connected to the selected patient (Fig 12).

1.2.3 Patient selection

There are two ways to select a patient:

1. Using the patient search and selection functionalities in use in your specific healthcare organization. For example, if installed, the Patient Explorer module (described in the document *USR ENG Patient Explorer*).
2. Selecting a patient on the ward station, by clicking his/her “bed card” (see next paragraph, page 4). The selected patient becomes the current Infusion patient.

When Infusion returns to ward station (either after user action or after time out), the patient can optionally be de-selected (no current patient) or remain selected, depending on configuration. See next paragraphs for the screens description.

1.2.4 Generic patient mode

The Infusion module can acquire data without a selected patient. It is this way possible to monitor the infusion trends for a bed, without referring to a specific patient. The bed must be configured in the workstation domain, but if no patient is specified for the bed Infusion displays the infusion trends as referred to the bed, and not to the patient.

1.2.5 Central and Bedside workstations

A workstation can either be central or bedside. A Central Workstation works on a set of beds, named “Domain”. The domain definition (i.e. the definition of the set of displayed beds) is defined by configuration. Infusion home page of a Central Workstation is the “Ward Station” screen (see Fig 1).

A Bedside Workstation works on a single bed, with or without patient. The Bed is determined by configuration. The Infusion home page of a Bedside Workstation is the “Patient Station” screen (see Fig 12). A Bedside Workstation cannot display the “Ward station” screen.

1.2.6 Screen Timeout

From any screen, after a certain period of inactivity (defined by configuration), the system goes back to the Home Page (“Ward Station” screen for Central Workstations and “Patient Station” screen for Bedside Workstations).

1.2.7 “Pharmacokinetic” mode

Some pumps con be set to “Pharmacokinetic” mode. I.e. a target value is set on the pump. The target value can be either “plasmatic” or “effect site”. When this mode is active the Infusion module:

a) displays specific icons and other graphic elements to indicate that the infusion is in “pharmacokinetic” mode;
b) displays the “Target” value anywhere it is relevant.

1.3 Ward station

The “Ward station” screen displays all the pumps connected to each patient in the domain (Fig 1).

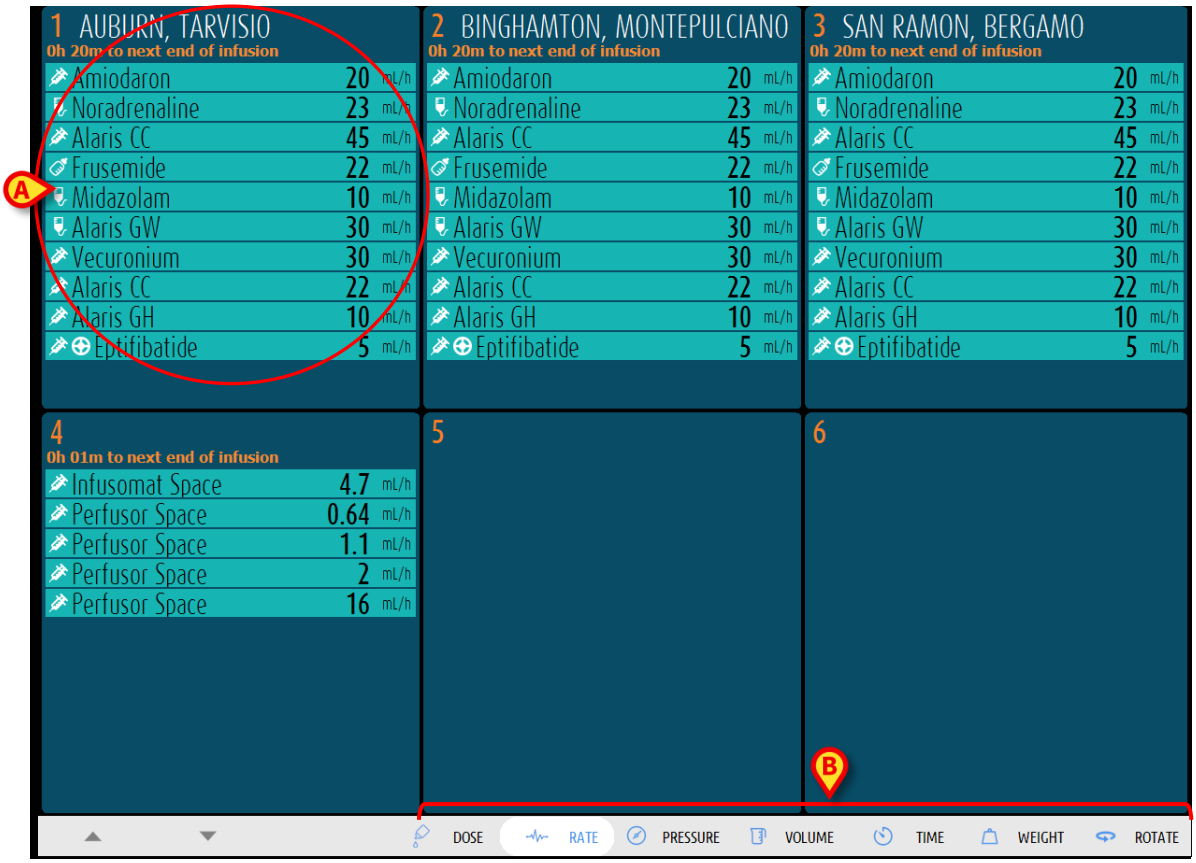


Fig 1

The screen is divided in rectangular areas (Fig 1 **A**). Every area, called “bed card”, refers to a bed and contains a schematic representation of all the pumps connected to a patient.

When an alarm/warning condition occurs a specific sound is provided. The sound is differentiated for alarms and warnings. The icon shown in Fig 2 is displayed in the background. Click the icon to make it disappear (meaning that the alarm condition has been taken in charge).

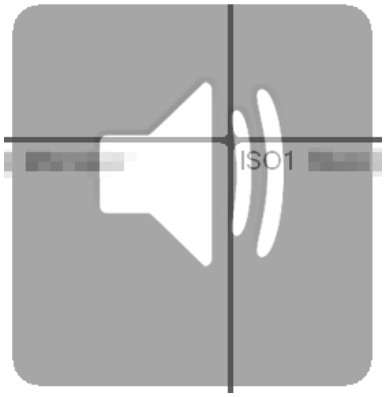


Fig 2

On top of each “bed card” the bed number and patient name are displayed (Fig 3 **A**). Below the patient name the time remaining until the next end of infusion is specified (Fig 3 **B**).

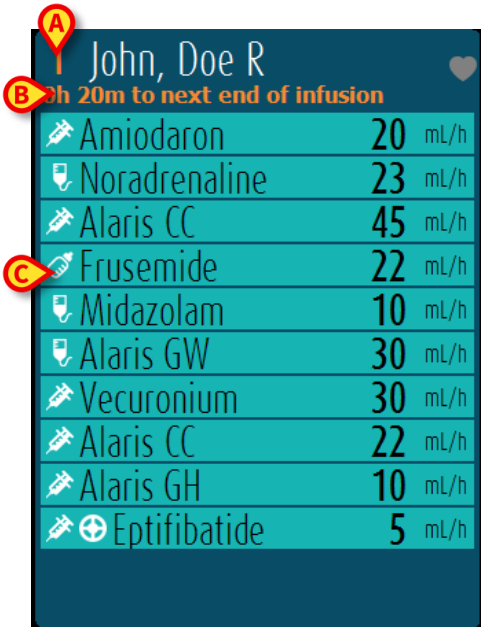


Fig 3

The rows indicated in Fig 3 **C** represent the connected pumps. Each row represents a pump. The rows can appear in four colors:

1) Blue if the pump is infusing (Fig 4). The icon displayed on the left depends on the type of pump/infusion;

Fig 4

2) Grey if the pump is paused.

3) Cyan if the pump is sending a low-priority alarm; in this case a phrase describing the kind of warning currently occurring appears inside the box, alternating with the name of the infused drug/pump name.

4) Yellow if there is a “Medium priority alarm” on the pump; in this case a phrase describing the kind of warning currently occurring appears inside the box, alternating with the name of the infused drug/pump name.

5) Red if there is a “high priority alarm” on the pump; in this case a phrase describing the kind of alarm currently occurring appears inside the box, alternating with the name of the infused drug/pump name.

If the connected pump sends the name of the infused drug, the drug name is displayed in the corresponding pump-box. If the connected pump does not send the name of the infused drug, the pump name is displayed in the corresponding pump-box.

If the pump provides the drug name, then the corresponding pump-box displays the drug name. If the drug name is not available, then the corresponding pump-box displays the pump name. The rule that the Infusion system adopts is:
If the pump reports a DrugName then the DrugName is displayed.
If the pump reports a DrugName empty then the pump name is displayed.
If the pump reports as DrugName “Unknown” then Infusion displays Unknown.

Possible icons displayed in the pump box:

The following icons can be displayed in the pump box, on the left of the pump/drug name.

Volumetric pumps – The icon indicates volumetric pumps

Enteral pumps – The icon on the left of the box indicates enteral pumps.

Syringe pumps – The icon on the left of the box indicates syringe pumps.

Critical drugs – Any drug can be labelled as critical. In this case an exclamation mark is displayed before the drug name.

The "critical drugs" feature shall be considered only as a support for the drug management workflow.

See Paragraph 1.7.2 for the critical drugs setup procedure. If a drug is labelled as "critical", a specific, different sound is provided when alarmed.

Soft limit exceeded – The G icon is displayed before the drug name when the soft-limit (set-up on the pump) is exceeded. If the mouse pointer is positioned over the icon, a tooltip provides additional information.

Pharmacokinetic mode – The and icons indicate that the pump is set to "Pharmacokinetic" mode. See Fig 5 and related text for more information.

If the pump is set to "pharmacokinetic" mode, when the "Dose" button is selected the value displayed is not the "Dose rate" but the target value instead. This is highlighted either by the icon or by the icon, displayed in the pump box, alongside the status icon. The first icon is displayed when a "plasmatic concentration" target value is set, the second one is displayed when an "site effect" target is set.
See Fig 5 for an instance.

Fig 5

Each pump-box provides - on the right - information on the current infusion (Fig 6 **A**).

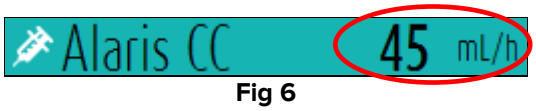


Fig 6

The parameters that can be displayed are:

- dose rate (if the pump is working in "pharmacokinetic" mode, the target value is displayed)
- volume rate,
- totale infused volume,
- infusion circuit pressure (in the configuration a "pressure threshold" can be set up. When this threshold is exceeded the Pressure value is displayed in yellow.),
- time remaining to the end of the infusion,

- patient weight set on the pump,
- rotate mode, displaying all the available values in rotation,
- profile string, if defined in the configuration, referring to the patient/drug.

The displayed value depends on the button selected on the Command Bar (see page 9).

There are three display modalities for the “bed cards”, depending on the available space for the boxes and the number of connected pumps for each patient. These are normal, compact (showing only part of pump data) and minimal (showing no pump data).

In the upper right corner of every bed card different icons can be displayed (Fig 7 **A**). Click the icons, or position the mouse pointer over them to display a tooltip providing additional information. The icons’ meaning and number is set by configuration. Contact your system administrator for more information.

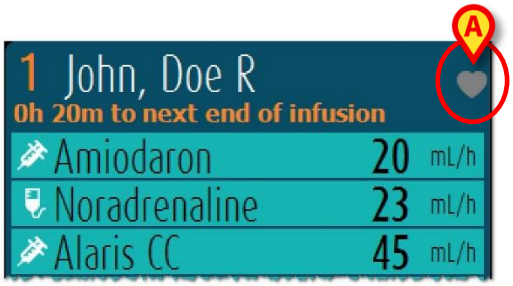


Fig 7

Zoom in- Zoom out functionalities

Click on the bed number or the Patient Name to zoom in the “bed card”. Any click inside this zoomed “bed card” or anywhere else outside of it will cause the “bed card” to return to normal size and position. The zoom-in action can be performed on a touch screen as a “two fingers tap”. Single tap to zoom out.

1.3.1 “Ward station” command bar

The user decides which parameter is displayed within the pump boxes (indicated in Fig 6 **A**) selecting one of the buttons on the “Ward station” command bar.

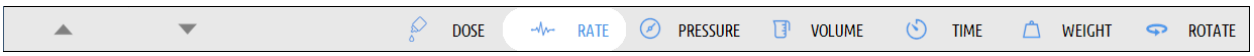


Fig 8

The selected button appears dark grey.

PROFILE: a “PROFILE” button displays, where defined, the drug profile as set up in the configuration.
When the **DOSE** button is selected, the doserate and doserate unit of measure are displayed. When working in “pharmacokinetic” mode the “target” value is displayed.
When the **RATE** button is selected the pump boxes display the volume rate.
When the **PRESSURE** button is selected the pump boxes display the infusion pressure. In the configuration a “pressure threshold” can be set up. When this threshold is exceeded the Pressure value is displayed in yellow.
When the **VOLUME** button is selected the pump boxes display the total infused volume.
When the **TIME** button is selected the pump boxes display the time remaining to the end of the infusion.
When the **WEIGHT** button is selected the pump boxes display the patient weight set on the pump.

The patient weight is displayed only if:

- *A pump is running in pharmacokinetic mode;*
- *In a pump the dose rate is pro-kilo and the pump is set in “Doserate” mode.*

When the **ROTATE** button is selected all the different parameters are displayed in rotation. The currently displayed parameter is highlighted on the command bar (dark grey).

When the number of beds displayed on the screen is smaller than the number of beds configured in the system (i.e. when it is not possible to display all the beds on the same screen) two arrow-buttons are present on the command bar. The arrow-buttons make it possible to “scroll” the beds up and down.

The color reflects the color of the highest priority alarm currently occurring on the non-displayed bed.

The **LOCATION** button (first on the left in Fig 8), only visible if the workstation is enabled by configuration to display beds belonging to different locations, makes it possible to select the location to be displayed.

The number of beds that can be displayed on the Infusion Ward Station screen (Fig 1) is configurable. I.e. the user decides how many beds are displayed on one screen. Please refer to your system administrator for more information.

1.4 Notification area

A notification area is displayed on the right of every Infusion screen, reporting the notifications sent by the connected pumps (Fig 9 **A**, Fig 10).

Fig 9

The notification area can be, by configuration:

- Always visible
- Automatically displayed when a new notification comes
- Only visible after user click on the notification button on “Control Bar” (Fig 9 **B**).

The different messages are displayed in chronological order, (most recent on top - Fig 10 **A**) and by criticality (high priority on top, then medium, then low).

Fig 10

Each message is characterized by the colour corresponding to its priority.

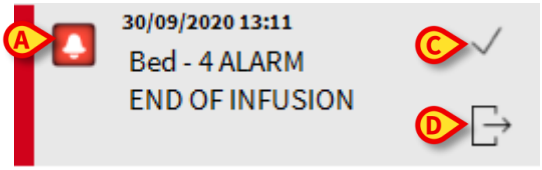


Fig 11

In the message box (Fig 11), the following information is displayed:

- Date-time of occurrence
- The number of the bed from which the message comes
- The actual message text
- An icon characterizing the message type (Medium/High/Low priority alarm - Fig 11 **A**)
- An “Ack” button. Click the button to acknowledge the corresponding notification (Fig 11 **C**)
- A “Callback” button. Click the button to access the patient station on which the notification occurred (Fig 11 **D**)

At the bottom of the area, four different filters are available, making it possible to choose the type of message to be displayed (Fig 10 **B**). The available filters are:

- Only alarms
- All messages
- Messages relating only to the selected patient
- Messages relating to all patients

1.5 Patient Station

Click on one of the “bed cards” to open the “Patient station” screen, shown in Fig 12.
The “Patient station” screen (Fig 12) offers a detailed view of all the data coming from the pumps connected to a patient. The corresponding patient is automatically selected.
On the left of the screen is a list of syringes and infusion pumps connected to the patient (Fig 12 **A**); in the middle a diagram displays drug infusion velocity changes in time and possible administered boluses (Fig 12 **B**).

Fig 12

On the left, each box represents a pump. These boxes are named “Pump buttons”. The pump button displays the drug name when the pump provides this kind of information. When it doesn’t, the pump name is displayed.
The pump colour indicates the pump status. Empty slots show no data.

The box representing the pump (Fig 13) can display different kinds of data.

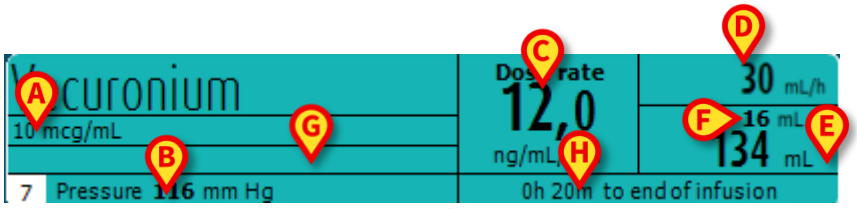


Fig 13

These are:

- drug concentration (Fig 13 **A**);
- circuit pressure (Fig 13 **B**); In the configuration a “pressure threshold” can be set up. When this threshold is exceeded the Pressure value is displayed in yellow.
- the dose rate (Fig 13 **C**); or the target dose when working in pharmacokinetic mode. In this case the “target” icon shown in Fig 5 is displayed as well.
- the volume rate (Fig 13 **D**);
- the total infused volume (Fig 13 **E**);
- volume remaining in the syringe (Fig 13 **F**).
- drug profile, if specified (Fig 13 **G**);
- the time remaining to the end of the infusion (Fig 13 **H**).

1.5.1 Infusion charts

The infusion chart displayed in the central area of the “Patient station” screen represents the trends of some of the infusion values (Fig 14).
The infused quantities are represented by colored rectangular areas (Fig 14 **D**, **B**, **E**).

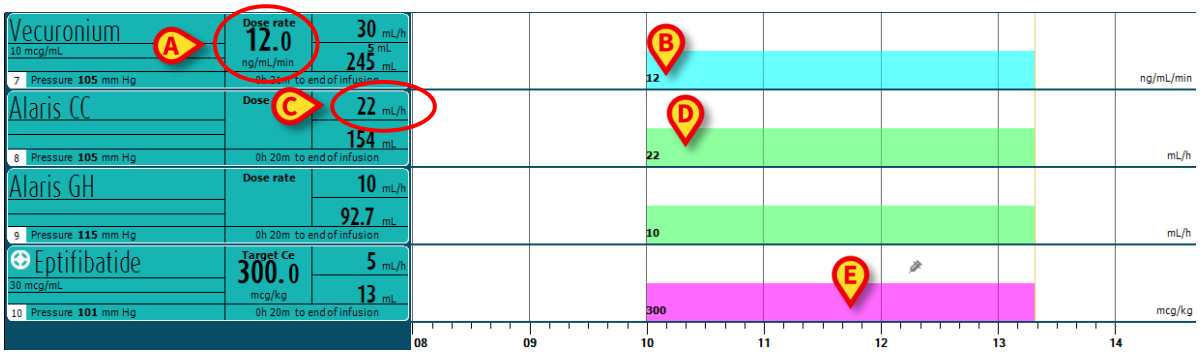


Fig 14

If the pump provides the dose rate value (Fig 14 **A**) the height of the chart is proportional to the dose rate. The dose rate value is displayed (in numbers) every time the dose rate changes. (Fig 14 **B**).

If the dose rate value is not provided the height of the chart is proportional to the infusion volume rate (this is the case indicated in Fig 14 **C**). The volume rate value is displayed (in numbers) on the chart every time it changes. (Fig 14 **D**).

If the pump is set to pharmacokinetic mode the chart displays the target trend (violet - Fig 14 **E**).

A specific dose rate/volume rate value corresponds to each moment in time. Time is indicated by a time bar placed on the bottom of the chart area.

Click the chart area to display a vertical yellow bar indicating (in labels) the dose rate/volume rate values corresponding to the clicked chart point. A specific label on the bottom indicates the corresponding time.

Each time a warning/alarm message is provided or a bolus is administered a specific icon is displayed on the chart in the position corresponding to the time in which the event occurred (Fig 15 shows 2 boluses and two alarms). Click the icon to display information on the specific event.

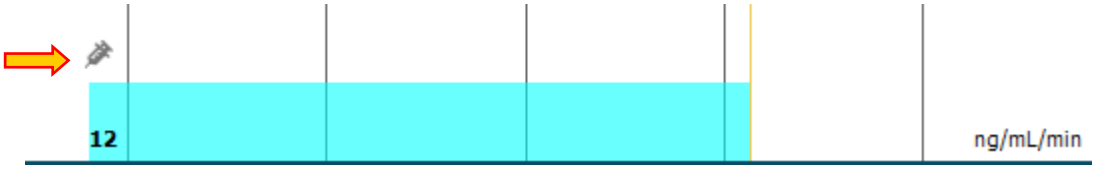


Fig 15

The infusions diagram is updated at one minute intervals; the connected syringe buttons are updated in real time.

1.5.2 The “Patient station” screen command bar

Three buttons are present in the Patient Station screen command bar (Fig 16).
The **Print** button gives you acess to the system’s print functionality.
The **Log** button opens the pump log history described on page 18.
The **Close** button closes the Patient Station Screen and returns to the Ward Station screen described on page 4 (if working on a “Central” workstation).

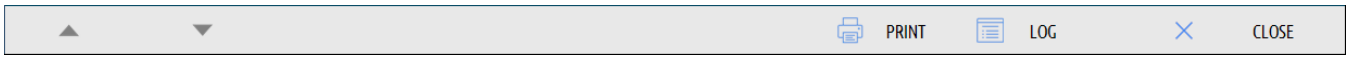


Fig 16

Two arrow buttons are displayed on the left when it is impossible to display all the connected pumps at the same time. These buttons make it possible to scroll up and down the information displayed on screen.

1.6 Infusion history

Click the **Log** button on the command bar of the “Patient station” screen to display a screen containing the history of all the infusions of the selected patient.

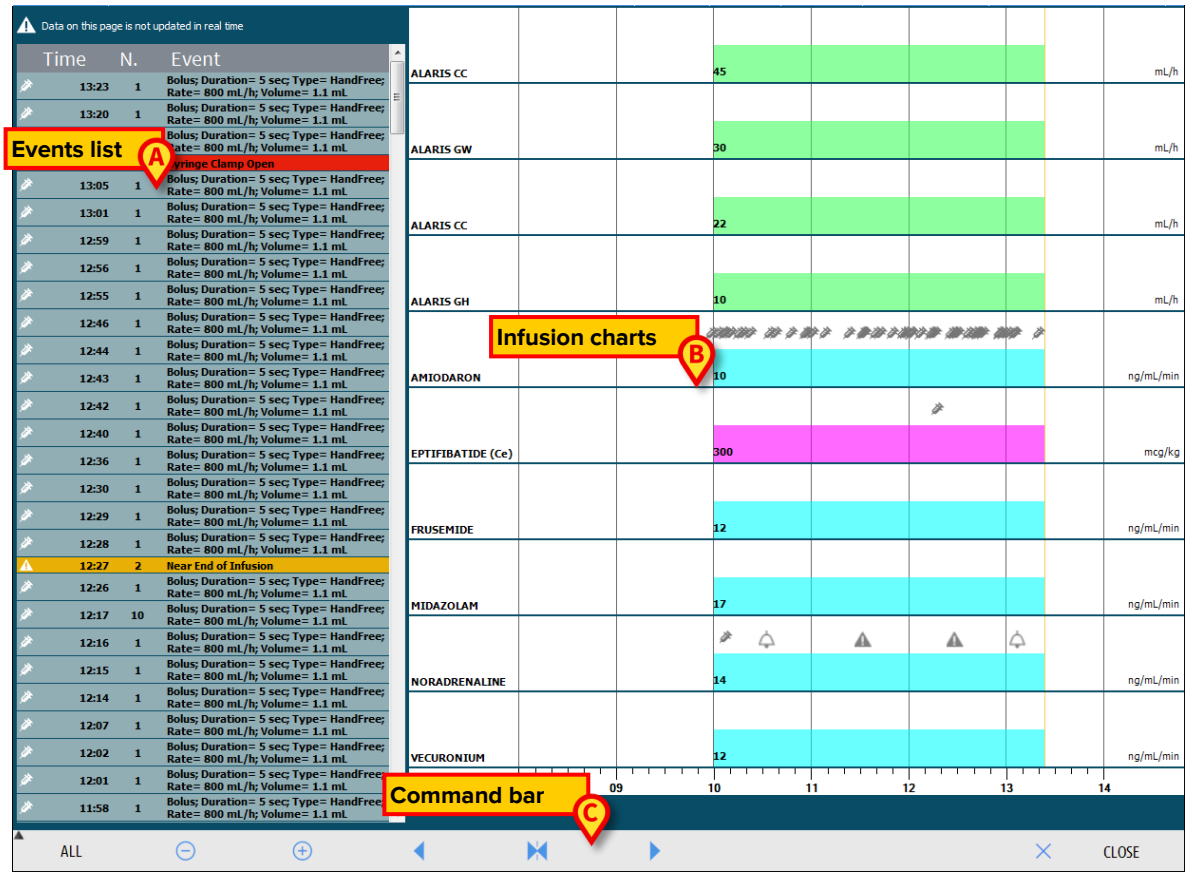


Fig 17

The screen is formed of three main parts. These are:

- a list of all the events occurred on all the pumps connected to the selected patient during his stay (Fig 17 **A** – see page 15);
- a chart representing all the patient’s infusions (Fig 17 **B** – see page 17);
- a command bar making it possible to manage the chart display mode (Fig 17 **C** – see page 16).

The data displayed on this screen are not updated in real time; they are updated every time the screen is accessed.

1.6.1 Events list

The table shown in Fig 18 contains the list of all the events occurred on all the pumps connected to the selected patient during his/her stay.

Fig 18

Every line on the list corresponds to an event. For every event the following information is provided:

- the time of occurrence,
- the number of the pump on which the event occurred,
- a short description of the event.

The events highlighted red refer to alarms. The events highlighted yellow refer to warning messages. The kind of events that can be displayed are:

- clinical events (i.e. boluses, for which the type, duration and quantities are specified);

"Auto-bolus" and "empty auto-bolus". Two different, specific events are recorded in case of self-administered boluses: "auto-bolus" and "empty auto-bolus". The "auto-bolus" event is recorded if the bolus is actually administered. The "empty auto-bolus" event is recorded if the bolus is triggered by the patient but is not administered for clinical reasons. Two different icons and indicate these events.

- events referring to the pump status (i.e. alarms, warning messages, connection/disconnection notifications etc...);
- pump logs (the Infusion module can be configured to list, in this area, some selected pump logs).

1.6.2 The "Infusion history" command bar

The buttons on the command bar on the "Infusion History" screen (Fig 19) can be used to perform different actions.

Fig 19

The buttons functions are described below:

The and buttons scroll up and down the charts area when the available charts are too many to be displayed all at the same time.

The button decreases the chart scale and increases this way the time span displayed.

The button increases the chart scale and decreases the time span displayed.

The button displays a time preceding the time currently displayed (it makes it possible, namely, to move backwards on the time line).

The button displays a time following the time currently displayed (it makes it possible, namely, to move forwards on the time line).

The button makes it possible to display the current time back.

When the display mode is changed using the and button the button flashes.

The button indicated in Fig 19 **A** makes it possible to filter the kind of events displayed.
Click this button to open the menu shown in Fig 20.

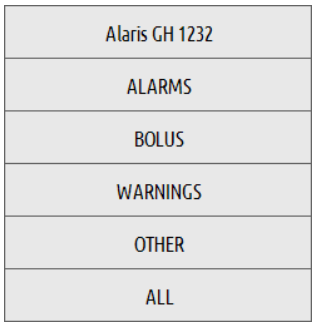


Fig 20

The first button on the menu displays the name of the pump currently selected. Click one of the events on the events list (Fig 18) to select a pump. The pump on which the last event occurred is selected by default.

On the filters menu:
Click the button displaying the pump name to display only the events occurred on that pump.
Click the **BOLUS** button to display only the events relating to boluses administration.
Click **WARNINGS** to display only the warning messages.
Click **ALARMS** to display only the alarm messages.
Click **OTHER** to display other events not relating to the above mentioned categories.
Click **ALL** to display all the events.

1.6.3 The “Infusion history” charts

The charts on the “Infusion history” screen represent the trends of the infusions of the selected patient.

If no patient is selected, the history of the bed is shown.

The chart is analogous to the one of the “Patient Station” screen, described on page 12. See paragraph “Patient Station” for the chart explanation and the instructions on how to read it. Each row on this chart represents an infusion. On this screen a new row is created each time that:

- a pump is connected,
- the drug is changed on an existing pump,
- the infusion unit of measure is changed.

1.7 Pump Details

On the “Patient station” screen (Fig 12), click one of the pump buttons to display a screen containing detailed information on the pump (Fig 21).

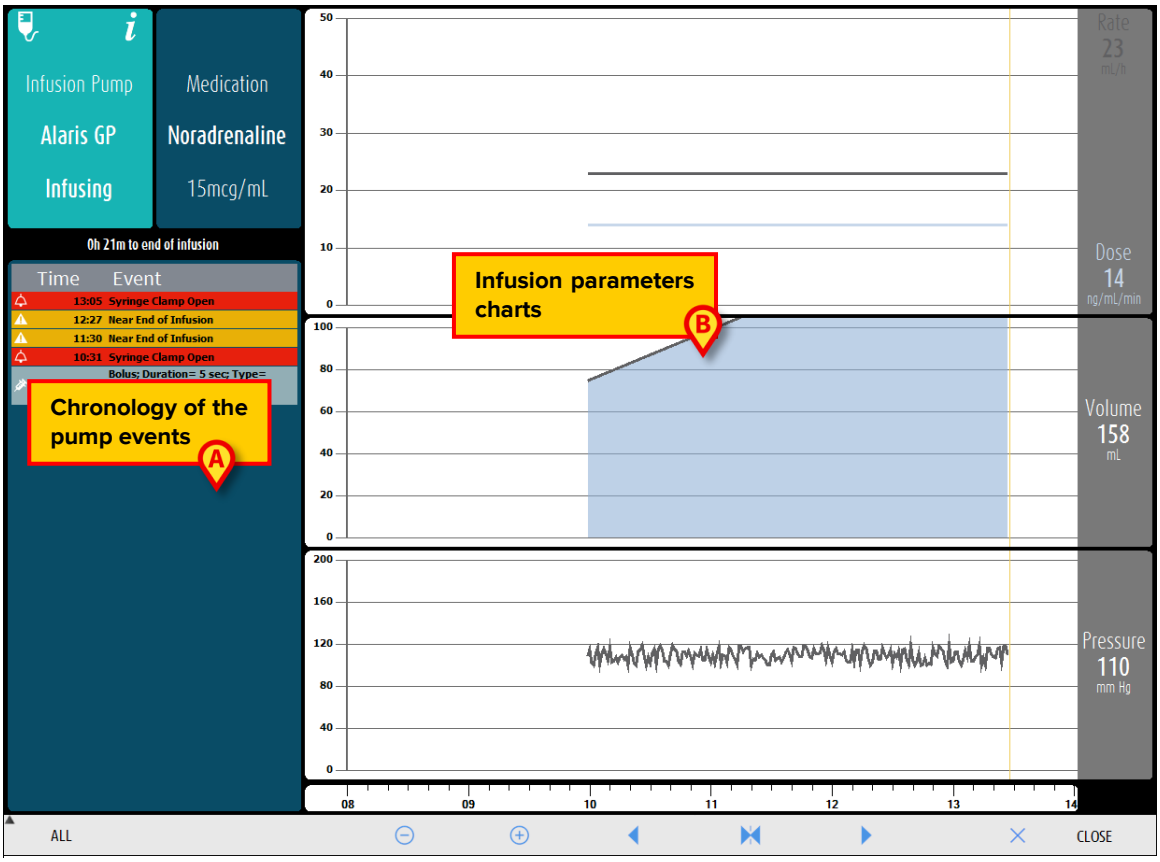


Fig 21

On the left, a list of all the events occurred on the selected pump is displayed (Fig 21 **A**). On the right three charts are displayed, representing some of the trends of the current infusion parameters (Fig 21 **B**).

The events list (Fig 21 A) refers to the association of a given pump with a specific drug. Therefore, if a new drug is associated to a given pump, the event list starts all over again. The new combination is a new entity for Infusion.

1.7.1 The charts on the “Pump detail” screen

The charts on the right of the screen (Fig 21 **B**) display the trends of some of the infusion parameters. The values of the different parameters are indicated along the vertical axis of the charts. The horizontal axis represents time. The represented parameters are:

- The volume rate and the dose rate of the infused drug (Fig 22);

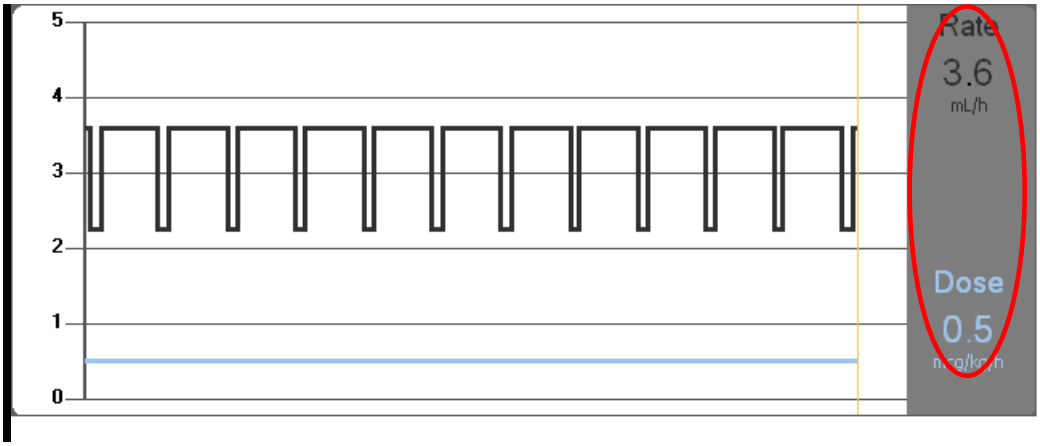


Fig 22

- If the pump is set to “Pharmacokinetic” mode, three lines are displayed on the chart, corresponding to: 1) the target value; 2) the plasmatic concentration; 3) the “effect site” concentration. The displays on the right show the three corresponding values (Fig 22);

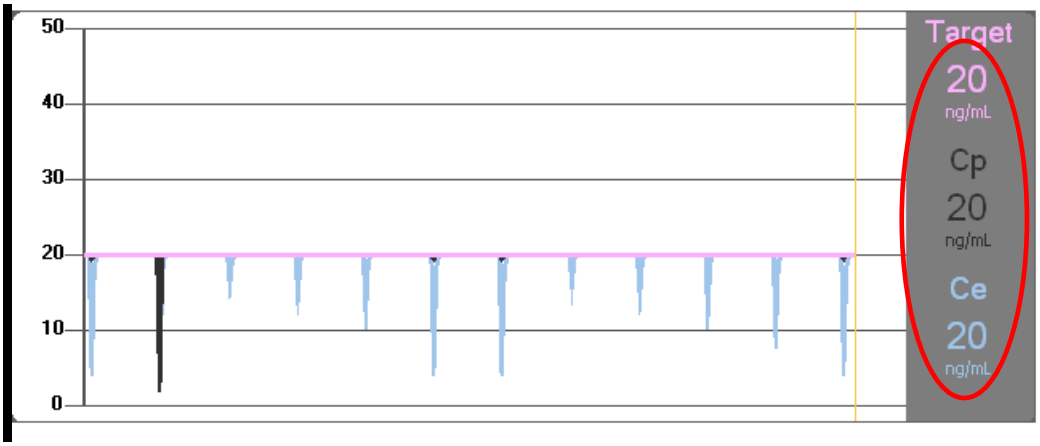


Fig 23

- The total infused volume (Fig 24);

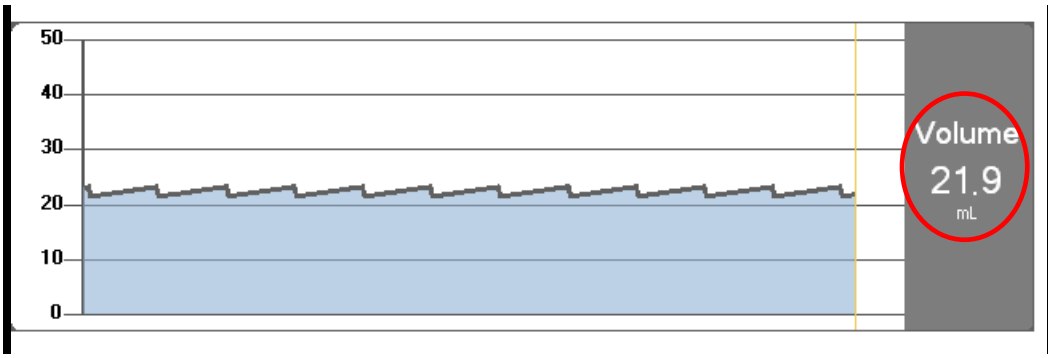


Fig 24

- The infusion circuit pressure (Fig 25).

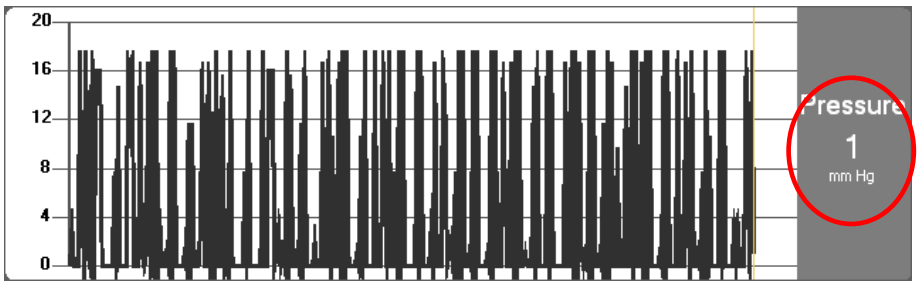


Fig 25

For some pump models it is not possible to display the infusion circuit pressure values.

The current values of the four parameters are indicated on the right of each chart (they are red-circled in the figures).

Charts and displays are updated at one minute intervals.

Click on any of the charts to display a cursor. The corresponding time is displayed at the bottom, in a label. The corresponding values are displayed on the displays on the right.

1.7.2 The “Pump detail” screen command bar

Fig 26 shows the command bar of the “Pump detail” screen. This paragraph lists the functionalities triggered by the buttons on the command bar.

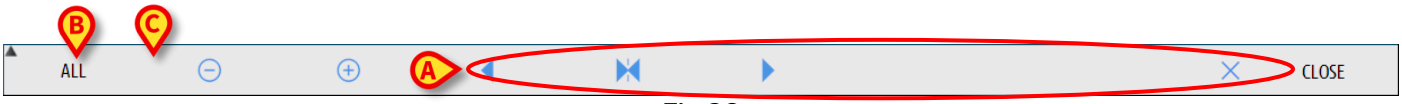


Fig 26

All (Fig 26 **B**) filters the events list. See the next section for the events list description.

Critical (when available - Fig 26 **C**) marks the drug as “Critical”. “Critical” drugs are characterized by different, specific alarm sounds. After clicking the button, user confirmation is requested before the drug is labelled as “Critical”.

The **Close** button closes the “Pump detail” screen and displays again the “Patient station” screen (Fig 12).

Five buttons, circled in Fig 26 **A**, make it possible to change the chart display mode:

the button decreases the chart scale and increases this way the time span displayed;
the button increases the chart scale and decreases the time span displayed;
the button displays a time preceding the time currently displayed (it enables, namely, to move backwards on the time line);

the button displays a time following the time currently displayed (it enables, namely, to move forwards on the time line);
the button displays the current time again.

When the display mode is changed using the and button the button flashes.

The button indicated in Fig 26 **B** makes it possible to filter the events list. See below for the events list description.

The "critical drugs" feature shall be considered only as a support for the drug management workflow.

1.7.3 Event list of a selected pump

A table on the left of the "Pump detail" screen lists all the events occurred on the pump in chronological order (Fig 21 **A**).

The rows in the list refer to single events. The time of occurrence and a short description are provided for every event. The events highlighted red are alarms. The events highlighted yellow are warnings. The kind of events that can be displayed are:

- clinical events (i.e. boluses, for which the type, duration and quantities are specified);

"Auto-bolus" and "empty auto-bolus". Two different, specific events are recorded in case of self-administered boluses: "auto-bolus" and "empty auto-bolus". The "auto-bolus" event is recorded if the bolus is actually administered. The "empty auto-bolus" event is recorded if the bolus is triggered by the patient but is not administered for clinical reasons. Two different icons and indicate these events.

- events referring to the pump status (i.e. alarms, warning messages, connection/disconnection notifications etc...);
- pump logs (the Infusion module can be configured to list, in this area, some selected pump logs).

The events list refers to the association of a given pump with a specific drug. Therefore, if a new drug is associated to a given pump, the event list starts all over again. The new combination is a new entity for Infusion.

Click the button indicated in Fig 26 **B** on the command bar to open a menu making it possible to filter the events list (Fig 27).

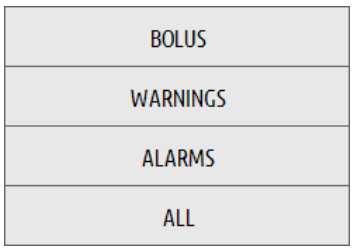


Fig 27

The **BOLUS** button displays only the events referring to boluses administration.
The **WARNINGS** button displays only the warning messages.
The **ALARMS** button displays only the alarm messages.
The **ALL** button displays all the events.
Click **OTHER** to display other events not relating to the above mentioned categories.

1.7.4 Pump and medication buttons

There are two buttons on the top left corner of the “Pump detail” screen, one referring to the pump, one referring to the medication (Fig 28).

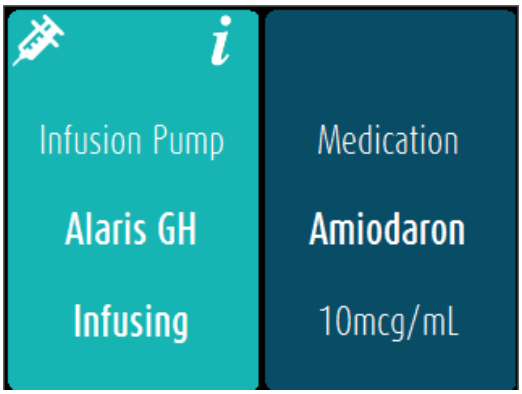


Fig 28

The information that can be displayed on the pump button is:

- A status icon indicating the pump status (infusing, paused, alarmed and so on)
- The pump name.
- A brief description of the possible alarms.

The background color depends on the pump status:

- Red: high priority alarm
- Yellow: medium priority alarm
- Cyan: low priority alarm
- Grey: paused
- Blue: infusing

➢ Click the pump button to access the available on-line pump documentation. The information displayed on the medication button is:

- Medication name.
- Medication dose/dilution (if available).

➢ Click the medication button to access the available on-line medication documentation.

1.8 Events print report

To print the connected pumps log,

- click the **MENU** button on “Control Bar” (Fig 29).

Fig 29

The following menu is displayed (Fig 30).

Fig 30

- Click the **Patient Reports** button (Fig 30).

A menu is displayed showing the buttons “**Export Data**” and “**Events**”.

- Click the **Events** button.

A menu is displayed showing the following buttons:

- **Show Alarms**
- **Show Bolos**
- **Show Warnings**
- **Show Other**
- **Show All**
- **Print**
- **Cancel**

- Click the buttons to select the information to be printed.

The buttons corresponding to the chosen options appear as selected. Multiple selection is possible.

- Click the **PRINT** button. A print preview is displayed.

1.9 Infusion Dashboard

The “Infusion Dashboard” tool makes it possible to generate detailed reports of the notifications that occurred on the pumps.

To activate this tool:

- Click the **MENU** button on “Control Bar” (Fig 31).

Fig 31

The following menu is displayed (Fig 32).

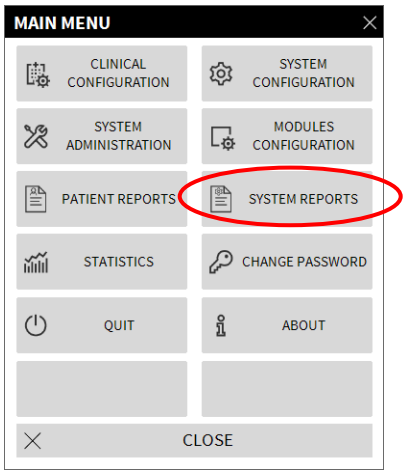


Fig 32

- Click **SYSTEM REPORTS** (Fig 32).

The following menu is displayed (Fig 33).

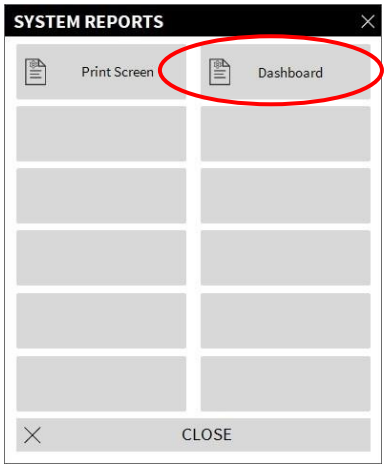


Fig 33

- Click **Dashboard** (Fig 33).

The following window opens (Fig 34).

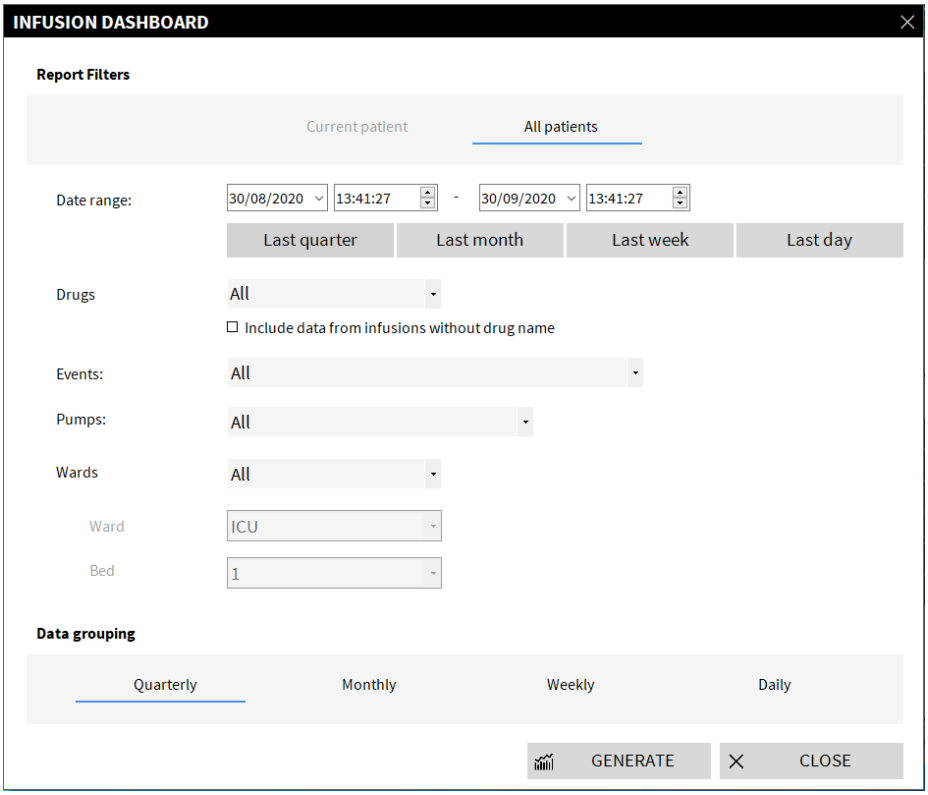


Fig 34

Use the filters to define the kind of dashboard:

- Either events referring to **All Patients** or the **Current Patient**.
- Date range of occurrence.
- Events referring to specific **Drugs**. The drop-down menu makes it possible to select either all drugs or only critical drugs (as defined on the “Pump detail” screen, Fig 26 **C**). In here, it is possible to type the name of a specific drug as free text.
- The **Include data from infusions without drug name** checkbox includes the data relating to drugs for which only the volume rate information is available (that is, the drug name is not specified on the pump).
- Specific **Events**.
- Specific **Pumps**.

Only available if **All patient**s is selected:

- **Wards**: Indicates whether all wards, single ward or single bed is considered for the report.
- **Ward**: Ward name (available if either **single ward** or **single bed** are selected).
- **Bed**: Bed number (available if **single bed** is selected).

Report View makes it possible to select the information display mode on the generated record (**Quarterly**, **Monthly**, **Weekly**, **Daily** view).

1.10 Notificaton display on “Control Bar”

The occurrence of events is notified on “Control Bar” (Fig 35).

Fig 35

The area circled in Fig 35 is an indicator of the possible events occurring on one or more infusion pumps. This notice is always visible, independent from the module currently selected. The User is this way informed on the status of the pumps at all times, even if the Infusion module is not currently displayed.

If no notification is provided, the area is empty.
If a high priority alarm is activated, the button turns red.
In the case of a medium priority alarm, the button turns yellow.
In the case of a low priority alarm, the button turns cyan.
In the case of different alarms occurring at the same time, the highest priority alarm is notified on “Control Bar”.
In all cases, the relevant alarms are specified in the lateral “Notification area”
(Fig 10 **A**).

If the system is not configured to always display the “Notification area” (Fig 10 **A**)

- Click the notification button on “Control Bar” to display the notification area.

See paragraph “Notification Area” for the description of this area (Fig 10).

1.11 Switching Standard Time – Daylight Saving Time

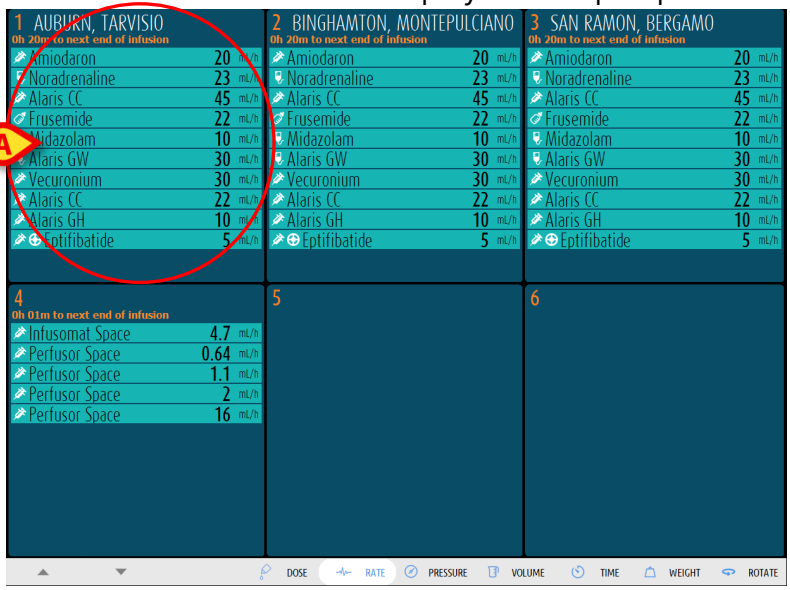
This paragraph explains the way information is displayed on the module’s charts when the time switches from standard time to daylight saving time and vice versa.

In both cases (Standard Time to Daylight Saving Time and Daylight Savìng Time to Standard Time) a vertical bar is displayed on the chart at time of switch.
When switching from Standard Time to Daylight Saving Time (the clock “jumps” one hour forward) the time corresponding to 03:00 a.m. is not displayed. I.e.: the vertical bar is displayed at 02:00 a.m. and the next hour is 04:00 a.m.
When switching from Daylight Saving Time to Standard Time (the clock “jumps” one hour back) the time corresponding to 02:00 a.m. is repeated twice. I.e.: the vertical bar is displayed at 02:00 a.m. and the next hour is again 02:00 a.m.

1.12 Annex – Examples of user workflows

1.12.1 Ward Station

The “Ward station” screen displays all the pumps connected to each patient in the domain.



The screen is divided in rectangular areas (**A**). Every area, called “bed card”, refers to a bed and contains a schematic representation of all the pumps connected to a patient.

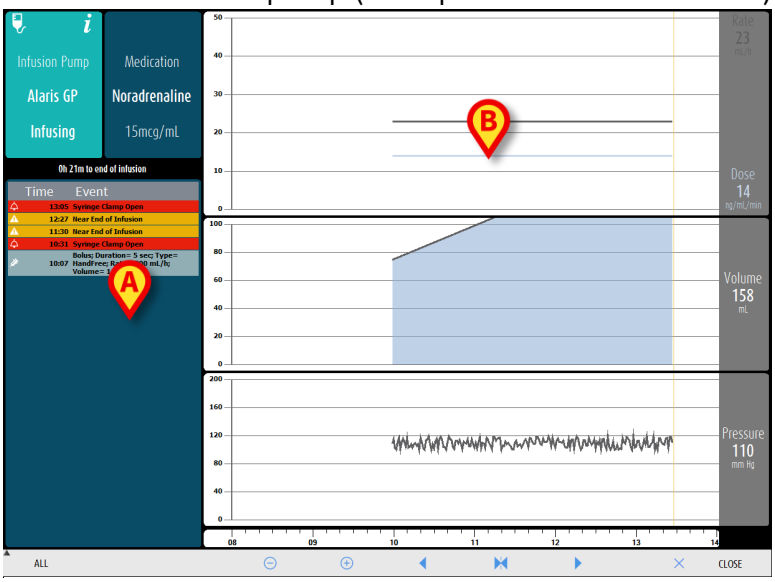
1.12.2 Patient Station

On the “Ward station” screen, click on one of the “bed cards” to open the “Patient station” screen, shown below.

The “Patient station” screen offers a graphic representation of the data coming from the pumps connected to the patient.
On the left of the screen is a list of syringes and infusion pumps connected to the patient (**A**); in the middle a chart (**B**) displays drug infusion velocity changes in time and possible infusion events (as boluses or notifications).

1.12.3 Pump Details

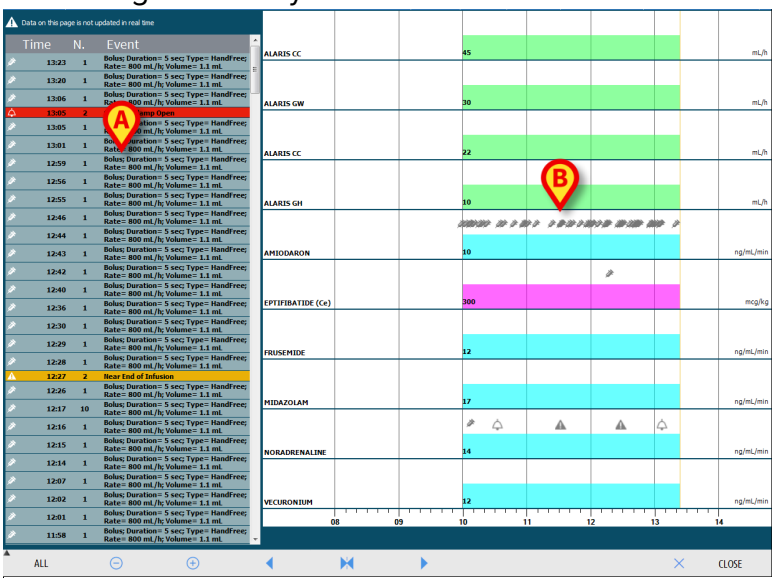
On the “Patient station” screen, click one of the pump buttons to display a screen containing detailed information on the pump (“Pump details” shown below).



On the left, a list of all the events occurred on the selected pump is displayed (**A**). On the right, three charts are displayed, representing some of the trends of the current infusion parameters (**B** - volume rate and dose rate; total infused volume; infusion circuit pressure).

1.12.4 Infusion History

Click the **Log** button on the command bar of the “Patient station” screen (2**C**) to display a screen containing the history of all the infusions of the selected patient.



The screen contains:

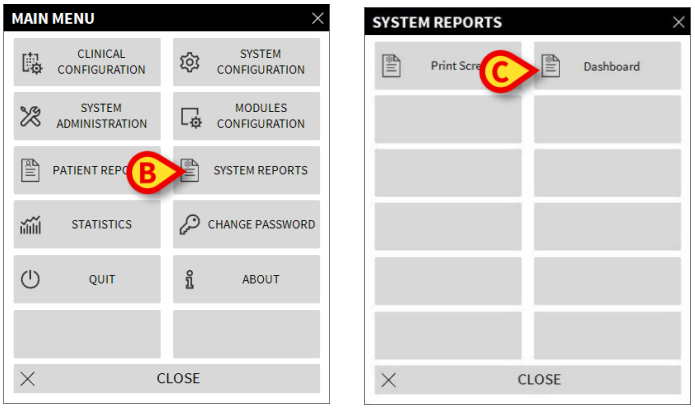
- a list of all the events occurred on all the pumps connected to the selected patient during his stay (**A**);
- the corresponding charts (**B**).

1.12.5 Infusion Dashboard

The “Infusion Dashboard” tool allows to generate detailed reports of the notifications that occurred on the pumps. To activate this tool:

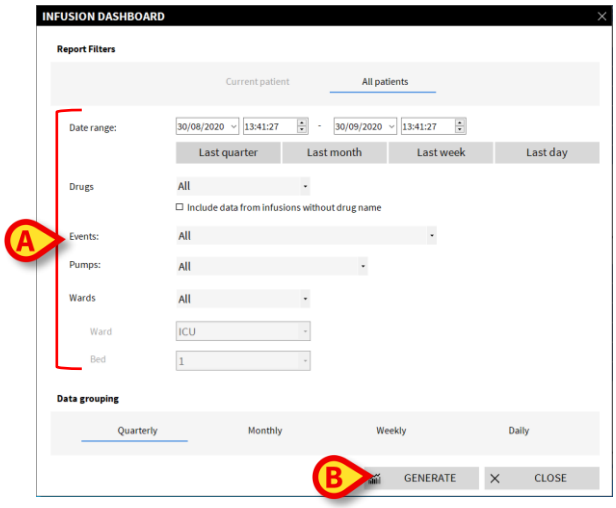
- Click the **MENU** button on “Control Bar” (**A**).

The following menu is displayed.



- Click **SYSTEM REPORTS** (**B**). Another menu is displayed.
- Click **Dashboard** (**C**).

The following window opens.



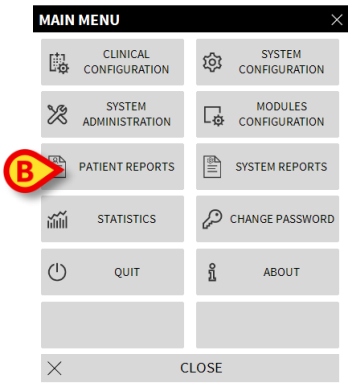
Use the filters to define the kind of dashboard (**A**). Click **GENERATE** (**B**) to generate the dashboard.

1.12.6 Print reports

To print the pumps log,

- click the **MENU** button on “Control Bar” (**A**).

The following menu is displayed.



- Click the **Patient Reports** button (**B**).

A menu is displayed containing the buttons “**Export Data**” and “**Events**”.

- Click the **Events** button.

A menu is displayed, making it possible to select the information to be printed.

- Click the buttons to select the information to be printed. The buttons corresponding to the chosen options appear as selected. Multiple selection is possible.

- Click the **PRINT** button. A print preview is displayed.