ascom

Nutrition User Manual

Version 6.0

03/12/2020

Contents

1. Nutrition Calculator

> ⚠️ *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 the Nutrition Calculator module, described in this document.*

The "Nutrition Calculator" module is a tool that helps creating, managing, prescribing and documenting the patient's nutrition plan (either enteral, parenteral or total).

When creating a new nutrition plan the data referring to the previous plan prescribed are displayed. This makes it possible to speed-up the prescription procedure by changing, where necessary, the values of the old plan instead of creating a new plan from scratch.

The patient's nutrition plan, once validated, is automatically added to the patient's general therapy plan and is displayed on the Therapy modules (see the related documentation for further instructions on these modules).

1.1. Module selection

To select the "Nutrition Calculator" module

➢ Click the corresponding icon on the lateral bar (Fig 1).

Fig 1

The module main screen appears. If no patient is selected no data is displayed. If a patient is selected, the selected patient data are displayed.

1.2. Patient search and selection

To select a patient,

➢ Click the **Patient** button on Control Bar (Fig 2 **A**).

Fig 2

The Patient Explorer module opens. See the patient explorer user manual (*USR ENG Patient Explorer*) for instructions.

> Other modules can be configured for the patient selection in place of Patient Explorer, depending on the configuration of the Digistat Suite. If this is the case, see the specific documentation for instructions.

1.3. Main screen description

If a patient is selected the module's main screen displays the information referring to the selected patient (Fig 3).

Fig 3 - Selected patient data

The screen is formed of four areas:

1) a table summarizing the values of the various nutritional therapy plans of the selected patient (Fig 3 **A**);
2) a table indicating the commercial preparations to use to prepare the selected therapy (Fig 3 **B**);
3) an area making it possible to specify the patient's parameters that enable to calculate the Resting Metabolic Rate value (RMR - Fig 3 **C**); i.e. to choose the correction factor to be applied to the Basal Metabolic Rate.
4) a command bar containing the buttons that can be used to use the module's functionalities (Fig 3 **D**).

1.3.1. Nutrition plans list

The table shown in Fig 4 summarizes the values of all the items forming the nutrition plans.

Fig 4 - Nutrition plans list

Each row in the table corresponds to a nutrition plan. The columns display the values of the nutritional items forming the plan.

The first column (Fig 5 **A**) displays a numeric code indicating the nutrition plan status. There are three possible values:

- **1** means that the nutrition plan is completed and has already been added to the patient treatment plan;
- **2** means that the specification of the nutrition plan is in progress and that it has not yet been added to the patient treatment plan;
- **0** means that the nutrition plan was aborted.

Fig 5

The second column displays the date and time of the nutrition plan creation.
The third column displays the acronym of the user who created the nutrition plan.

The other columns display the values of the nutrition plan items specified in the heading (Fig 6, for example, displays a part of the table headings).

Fig 6

A row, when selected, is highlighted blue (Fig 4 **A**). The values displayed in the area named "commercial preparations table" (Fig 3 **B**, Fig 7) are the values of the nutrion plan currently selected.

1.3.2. Commercial preparations table

The table indicated in Fig 3 **B** and enlarged in Fig 7 displays the commercial preparations that can be used to prepare the selected nutrition plan. The selected nutrition plan is highlighted blue in the nutritions plan table (Fig 4 **A**).

Type	Name	Amount	Unit
Electrolytes	KCl 2 mEq/ml	10,0	ml
	Na Latt 2 mEq/ml	15,0	ml
Enteral	NaCl	10,0	ml
	Nutrodrip	500,0	ml
Oligoelements	Oligoelementi Sifra	6,0	ml
Parenteral	AA 10% Sintamin	200,0	ml
	AA Ramif 4.5%	200,0	ml
	Intralipid 30%	400,0	ml

Fig 7 - Commercial preparations table.

Every row of the table displays one of the items that are part of the nutrition plan. The items are grouped by "type". The first column displays the names of the groups: "Electrolytes", "Enteral", "Oligoelements" etc…
The second column displays the names of the items. The third column displays the prescribed quantities. The fourth column displays the unit of measure.

1.3.3. Energetic expense and RMR

The area indicated in Fig 3 **C** and enlarged in Fig 8 **A** displays various information.

Harris-Benedict	Resting Metabolic Rate	
BMR [kCal]	Correction Factor [%]	**RMR [kCal]**
1.697	120% (Maintenance)	2.036

(*) 0 = Aborted, 1 = Prescribed, 2 = Prescription under development
Other Prescriptions
Other prescriptions specification…

Fig 8

These are:

- the Basal Metabolic Rate (BMR - Fig 8 **A**) calculated by the Harris-Benedict equation;

- the correction factor chosen for the resting metabolic rate calculation, selected on a list of standard values (Fig 9); the resting metabolic rate (RMR - Fig 8 **B**) is the basal metabolic rate (BMR - Fig 8 **A**) multiplied by the selected correction factor;

- a key (Fig 8 **C**) indicating the meaning of the numeric codes associated to the status of the nutrition plans (described in paragraph 1.3.1).

- the list of possible other prescriptions (Fig 8 **D**) not configured in the system as "standard items"; the "other prescriptions" can be described in a specific window (Fig 25) placed in the "other prescriptions" area (Fig 28).

Fig 9 - Types of energetic expense

1.3.4. The command bar

The command bar (Fig 3 **D**, Fig 10) contains the buttons making it possible to perform different actions.
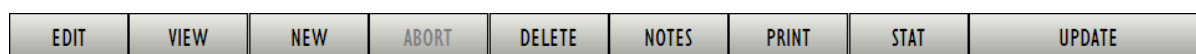
Fig 10 - Command Bar

The functions of the different buttons are briefly described in this paragraph. The detailed procedures are described later in specific paragraphs.

EDIT	Use this button to change the values of a selected nutrition plan (see paragraph 1.5 for the procedure).
VIEW	Use this button to display the data of a selected nutrition plan. Data are displayed in read-only mode (paragraph 1.6).
NEW	Use this button to create a new nutrition plan for the patient (paragraph 1.4.1).
ABORT	Use this button to interrupt the administration of a selected nutrition plan (see paragraph 1.8).
DELETE	Use this button to delete a selected nutrition plan (paragraph 1.4.4).
NOTES	Use this button to either add or display patient notes (paragraph 1.10).
PRINT	Use this button to print the chosen information (paragraph 1.11).
STAT	Use this button to display in a chart the statistical trends of the values of the patient nutrition plans (see paragraph 1.7).
UPDATE	Use this button to add a nutrition plan to the patient general therapy plan. After clicking this button the nutritional therapy is actually prescribed. The nutrition plan switches from status 2 to status 1 (see Fig 5 for a list of the possible statuses; see paragraph 1.4.1 for the detailed prescription procedure).

1.4. Creating a new nutrition plan

To create a new nutrition plan

➢ Click the **New** button on the command bar (Fig 11 **A**).

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i | The **New** *button is disabled when a nutrition plan in status 2 already exists (status 2 is "nutrition plan in progress" - see Fig 5 for a list of the possible statuses of the nutrition plan).*

Fig 11

A window making it possible to specify the details of the nutrition plan opens (Fig 12).

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i | *When the new nutrition plan is the first plan created for the patient the window is empty (Fig 12). When there are previous nutrition plans the window contains the data of the latest plan created. This feature makes it possible to use the values of the latest plan instead of creating a new nutrition plan from scratch.*

Fig 12 - Nutrition plan specification (empty window)

➢ Specify the items and the values of the new nutrition plan (Fig 13).

Fig 13 - Plan specification

➢ Click the **Exit** button (Fig 13 **A**).

The window closes. A line is automatically added to the nutrition plans table on the main screen (Fig 14). The new nutrition plan is in status 2, i.e. it is "in progress".

Fig 14 - Nutrition plans table

When the plan is in status 2 date and time are not specified. They appear later, when the plan is actually prescribed, indicating the time of the actual prescription.

1.4.1. How to prescribe a nutrition plan

To prescribe a nutrition plan, after the specification of all the items and their corresponding values,

- ➢ Click the line corresponding to the plan to be prescribed on the nutrition plans table. The plan must be in status 2.

- ➢ Click the **Update** button on the command bar (Fig 11 **B**). User confirmation is required (Fig 15).

Do you want to insert the Prescription under development into the Treatment Plan?

| YES | NO |
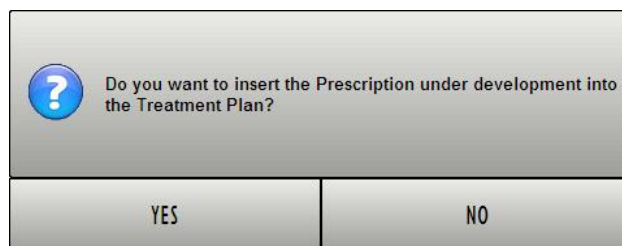
Fig 15

- ➢ Click **Yes** to prescribe the nutrition plan.

A print report listing all the items of the nutrition plan and the exact amounts is automatically created. A print preview is displayed. This document can be transmitted to the pharmacy or used to create the nutrition bag.

- ➢ Click the **Close** button on the command bar to close the print preview screen.

The nutrition plan is now prescribed. If the modules Therapy Prescription and Therapy Execution are in use, two new items (one for the enteral and one for the parenteral nutrition) are added to the patient's general treatment plan displayed on these modules. See the related documentation for a detailed description of the Therapy Prescription and Therapy Execution modules. Two specific messages inform the user about this fact (Fig 16):
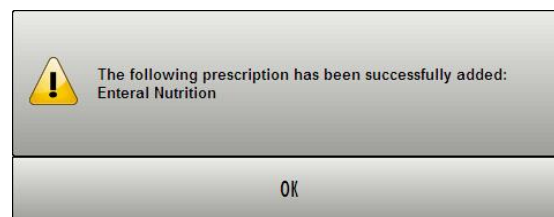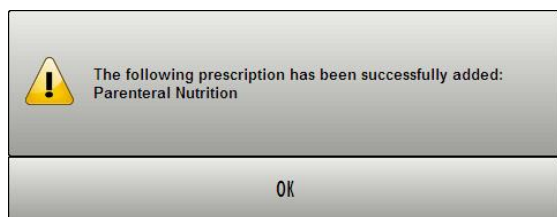
Fig 16a/b

When the nutrition plan is prescribed it switches to status 1 (see Fig 5 for a list of the possible nutrition plan statuses).

1.4.2. Nutrition specification window (description)

The window shown in Fig 17 makes it possible to specify in detail all the items that will be part of the patient nutrition plan and the corresponding values.
The present paragraph describes this window.

Fig 17

The window is divided into several areas. A heading placed on top of each area informs the user on the kind of nutrition items that are specified in the specific area. The heading is characterized either by the green color (Fig 18)

Fig 18

or the pink color (Fig 19).

Fig 19

Use the green areas to specify the items and their values. The pink areas display a summary of the values progressively specified. There are 8 green areas, making it possible to

- specify the quantity and the kind of parenteral solutions to be administered (Fig 17 **A**);
- specify the quantity and the kind of electrolytes to be administered (Fig 17 **B**);
- specify the quantity and the kind of enteral solutions to be administered (Fig 17 **C**);
- specify the quantity and the kind of oligoelements to be administered (Fig 17 **D**);
- specify the quantity and the kind of vitamins to be administered (Fig 17 **E**);
- specify the quantity of insulin to be administered (Fig 17 **F**);
- specify the possible other substances to be administered (Fig 17 **G**);
- specify (as free text) the possible other prescriptions (Fig 17 **H**).

The pink areas (Fig 20) display a summary of all the nutrition plan parameters. The summaries make it possible to display the enteral and the parenteral nutrition separately.
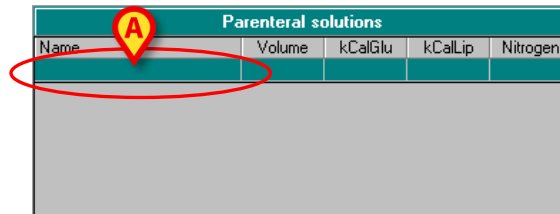

Fig 20

1.4.3. How to specify an item and its value
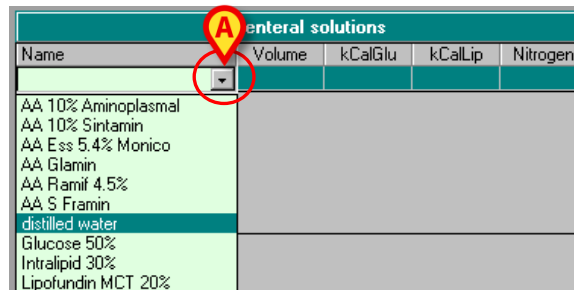
To specify an item of the nutrition plan:

  ➢ Click, within the relevant area, the "name" cell indicated in Fig 21 **A**.

Fig 21

An arrow button ![arrow] appears. The arrow button ![arrow] opens a menu containing all the selectable items. The list of selectable items is created during configuration (Fig 22 **A**).
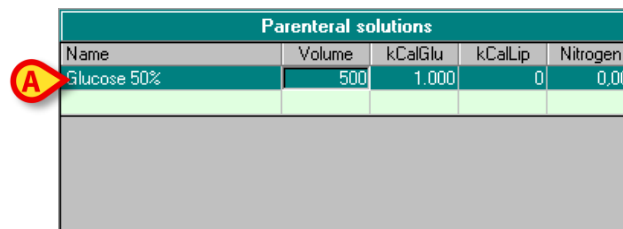

Fig 22 - Item specification

  ➢ Click the name of the relevant item.

The name of the item appears in the cell (Fig 23 **A**). The system assigns default values to the item.

Fig 23

To change the values:

  ➢ Click the value to be changed.

A cursor appears in the corresponding cell.

  ➢ Type the new value (Fig 24 **A**).

Fig 24

Other prescriptions specification

The possible "Other prescriptions" are specified in textual form. To edit the "Other prescriptions" area (Fig 17 **H**) click the area and type the wanted text (Fig 25).

Fig 25

The "Other prescriptions" are displayed on the module's main screen (Fig 3 **C**, Fig 26).

Fig 26 - Other prescriptions

Insulin

Use the cell "Insulin" to specify the insulin quantity (Fig 17 **F**, Fig 27). Type the needed quantity (in Insulin Units) in the "Insulin" field. The Glucose/Insulin ratio is automatically calculated and displayed below the insulin value.

Fig 27

The summary (pink table) is progressively updated while the different values are specified (Fig 28).

Fig 28

"Pro kilo" mode

The checkbox indicated in Fig 28 **A** makes it possible to display the table values in "pro kilo" mode, i.e. referred to the weight unit. For instance, the values displayed in Fig 29,

Fig 29

are displayed in Fig 30 in "pro kilo" mode (the "pro kilo" checkbox is selected).

Fig 30

Exit / Save

Use the **Exit** button (Fig 31 **A**) to close the "nutrition specification" window and save the inserted data as "work in progress".

Fig 31

A row is added to the nutrition plans table on the module's main screen (Fig 14). The plan is now in status 2 ("in progress"). See paragraph 1.4.1 for the actual prescription procedure.

Use the **Cancel** button (Fig 31 **B**) to close the nutrition specification window without saving the data.

1.4.4. How to delete an item from the nutrition plan

To delete one of the items on the nutrition plan

➢ Click the item to be deleted. The item is this way highlighted.

➢ Click the **Canc** button on the PC keyboard. User confirmation is required.

➢ Click **Yes** to delete the item.

1.5. Editing an existing nutrition plan

To edit an already existing nutrition plan, on the nutrition plans table (Fig 32)

 ➢ Click the row corresponding to the plan that must be edited.

Fig 32 - Nutrition plans table

The row is highlighted.

 ➢ Click the **Edit** button (Fig 32 **A**).

The **Edit** button is enabled only if the selected therapy is in status 2, i.e. it has not been prescribed yet (Fig 33). A therapy cannot be edited after prescription.

Fig 33

After clicking the **Edit** button the nutrition plan details window opens (Fig 34).

Fig 34

➢ Edit the plan items and amounts on the window.

➢ Click the **Exit** button (Fig 34 **A**).

The new values are displayed on the row corresponding to the plan on the nutrition plans table.

1.6. How to display the values of a nutrition plan

To display the details of a nutrition plan in "read only" mode, on the nutrition plans table (Fig 32)

➢ Click the row corresponding to the plan to be displayed. The row is this way highlighted.

➢ Click the **View** button on the command bar (Fig 32 **B**).

The window displaying the details of the selected plan opens (Fig 34). The window is in read-only mode - i.e. it cannot be edited.

1.7. Statistics of nutritional therapy

The "Nutrition calculator" module makes it possible to display in charts the trends of the patient's nutritional values.
To do that

  ➢ Click the **Stat** button on the command bar (Fig 32 **C**).

The following window opens (Fig 35).
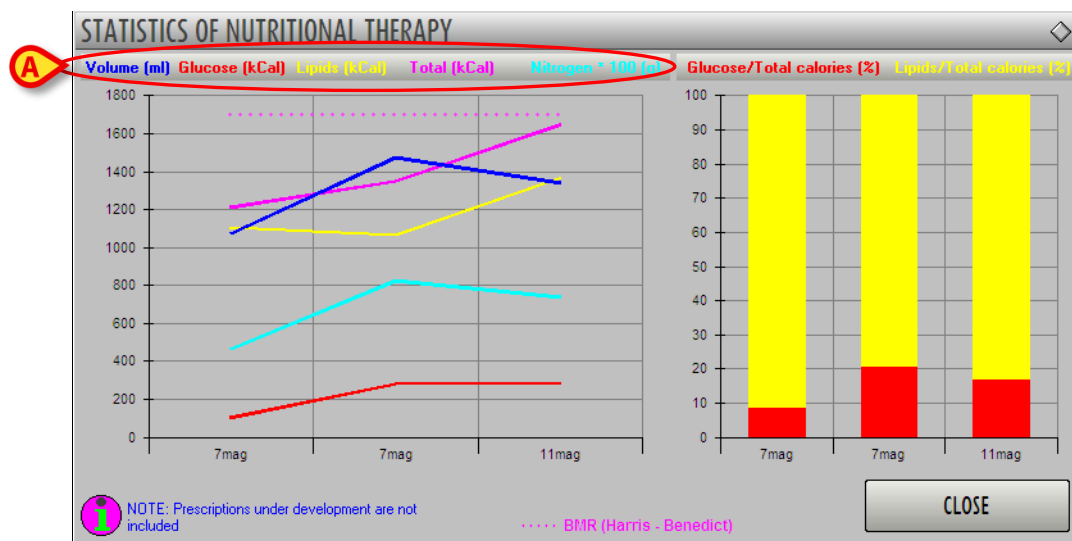
Fig 35 - Statistics of nutritional therapy

The "statistics of nutritional therapy" window offers a visual representation of the trends of the patient's nutrition plans. The window contains two charts. The one on the left (linear) displays the trends of several values separately:
  • volume,
  • glucose,
  • lipids,
  • total calories,
  • nitrogen.

The color of the line on the chart corresponds to the color used to write the name of the value represented. For example: on the window's heading (Fig 35 **A**) the word "Volume" is written in blu, therefore the line representing the volume on the chart is blue; the word "Glucose" is written in red and the corresponding line is red etc... The hatched line indicates the Basal Metabolic Rate.
On the horizontal axis the different plans are indicated by their date of prescription. The vertical axis displays the different values. The unit of measure is indicated on the window's heading, alongside the names of the represented values.

The chart on the right (histograms) summarizes some meaningful values. Each column represents the 100% of the calories provided to the patient by a specific nutrition plan. The red color indicates the percentage of calories deriving from glucose; the yellow color indicates the percentage of calories deriving from lipids.

1.8. How to abort an ongoing nutrition plan

To abort an existing nutrition plan, on the nutrition plans table (Fig 36),

×	Date	Author	Volume ml	Cal.Tot	Glu/tot	Nitrog.	Cal/N2	Glu/Ins	Gluc. kCal	Lipids kCal	H2O	Gluc.	Lipids	Insulin	Nitrog. g	Na mEq	K mEq	Cl mEq	Mg mEq	Ca mEq	P mEq
2		ADM	826	779	14	5,3	147	0,0	113	667	826	28,2	67,4	0	5,3	44	10	40	0	0	8
1	11 mag 09 09:38	ADM	1.341	1.649	17	7,4	224	0,0	282	1.367	1.341	70,5	138,5	0	7,4	60	20	50	0	0	16
0	07 mag 09 13:18	ADM	1.476	1.349	21	8,3	163	0,0	282	1.067	1.476	70,5	108,5	0	8,3	52	20	50	0	0	54
1	07 mag 09 13:16	ADM	1.075	1.212	09	4,7	260	0,0	105	1.107	1.075	26,4	113,0	0	4,7	44	31	62	9	13	21

Fig 36 - Nutrition plans table

➢ Click the row corresponding to the plan to be aborted. The row is this way highlighted.

If the therapy is in status 1 (prescribed), the **Abort** button is enabled on the command bar.

EDIT	VIEW	NEW	ABORT	DELETE	NOTES	PRINT	STAT	UPDATE

Fig 37 - Command bar

➢ Click the **Abort** button (Fig 37). User confirmation is required (Fig 38).

Are you sure you want to permanently ABORT the current nutrition?

YES	NO

Fig 38

➢ Click **Yes** to permanently abort the selected plan. The aborted plan cannot be resumed later.

The aborted plan is still visibile on the nutrition plans table. The corresponding status is 0 (Fig 39).

×	Date	Author	Vol.
2		ADM	
0	07 mag 09 13:18	ADM	1
1	07 mag 09 13:16	ADM	

Fig 39

1.9. How to delete a nutrition plan

To delete a nutrition plan, on the nutrition plans table (Fig 36),

➢ Click the row corresponding to the plan to be deleted. The row is this way highlighted.

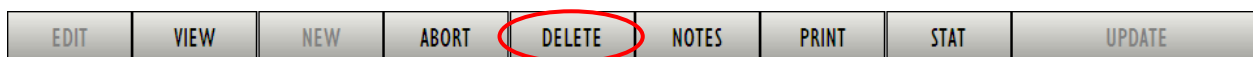The **Delete** button is enabled on the command bar

Fig 40 - Command bar

➢ Click the **Delete** button. User confirmation is required (Fig 41).
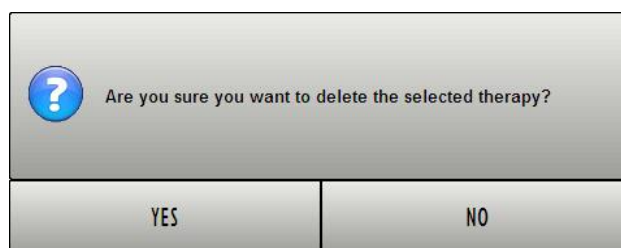

Fig 41

➢ Click **Yes** to delete the selected nutrition plan. The corresponding row disappears from the nutrition plans table.

The deletion of a plan is always enabled, independently from the plan status.

1.10. Patient notes

The **Notes** button on the command bar (Fig 42) makes it possibile to add notes relating to the patient.
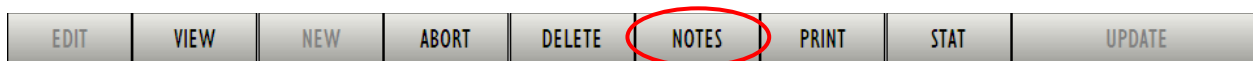

Fig 42 - Command bar

To add a patient note

> ➢ Click the **Notes** button.
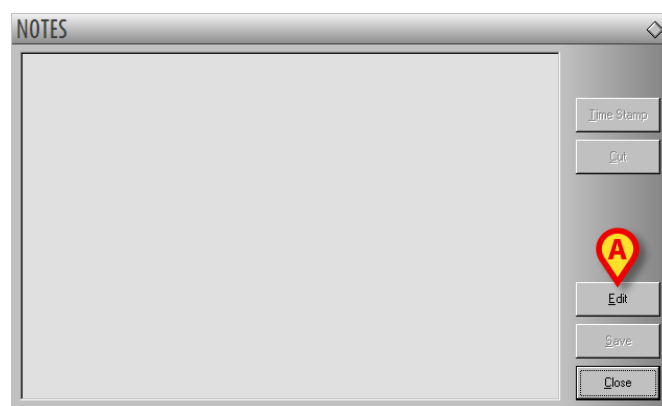
The following window opens.

Fig 43 - "Notes" window

> ➢ Click the **Edit** button (Fig 43 **A**). The window changes and turns to "edit" mode (Fig 44).

Fig 44 - "Notes" window (edit mode)

> ➢ Type the note. The text is displayed in the window.

> ➢ Click the **Save** button to save the note (Fig 44 **A**).

The window closes automatically. The presence of a note is indicated by the color of the button on the command bar, which becomes yellow. Click the button again to display the note again.

Use the **Time Stamp** button on the right (Fig 44 **B**) to display the date, time and the cronym of the user who is adding the note (Fig 45).

Fig 45 - Date and time

Use the **Cut** button (Fig 44 **C**) to cut a selected text portion from the note. To cut a text portion from a note

➢ Click the **Edit** button (Fig 43 **A**).

➢ Select the text to be cut using either the mouse device or the workstation keyboard.

➢ Click the **Cut** button. The selected text disappears from the note.

The notes inserted this way are visible - after clicking the **Notes** button on the command bar - on every Product module currently in use implementing the **Notes** button.

1.11. Print reports

To create a print report

> ➢ Click the **Print** button on the command bar (Fig 46).

EDIT	VIEW	NEW	ABORT	DELETE	NOTES	PRINT	STAT	UPDATE

Fig 46 - Command Bar

A menu conatining several options opens (Fig 47).

Fig 47 - Print options

Each one of the buttons displayed in Fig 47 makes it possible to print a specific kind of documentation. The options shown in the figure are:

- print food list;

- print patient summary;

- print nurse sheet.

Different choices can be enabled by configuration.

> ➢ Click the button corresponding to the wanted document.

A print preview is displayed.

1.12. Annex – Examples of user workflows

1.12.1. Creating a new nutrition plan

To create a new nutrition plan

  ➢ Click the **New** button on the command bar (**A**).

A window making it possible to specify the details of the nutrition plan opens.

  ➢ Specify the items and the values of the new nutrition plan. See the following figure for an example.

> ➢ Click the **Exit** button (**B**).

The window closes. A line is automatically added to the nutrition plan table on the main screen. The new nutrition plan is in status 2 ("in progress").

When the plan is in status 2, date and time are not specified. They will appear later, when the plan is actually prescribed, indicating the time of the actual prescription.

1.12.2. Prescribing a nutrition plan

To prescribe a nutrition plan, after the specification of all the items and their corresponding values,

> ➢ Click the line corresponding to the plan to be prescribed on the nutrition plans table (**C**). The plan must be in status 2.

> ➢ Click the **Update** button on the command bar (first figure - **D**). User confirmation is required.

> ➢ Click **Yes** to prescribe the nutrition plan.

A print report listing all the items of the nutrition plan and the exact amounts is automatically created. A print preview is displayed.

When the nutrition plan is prescribed, it switches to status 1 (see next paragraph for a list of the possible nutrition plan statuses).

1.12.3. Nutrition plan status

There are three possible values for the nutrition plan status, indicated in the first column of the nutrition plan table (**A**).

1 Means that the nutrition plan is completed and prescribed. It has already been added to the patient treatment plan.

2 Means that the specification of the nutrition plan is in progress and that it has not yet been added to the patient treatment plan.

0 Means that the nutrition plan was discarded.

1.12.4. Data entry

To specify a nutrition value:

➢ Click, in the relevant area (Parenteral solutions, in the example), the "Name" cell indicated in **A**.

An arrow button ▾ appears. The arrow button ▾ opens a menu containing all the selectable items. The list of selectable items is created during configuration (**B**).

➢ Click the name of the relevant item.

The name of the item appears in the cell (**C**). The system assigns default values to the item.

To change the values:

➢ Click the value to be changed.

A cursor appears in the corresponding cell.

➢ Type the new value (**D**).

1.12.5. Editing an existing nutrition plan

To edit an existing nutrition plan, on the nutrition plans table.

➢ Click the row corresponding to the plan that must be edited (**A**).

The row is highlighted.

➢ Click the **Edit** button (**B**).

The nutrition plan details window opens.

> ➢ Edit the plan items and amounts on the window.

> ➢ Click the **Exit** button, as seen above.

1.12.6. Viewing an existing nutrition plan values

To view the values of an existing nutrition plan, on the nutrition plans table.

> ➢ Click the row corresponding to the plan that must be viewed (**A**).

The row is highlighted.

> ➢ Click the **View** button (**C**).

The nutrition plan details window opens (in read-only mode).

1.12.7. How to abort an ongoing nutrition plan

To abort an existing nutrition plan, on the nutrition plans table,

> ➢ Click the row corresponding to the plan to be aborted. The row is this way highlighted (**A**).

If the plan is in status 1 (prescribed), then the **Abort** button is enabled on the command bar.

> ➢ Click the **Abort** button (**D**). User confirmation is required.

> ➢ Click **Yes** to permanently abort the selected plan. The aborted plan cannot be resumed later.

The aborted plan is still visible on the nutrition plans table. The corresponding status is 0.

1.12.8. How to delete a nutrition plan

To delete a nutrition plan, on the nutrition plans table,

> ➢ Click the row corresponding to the plan to be deleted. The row is this way highlighted (**A**).

> ➢ Click the **Delete** button on the command bar (**E**). User confirmation is required.

> ➢ Click **Yes** to delete the selected nutrition plan. The corresponding row disappears from the nutrition plans table.