

MedicaPlus[®]

Tickler, Alerts & Notifications

Overview



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TICKLER INTRODUCTION

We live, and will continue to live, in a world where knowledge about information at the right time is can make all the difference. This cannot be more true than in healthcare practice where knowledge of crucial information can mean the difference between life and death for a human soul. Acknowledging this fact, we at Health Insights recognized from the early beginning the vital role time is playing in the daily life of people working in healthcare. As a result, we decided to contribute our efforts to enhance healthcare workers awareness of information in a timely automated manner, by providing them with a mechanism that eases the communication between all individuals and events inside the hospital. We introduce the Tickler Alerts/Notifications system of MedicaPlus which provides, as one of its features, an instant messaging capability, by which, users of MedicaPlus became effortlessly capable of sending, receiving, online and offline messages to exchange imperative information.

The second great feature of the Tickler system, which is the main feature as well, is the alerting and notification capability, which is used to fire alerts at each exact interval specified by the alert's originator. These alerts are fired only to those users who were privileged to receive such alerts to perform user specified actions upon them.

The magical word here is *dynamic* as administrators of MedicaPlus are dynamically capable of:

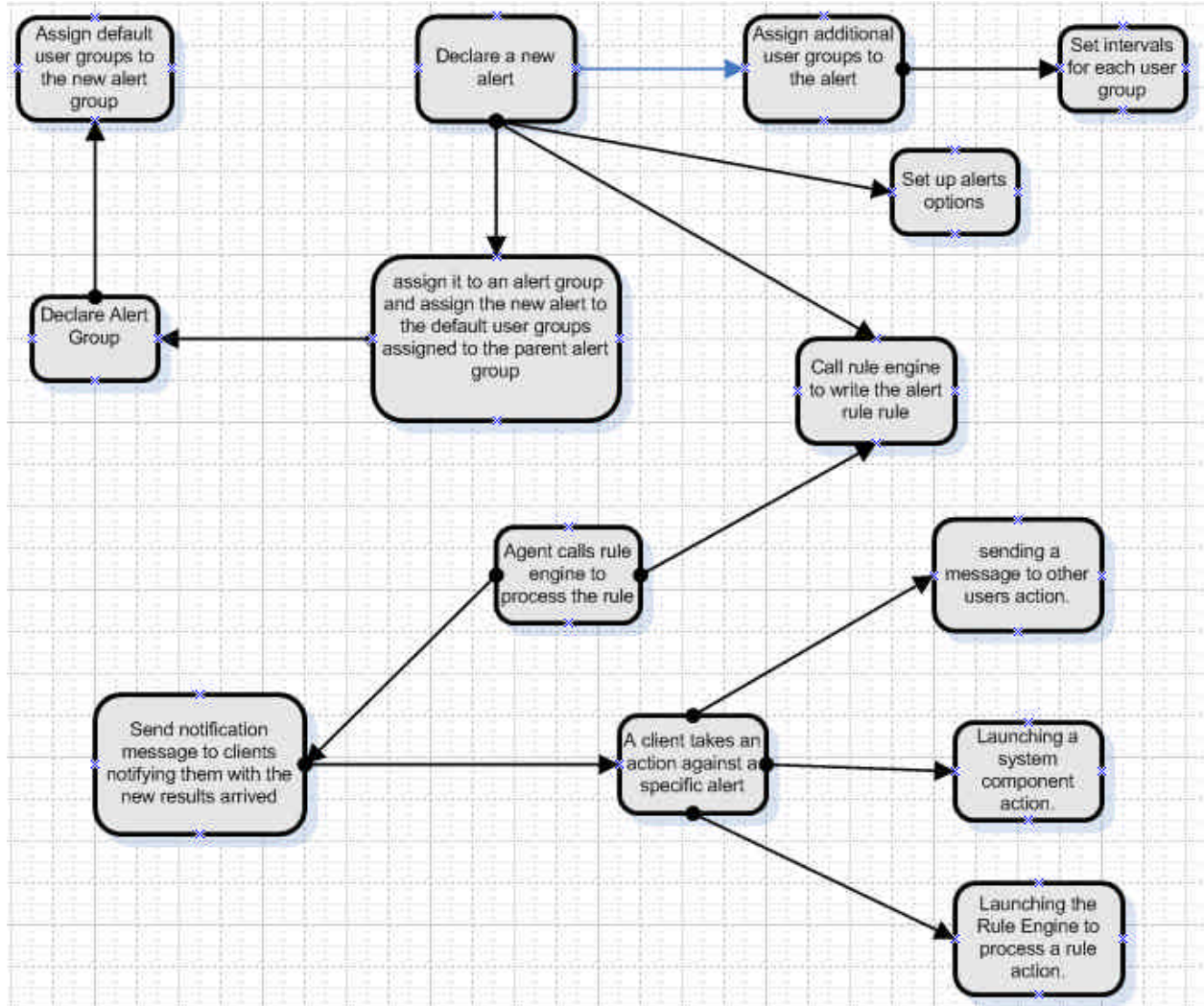
- ? creating new alerts as a result of new situation that require alerting specific types of users at each specific time intervals.
- ? Modifying existing alerts/actions to reflect the changes in the requirements because of which the alerts were principally created.
- ? Stop running alerts or even delete no longer needed alerts.

This document will introduce the features of the MedicaPlus Tickler system in the following sequence:

- **Workflow**
This section will illustrate an overview of the workflow of the MedicaPlus Tickler system.
- **Tickler Agent**
This section describes the nature of the Tickler Agent work and illustrates the role it has in the Tickler system life cycle.
- **Tickler Admin**
This section covers the features available for managing alerts and their actions through the Tickler Administrator module.
- **Tickler Client**
This section illustrates how the Tickler Client module captures Alerts' results and how it represents them to the user so that he/she can take the appropriate action.

WORKFLOW

The following diagram illustrates a typical Tickler life cycle demonstrating the use of the Tickler components throughout every step.



TICKLER AGENT

The Tickler Agent is a windows service application that manages the operations of processing the alerts, firing alerts results, notifying tickler clients with new alerts and manages the process of sending and receiving messages between Medica Plus users. It is a typical server application that works behind the scene with neither user interface nor user interaction.

TICKLER ADMINISTRATOR**STEP 1: DEFINING ALERTS**

Tickler Administrator is where administrators of Medica Plus are capable of defining alerts groups and alerts.

The typical cycle starts with defining an alert group then assigning default user groups to it.

The following step is the process of adding new alerts, where each alert is assigned to an alert group and will, by default, inherit all user groups associated with this alert group.

The administrator has the flexibility to associate more user groups to a specific alert, de-associate existing ones, or even pick individual users inside the associated user groups to be assigned to the alert rather than assigning the whole user group.

Furthermore, the administrator is required to define alert interval for each assigned user group so that each user group can receive the alert results on the interval it was assigned to.

For example, we might decide to fire a specific alert to a user group each 10 minutes and in the same time, we will fire the same alert to another group each 30 minutes.

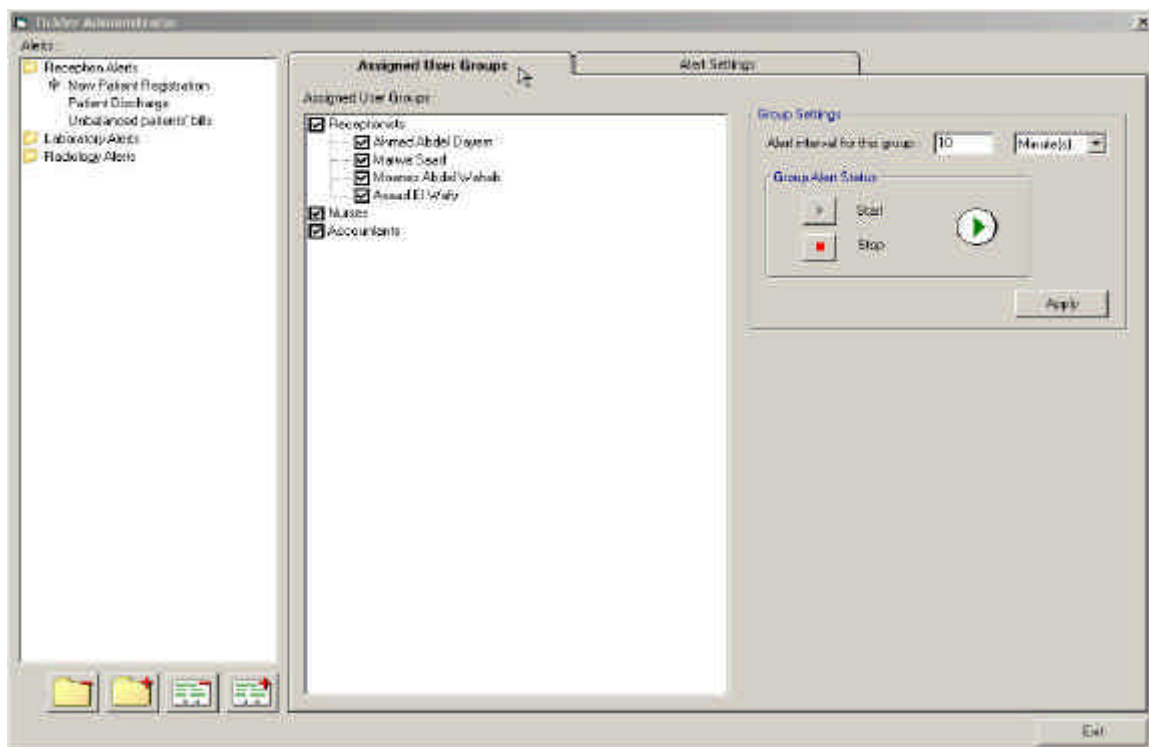


Figure 2. Tickler Administrator (Assigning Alerts to user groups process)

❖ STEP 2: SETTING UP THE ALERTS

After completing step 1, the administrator should move to step 2, in which he /she is required to setup the alert and set its options.

The administrator first determines the rule name in the Rules@Work Toolkit that will contain the logic of the alert. The administrator will be the one who is responsible of defining this rule using the Rule Composer module of the Rules@Work Toolkit. *See figure 4.* Then he will define a notification message that will appear to the clients when new results of this alert arrive to their workstations.

The admin should then define actions to be available for the clients when new alerts/notifications arrive. Those actions can be just sending a message to other users in the system, launching other system components of MedicaPlus or just calling the Rules@Work Rule Processor to process a rule or trigger a process.

Automated actions are configurable as well so that the system Tickler agent can initiate them without user intervention. Examples might be sending SMS messages to doctors when new patient laboratory test results become available without waiting for a user to trigger this action manually. Any type of action can be configured as a Rule/Process in the Rules@Work Toolkit and can be triggered as either a manual or automated action.

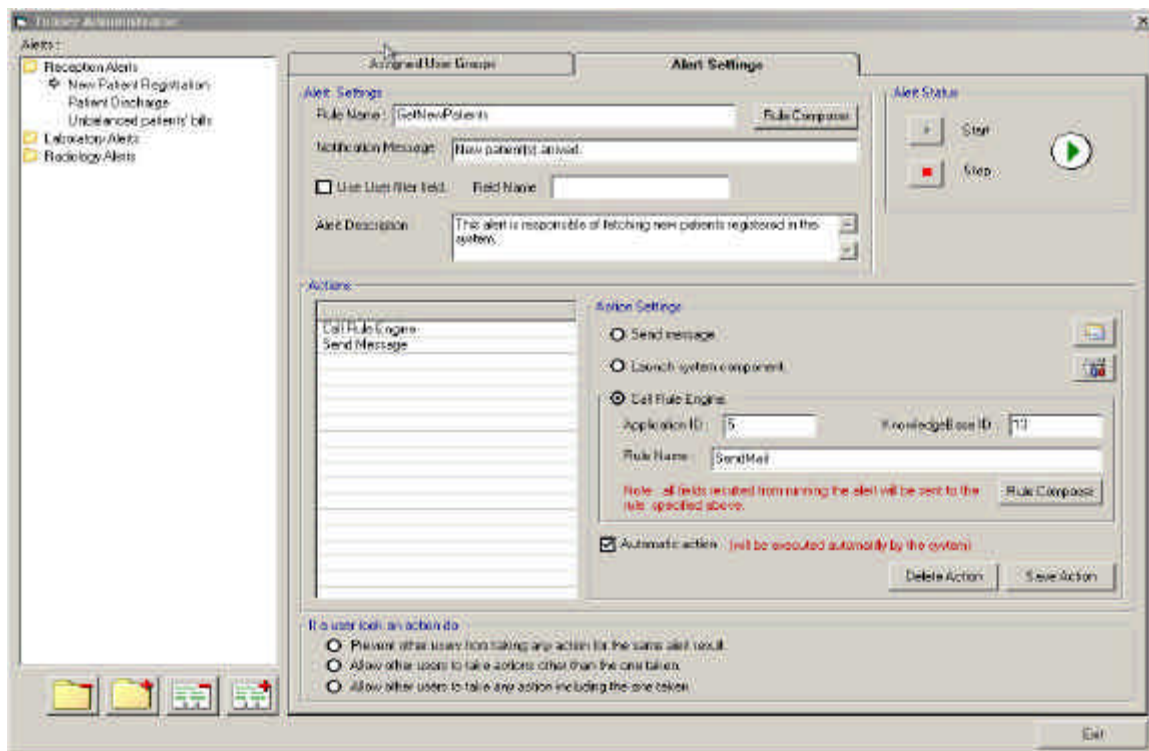


Figure 3. Tickler Administrator (Setting up an alert)

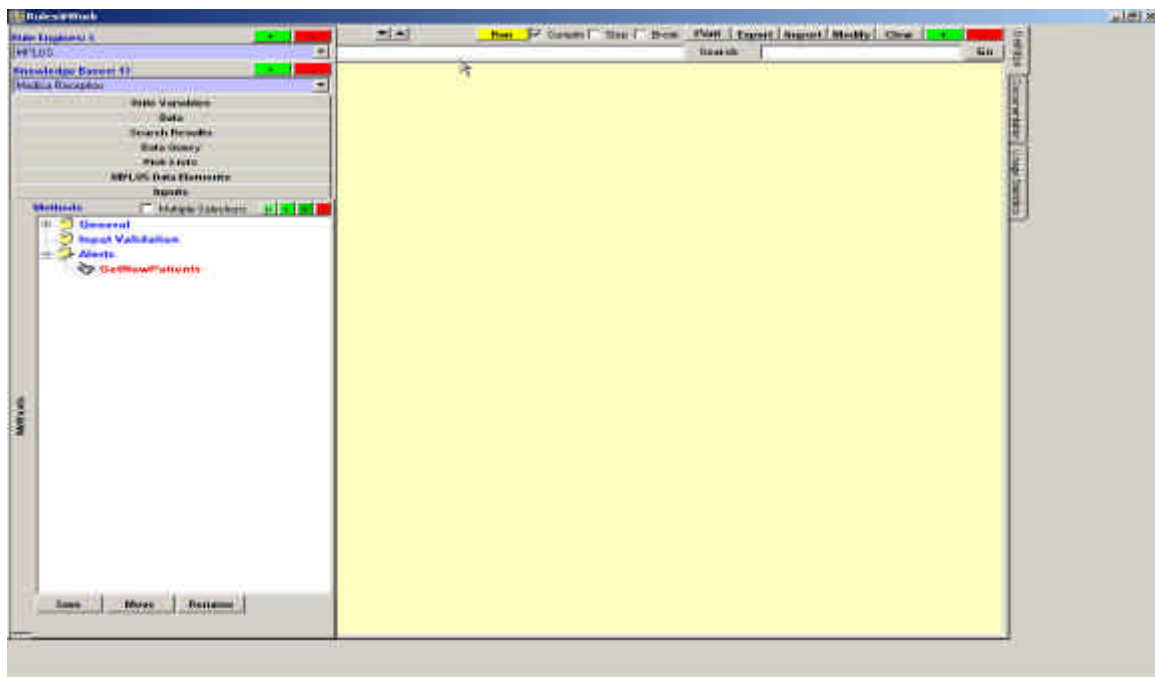


Figure 4. Rule Composer containing the new alert rule.

TICKLER CLIENT

Tickler Client is the module where users of Medica Plus can send and receive online and offline messages to exchange important data. As illustrated in figure 5. The Tickler Client can work as a complete mail client that is capable of doing almost all the functionalities a typical mail client does.

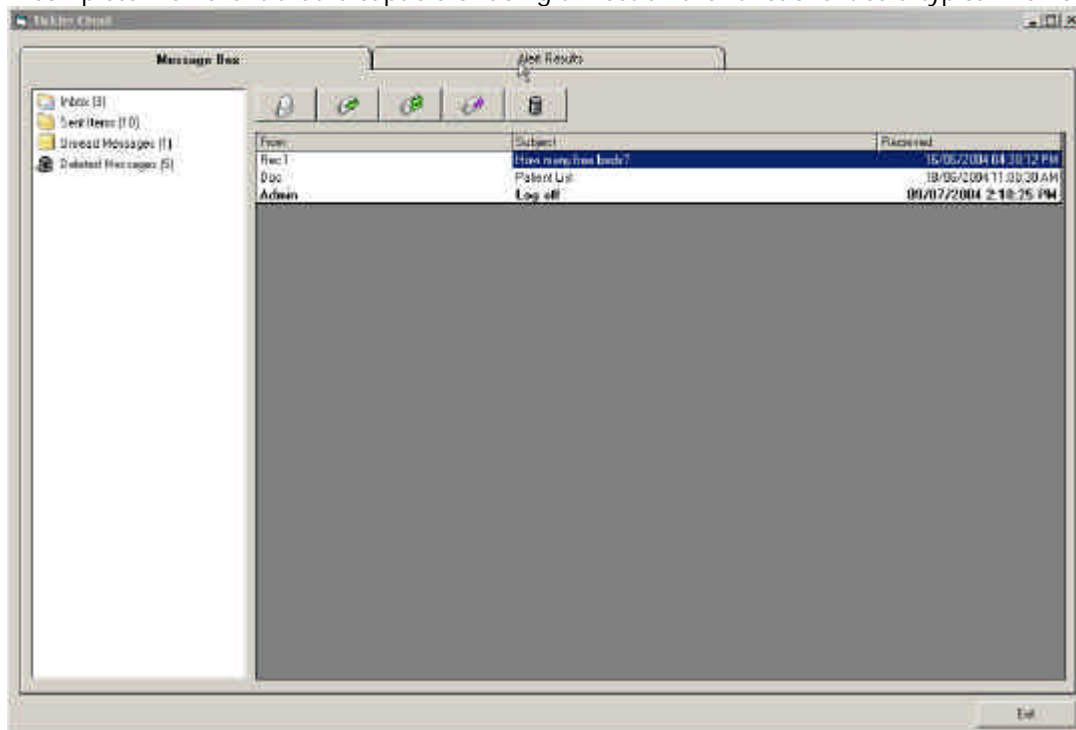


Figure 5. Mailbox.

In addition, the Tickler Agent module receives the results of the alerts assigned to the user currently logged in the module and allows the user to start performing actions against the new alert items. By double clicking on the desired alert item or by just selecting the desired result and pressing Ctrl+A, a

dialog will popup that displays a list of pre-defined actions for this alert from which the user can select an action to perform.

The Tickler Client helps the user distinguish between items that have been processed and items that were not yet processed utilizing color codes as shown in figure 6.

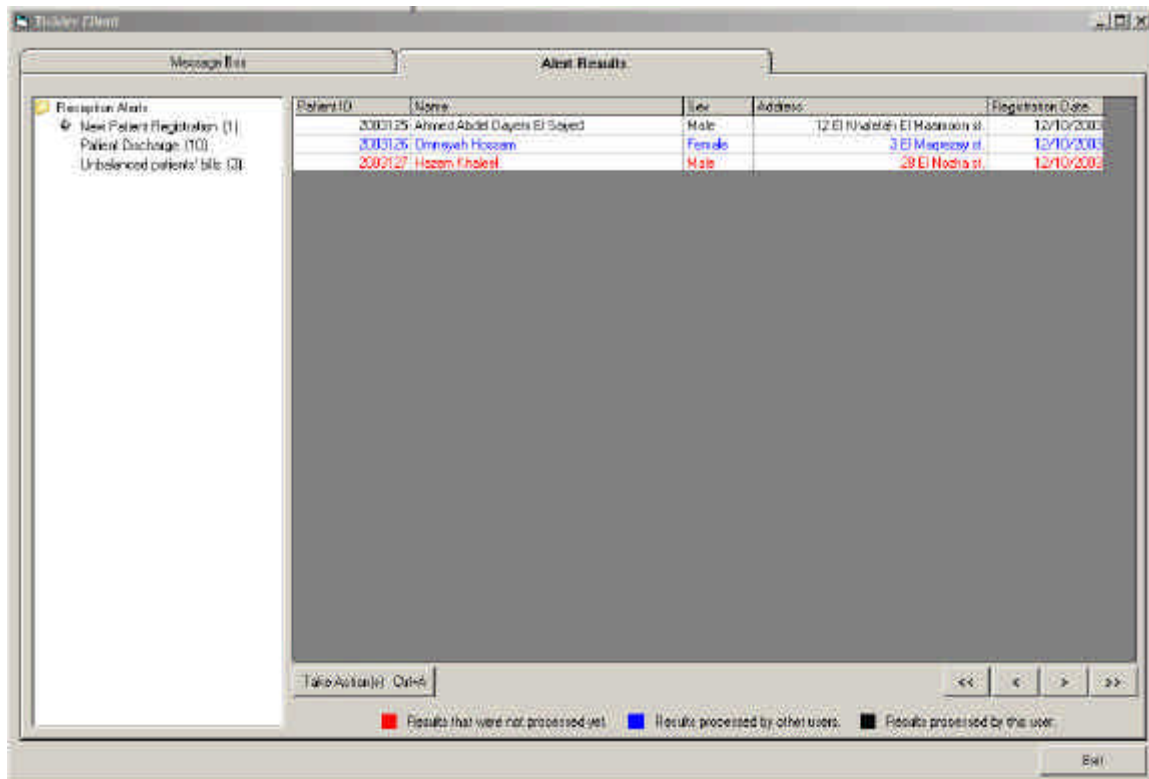


Figure 6. alert items

TICKLER USES

The uses of the Tickler Alerts/Notifications are virtually limitless, ranging from new admission notifications to auditing alerts of delay in services, to clinical data evaluation, assessment and alerting, etc...

The combination of the Tickler Alerts/Notifications, Rules@Work Toolkit and Active Medical Sheets Framework opens limitless possibilities for automating many tedious manual tasks that would otherwise consume tremendous amount of time and effort from medical and non-medical staff in the hospital. In addition, it is used as a tool for quality of service monitoring in real time. By setting the same alerts to different intervals to different users, problems can be configured to be escalated to higher levels of authority gradually as the same alerts persist and no corrective actions are taken by users at lower level to eliminate the reason for the alerts.

The concept of empowering the hospital with this rich toolset is a revolutionary approach that is changing the way many hospitals conduct their business to improve quality, lower operating costs and increase both patient and clinician satisfaction. Different implementations of the Tickler system will undoubtedly reveal many innovative uses/applications that each hospital might innovate.