

DEA 4700  
CRONOS Recommendations  
Team 2

Timothy Bromm, Yen Chiang, Tal Gluck, Natalie Hackworth, Claudia Mei, Julia Tazin

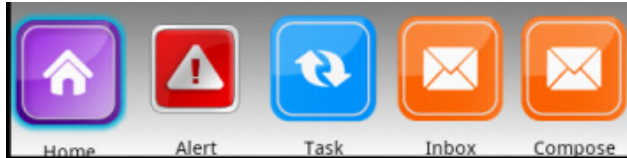
## Some guiding principles behind the recommendations

It can be difficult to navigate and select from a long list of options on smart phones. There should be a balance between breaking down steps in a selection process (such as in ordering) for clarity and letting the user (such as an expert user) use their own methods. The process should never seem long-winded or unnecessary, and therefore time-consuming and frustrating for the user.

There should be consistency among appearance, possible actions, and outcomes. For example, if the user made a choice in a menu, the current "state" should always be highlighted in blue. Or, drop-down menus always look and function the same way.

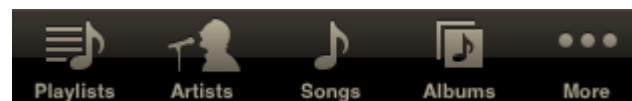
Consider: How will the hard buttons on the phone interact with the interface. Will the hard "back" button bring users to the previous screen? Currently, there is no need to use the hard buttons to function in the CRONOS system (except for one case in messaging which is discussed).

## General application recommendations

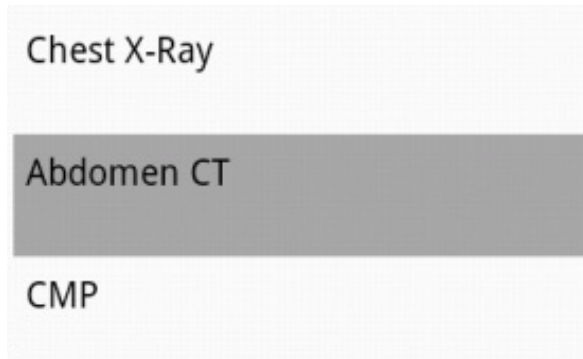
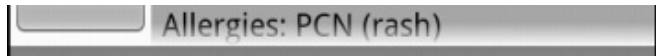


### Navigation Bar

- Remove buttons "Compose" and "Tasks"
  - » Compose can be included in the inbox.
  - » Tasks should be set into the patient details, because the current process involves having to click on a patient first anyway. (*See the work flow diagrams.*)
  - » By removing "Compose" and "Tasks," there are only 5 buttons left on the navigation bar and the user will not have to slide it for more options.
- Tasks should be re-named as "Orders," as Tasks sounds more like To-Dos.
- Limit the number of colors used throughout the system and keep consistent.
  - » The color scheme for the bottom row could be less varied and bright. Since this bar appears on all screens of the app, the user will be very familiar with the contents of this bar and there is no need to call attention to it.
  - » Use color to call attention to critical decision-making steps or buttons.
- If needed, the bar could be a smaller. There are two options: 1) include the word on the button (ex: put 'Home' in the purple square) or 2) get rid of the squares altogether but leave the white icons; this will free up space and make the colors easier on the eyes. As a reference, the iPod navigation bar:



## General application recommendations



### Scrolling

- The white fade at the bottom of each screen to indicate that you can scroll can be problematic if the color above it does not contrast that color (i.e. if the white fade is above a white background, you cannot tell that you can scroll).
  - » A suggestion is to change the color of the fade so you can tell that there is information below.
  - » Another method could be to use a scrollbar that appears when the user holds down on the screen.

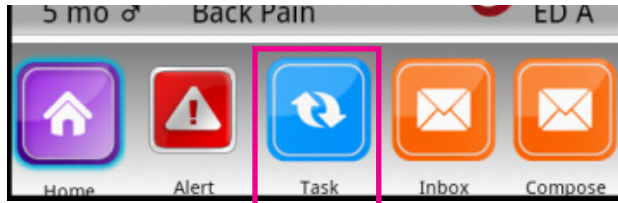
### Lists

- Eliminate the gray/white color scheme of list items as it seems to highlight certain items and make them seem more important.
  - » Instead, items can be separated by thin black lines against a white background. The first line of text (if there are multiple lines, such as in the list of patients) should be bold to further reinforce the chunks of information.
  - » The grey backgrounds also occluded ">" arrows in certain screen shots.

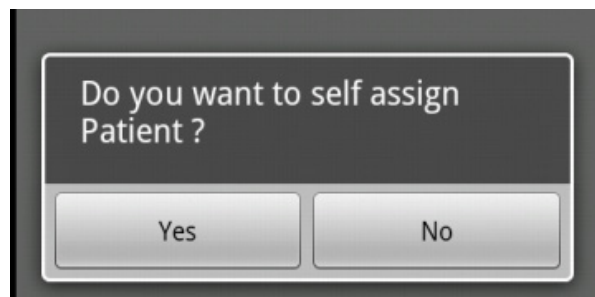
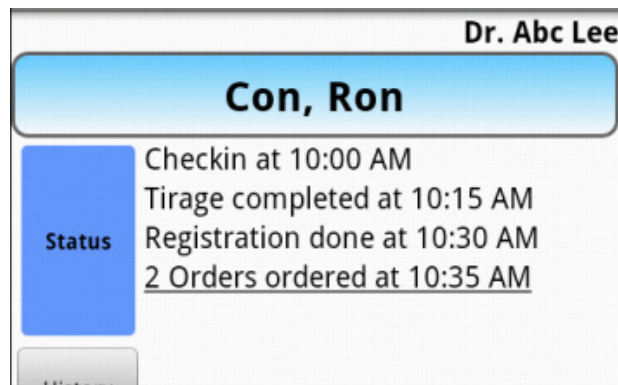
### Input

- Only use single taps (clicks) as double clicking might not be intuitive on a smart-phone.

## General application recommendations



Tasks cannot be selected until a patient is selected.



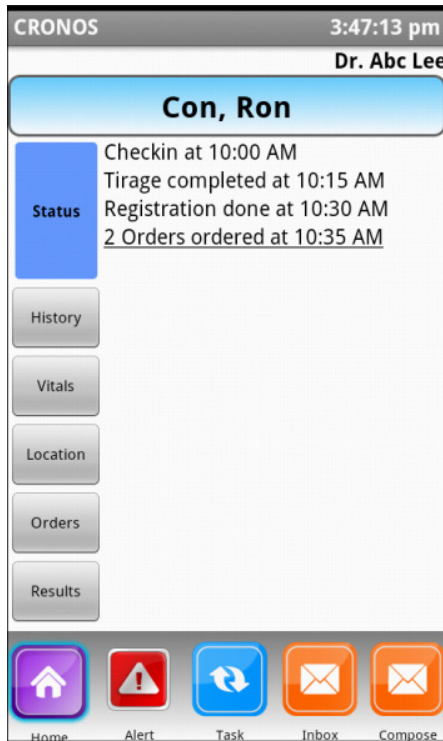
### Buttons

- Buttons should be obvious as to whether or not they can be selected.
  - » Eg. grey text for an inactive button, black text for an active button
  - » Inactive buttons can also indicate to the user whether or not an option contains further information, before they select that button. For example, there will always be a “pending orders” option, but there may not be any pending orders.
- The current method of using a blue highlight to indicate the selected button/ current state is a good feature and should be continued throughout the system.

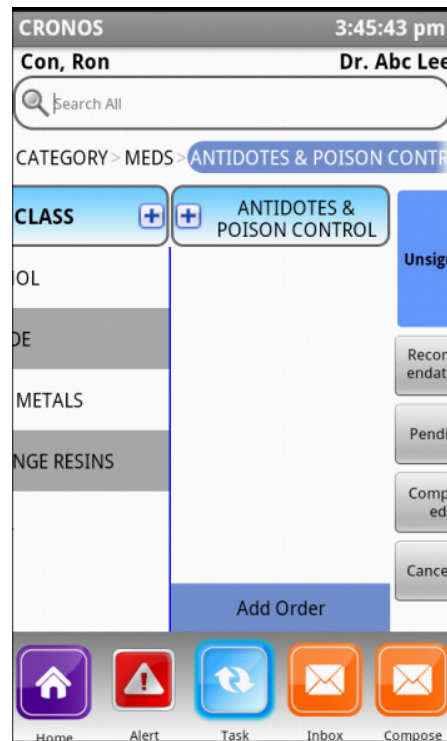
### Alerts + Pop-ups

- The user should be notified of any new alerts. One possibility is to use a pop-up that says “You have \_\_\_ new alerts,” and give the user the option to view the alerts (which could close the pop-up and bring the user to the Alerts page) or close the pop-up (and remain on the current page).
- Use pop-up confirmation boxes such as the one for self-assigning patients.
  - » They reassure the user that pressing “no” or “cancel” will return to them to the page that they were previously on.
  - » Other possible contexts to use pop-ups are: Confirming that user wants to place order, signing off on unsigned orders, and **actions when correcting an error is not possible from the smart phone.**

## General application recommendations



Patient name clearly displayed.



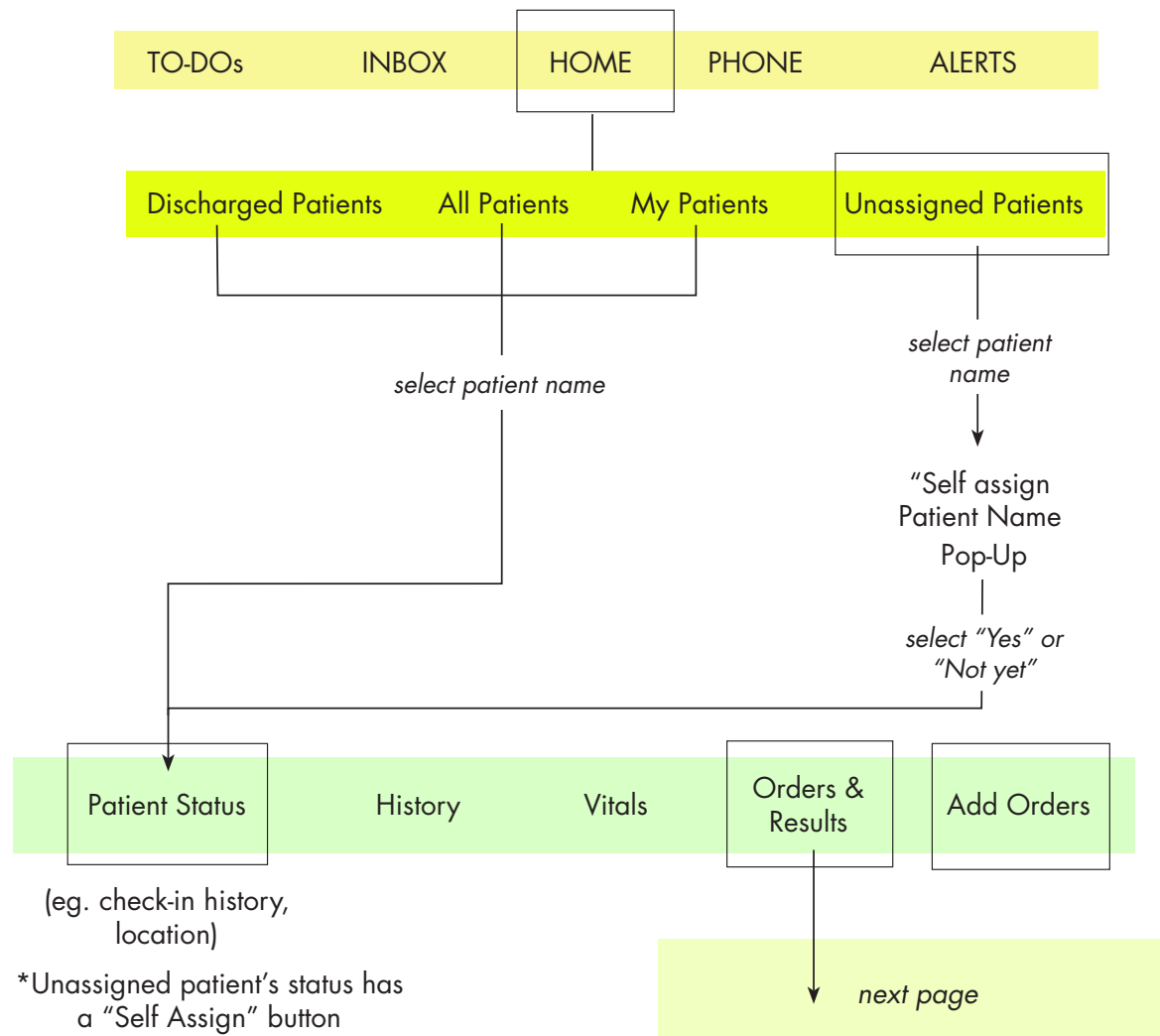
Patient name is not prominent.

## Patient Names

- Working on the correct patient is important, so the name should be prominently and consistently displayed on screens that involve specific patients, such as patient information and ordering.

## Work Flow

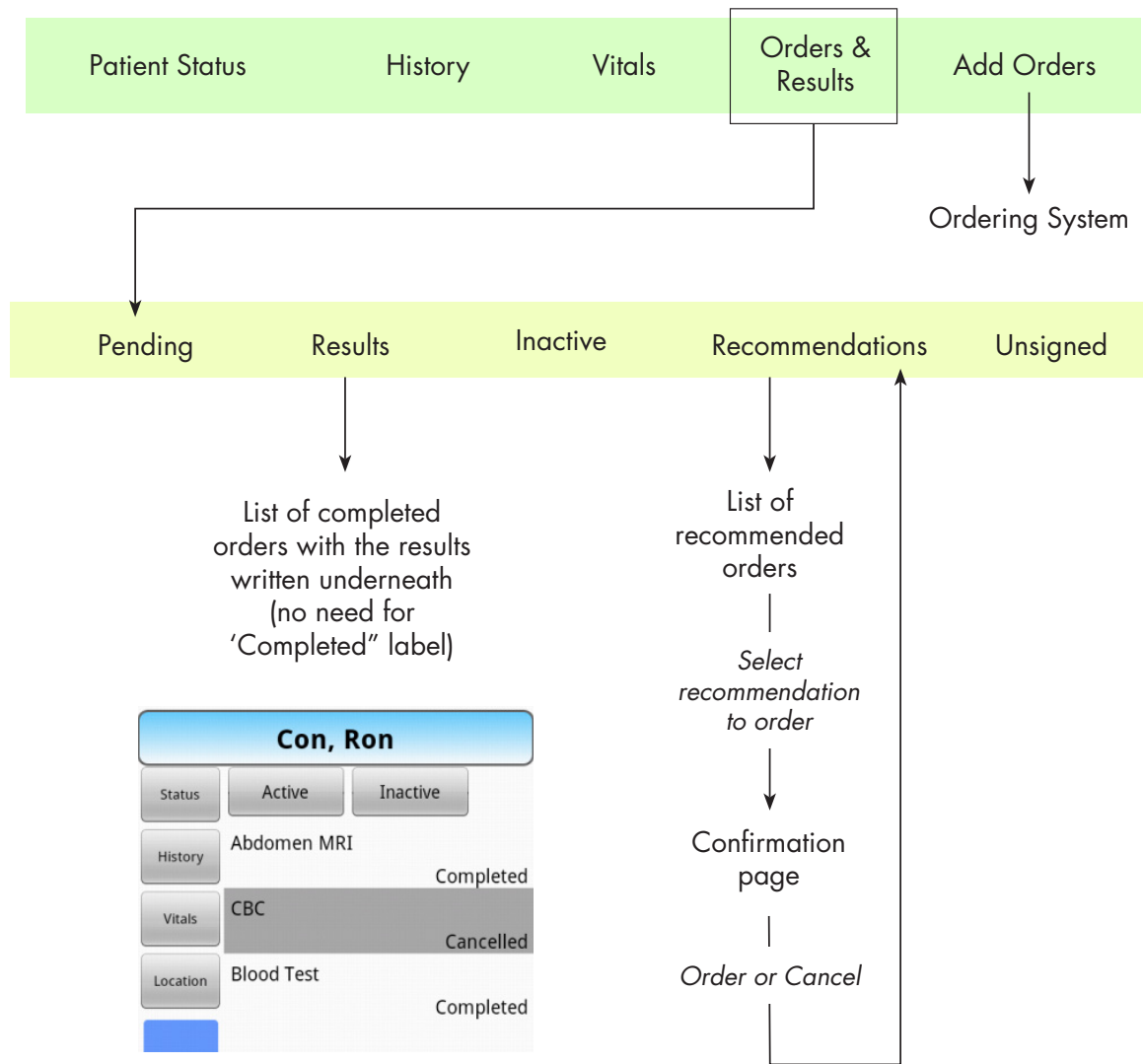
- See work flow charts on the following pages for recommendations on the system structure from a user's point of view.
  - The charts are not comprehensive; they highlight areas where we had specific recommendations and significant changes.

**Work flow** (not comprehensive)**Freely navigate among options in a highlighted bar**

*(Lateral order of options is for spacing only. They are not design recommendations.)*

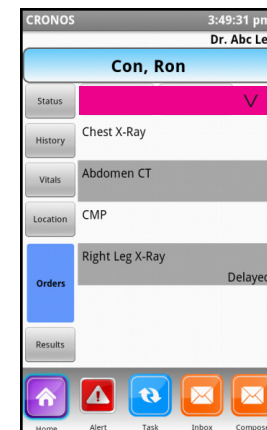
- Selecting "HOME" brings you to the most recently-chosen patient page.
- Place Ordering/"Tasks"/ADD ORDERS within Patient Information because ordering is patient-specific.
- Remove "Add Orders" and/or other unneeded actions for discharged, unassigned, and other doctors' patients.
- Consider combining Orders and Results, because the two are related, and to minimize the number of buttons.
- Include Location in Patient Status to save space.

**Work flow** (not comprehensive)

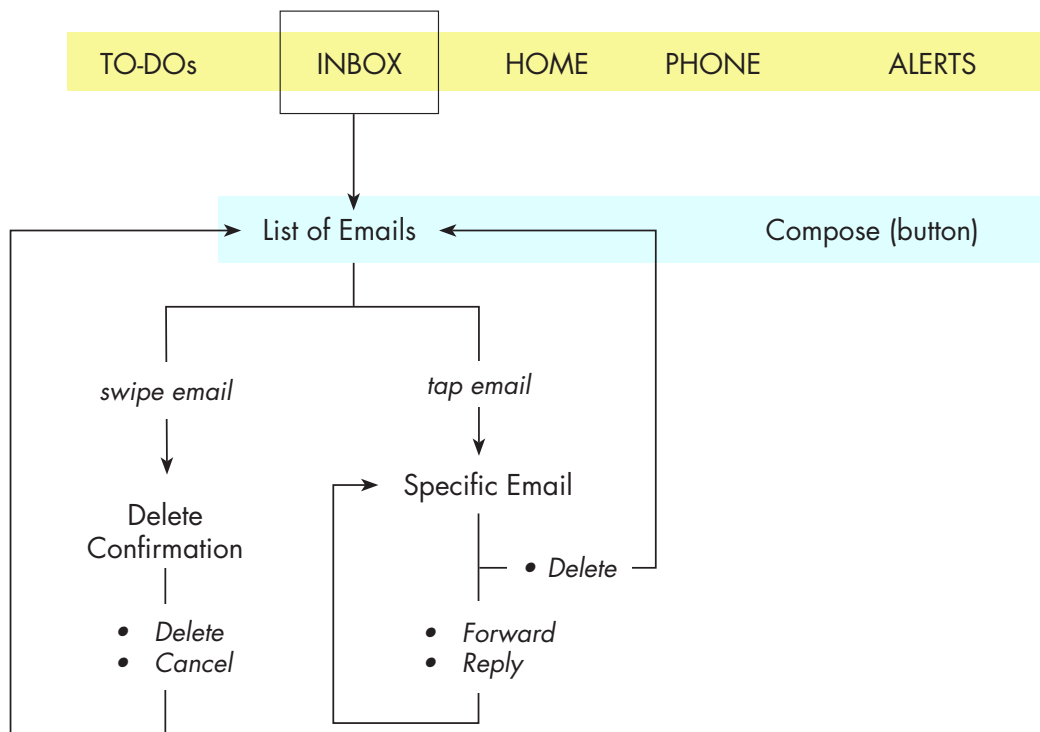


**Freely navigate among options in a highlighted bar**

- Selecting “Orders & Results” brings user to Pending Orders.
- It would be difficult to have five options within the Orders frame (currently there are two options in Orders: Inactive and Active options).
  - » We suggest a drop-down menu in line where the Active and Inactive buttons currently are. See page 11. This would eliminate the need to go “back.”



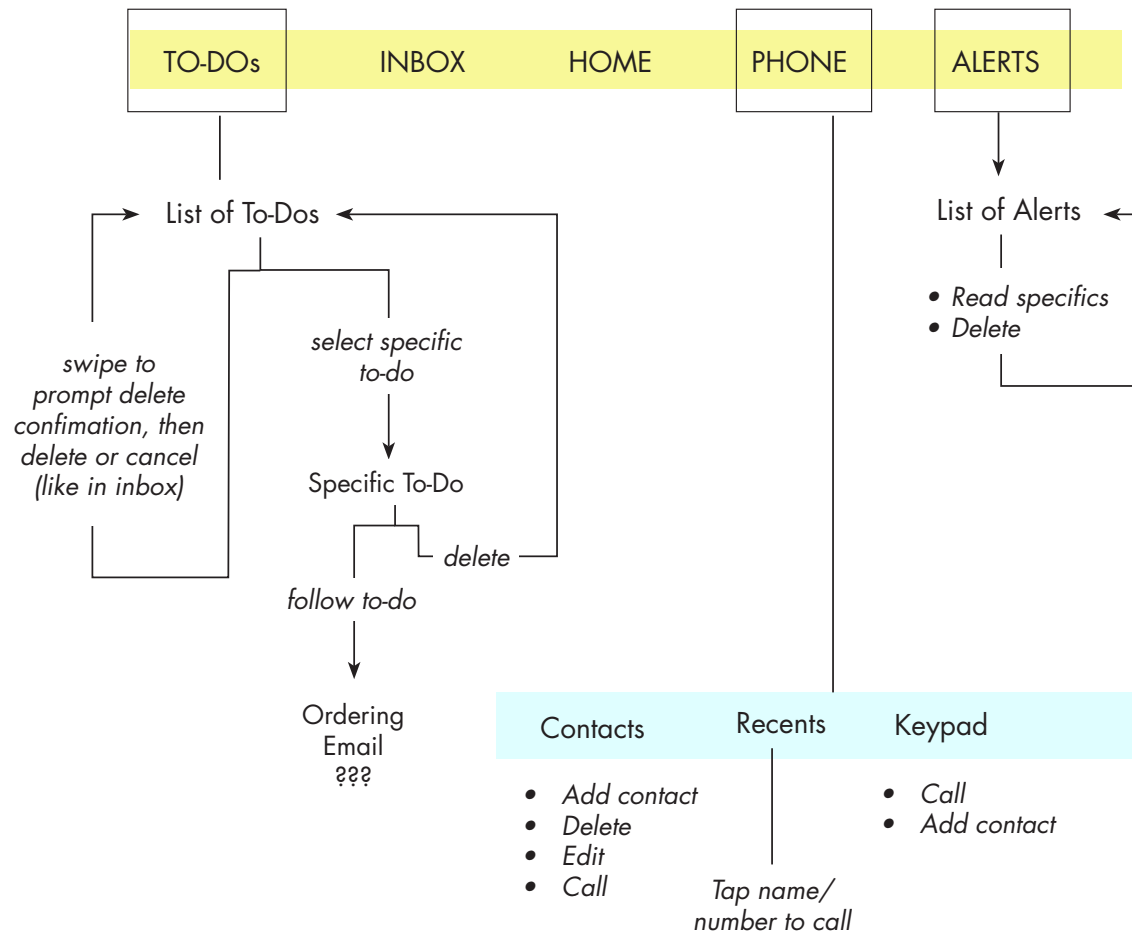
### Work flow continued (not comprehensive)



### Freely navigate among options in a highlighted bar

- From any specific email or composing stage, click on INBOX button to return to the list of emails.
- In order to facilitate email management, deleting emails should be possible in the inbox/without having to select the email first.
  - » Swiping the email is one option.
- The Compose button should be available on all INBOX pages.

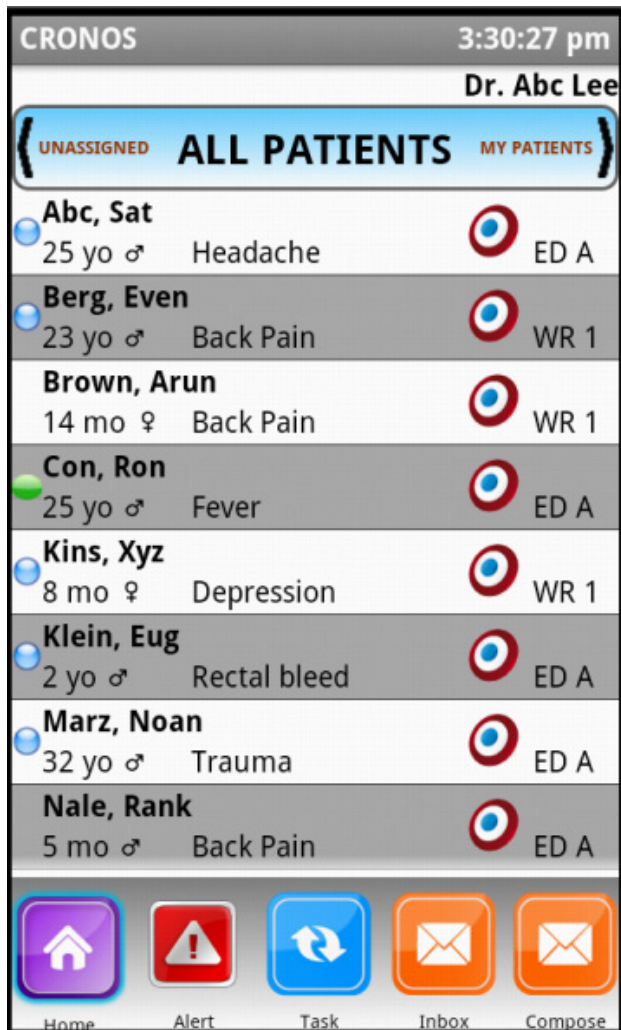
Work flow continued (not comprehensive)



Freely navigate among options in a highlighted bar

- In To-Dos, any pre-programmed action should be able to be executed from the To-Dos menu.
  - » If, for example, a To-Do was an order, the user should not have to go to Home, then patient, then Orders.







## Home screen



## Patient Information

- Eliminate color-coding system of doctors to minimize confusion (if there are upwards of 400 doctors using the system it could become confusing)
- Remove double clicking. Only need to click a patient once to access their information (remember from general recommendations page that Ordering will be included in patient information).
- Consider using M/F instead of the symbols for sex. On a small screen, the symbols could be difficult to differentiate and require more time to interpret.

## Home screen continued

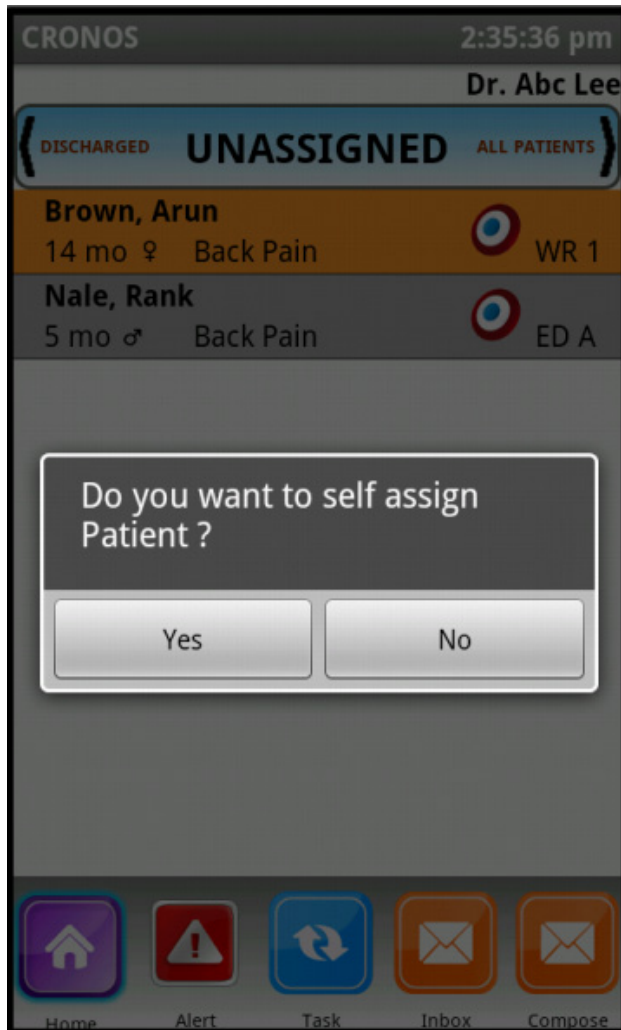
ALL PATIENTS ▾		
Sort by Name	Sort by Tasks	
<b>Abc, Sat</b> 25 yo		ED A
<b>Berg, Evan</b> 25 yo		ED A
<b>Brown, Arun</b> 25 yo		ED A
<b>Con, Ron</b> 25 yo		ED A
<b>Kins, Xyz</b> 25 yo		ED A
<b>Klein, Eug</b> 25 yo		ED A

## Bull's Eye

- Remove the bullseye and just include the fraction (i.e. 3/5) to eliminate unnecessary actions and make important information visible.
- Allow sorting by task completion (bull's eye) and patient name.
- The Task Circles could also be color-coded.
  - » Green circles represent patients with all completed tasks, yellow means somewhat completed, and red circles represent patients with no tasks completed. This gives doctors quick visual feedback to their task progress and identify patients in need of their attention.



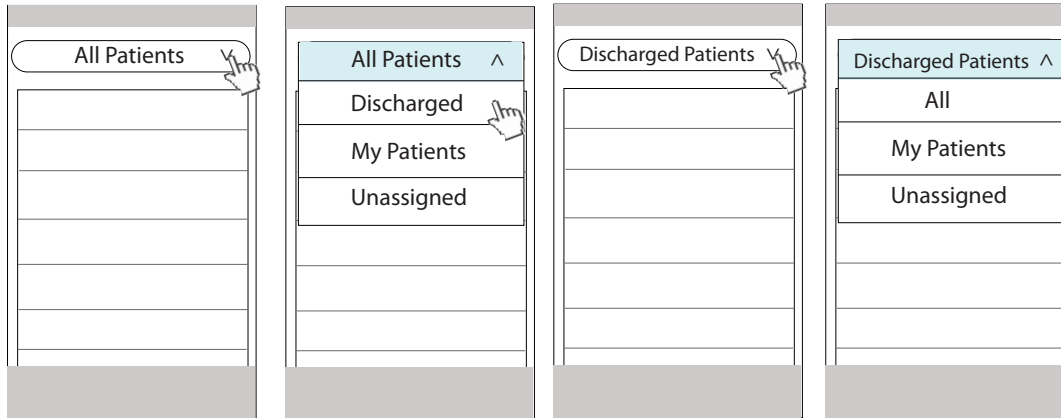
## Home screen continued



## Unassigned patients

- The wording on the pop-up is misleading. For a first-time user, the expectation may be that selecting “No” removes the pop-up to return to the unassigned patient list. However, “No” brings the user to the unassigned patient’s details, where there is another opportunity to self-assign the patient.
  - » Instead of “No,” the option could be “Not yet.”

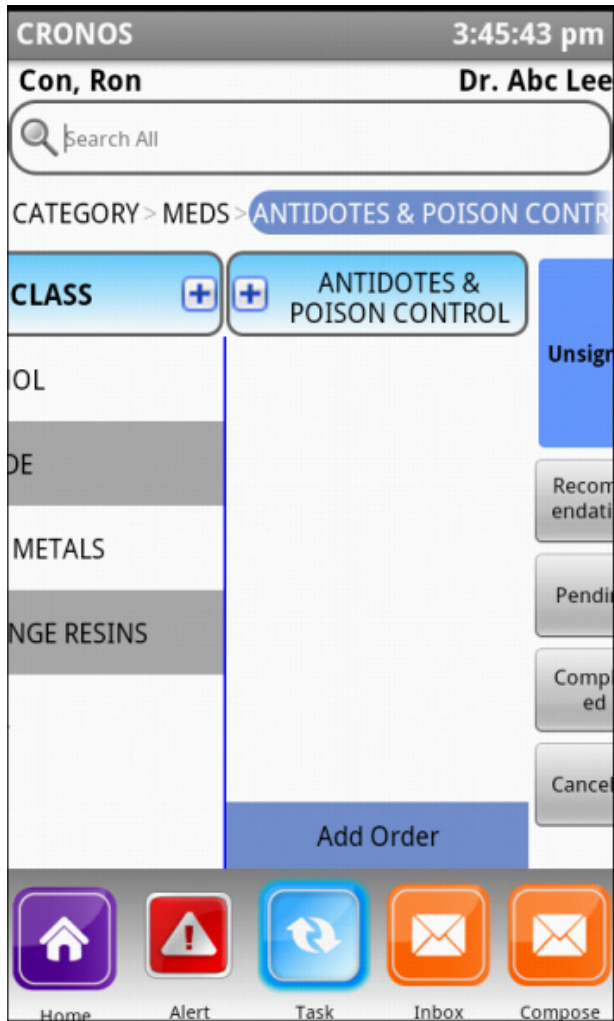
## Home screen continued



## Drop-down menu

- 'All Patients', 'My Patients', 'Unassigned', and 'Discharged' should be included in a drop down menu so that users have access to all options at once, instead of scrolling through options.
- Order options alphabetically.
- The direction of the arrow changes from "down" v to "up" ^.
- The highlighted option can be selected to hide the menu.
- The options can be shorted to exclude "patient."

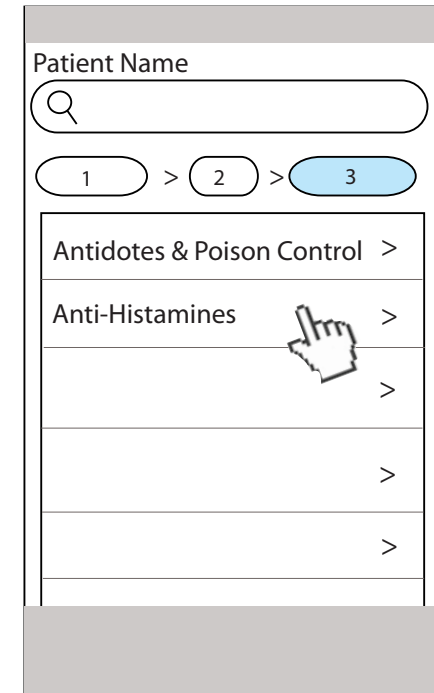
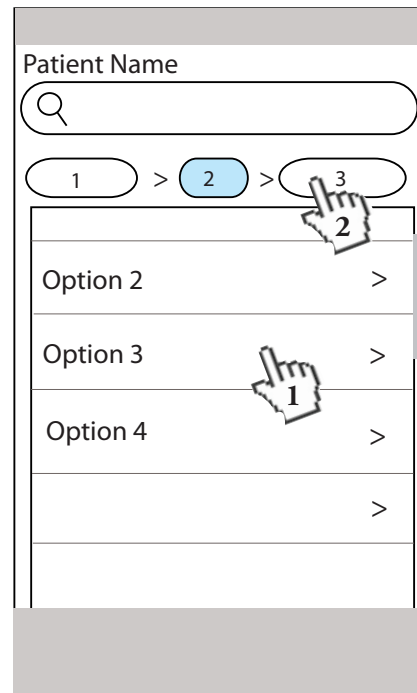
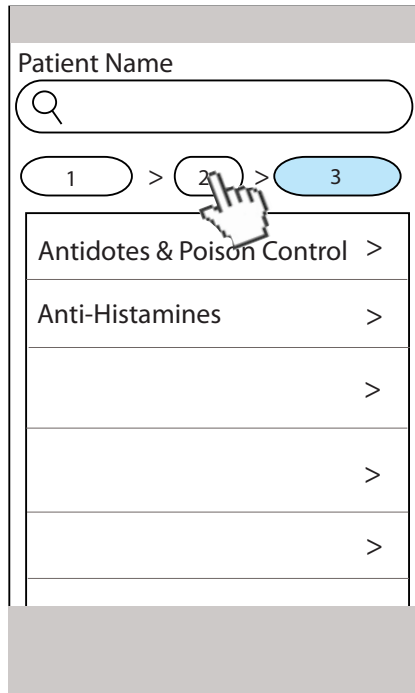
## Ordering



- We like the use of breadcrumbs to keep track of the options selected, so we incorporated that idea in our storyboard (see following pages).
- Further options for orders (recommendations, unsigned, etc.) are hidden and not intuitive to find.
  - » The system should not use the side swipe.
  - » These options are included in the patient details in the suggested work flow.

## Ordering continued

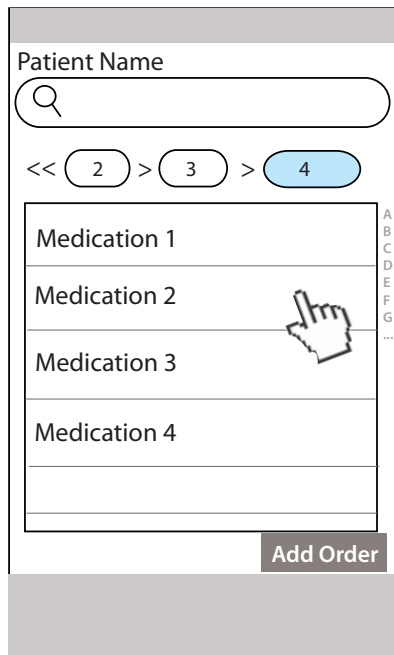
### Storyboard p. 1 of 2



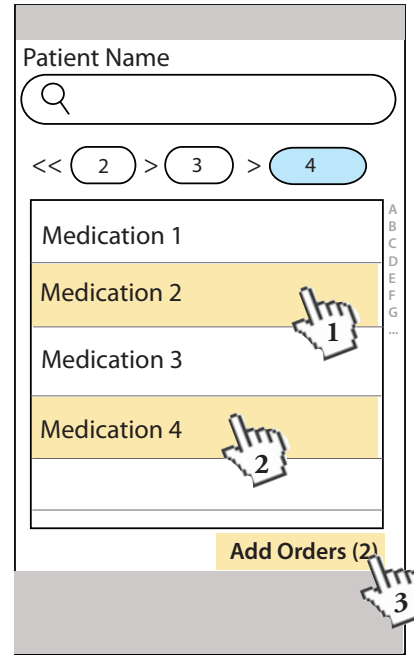
- Use 'bread crumbs' to navigate; current stage is always highlighted.
- Title Case Lettering Is Easier to Read In A List Than ALL CAPS.
- 2 ways to show that there are more options (use both):
  - 1) Part of the next option shows;
  - 2) Holding a finger on the screen in the list area brings up a scrollbar.
- When going back in the bread crumbs (ie. from 3 to 2), the options in "front" do not disappear unless an alternative is chosen. This is helpful if the user wants to double-check his/her choice against the options.

## Ordering continued

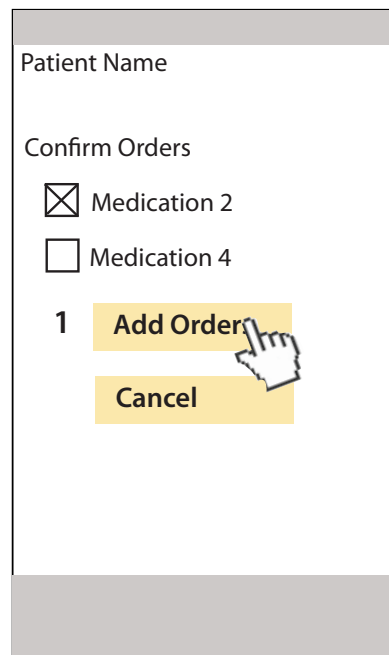
Storyboard p. 2 of 2



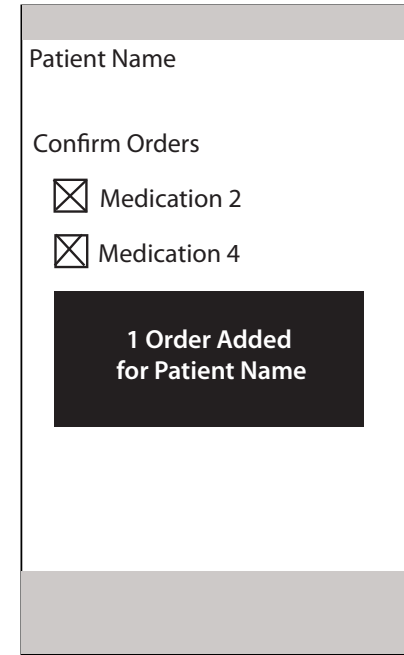
- Before any orders are selected, the Add Order button is inactive.
- If the list is long, consider using an “alphabet” system like in iTunes, where clicking a letter brings you to items beginning with that letter.



- After selecting at least one order, the Add Order button activates.
- More than one order can be highlighted.
- Number in parenthesis after Add Order helps user keep track.

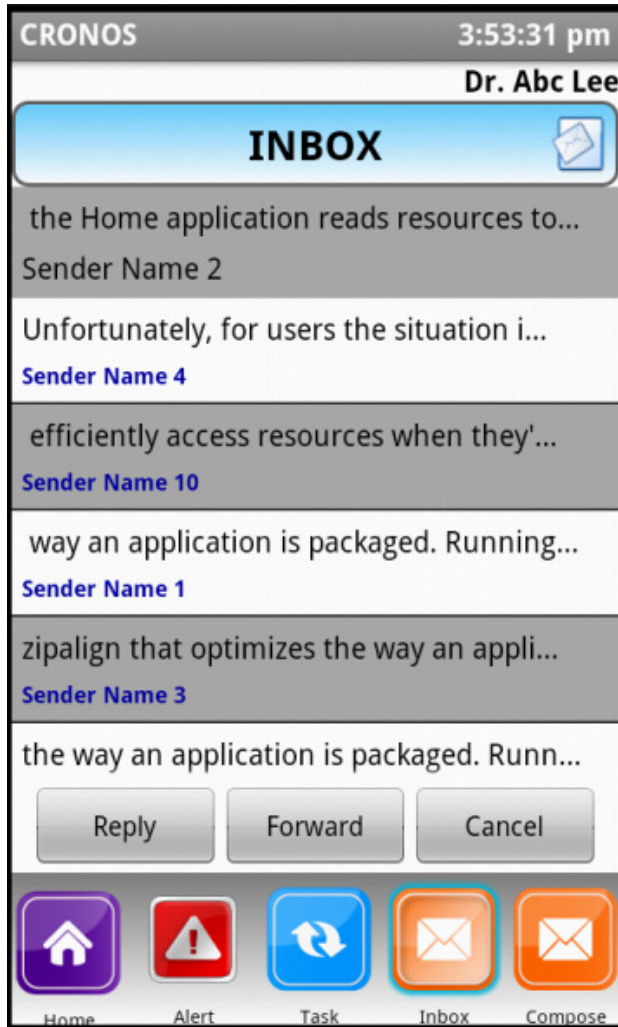


- Boxes can be checked/unchecked, and the number below updates.
- “Cancel” brings user back to previous screen, with orders highlighted.
- Can be a pop-up (see general recommendations).



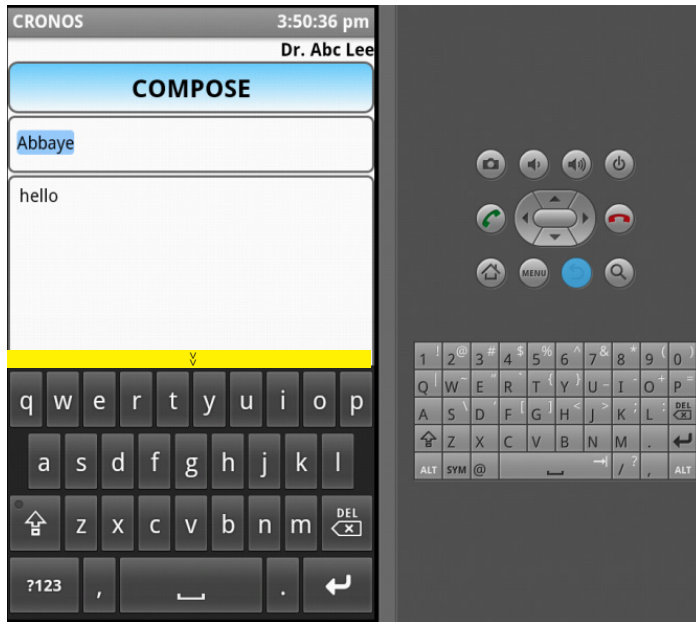
- Selecting “Add Orders” prompts a confirmation, then brings user to the beginning of Ordering.
- Patient name is reinforced: “for Patient Name.”

## Messaging



- It should be possible to forward individual messages and not the whole thread, for confidentiality and convenience. If every time someone forwards a message, they send the entire thread, then the inbox would soon become unwieldy and difficult to navigate.
- It should be possible to distinguish between read and unread messages.
  - » Could highlight unread messages or use a symbol
- The screenshot shown could be confusing, because the header reads “Inbox” while the content is a specific message. The header should change to the name of the message and could be made smaller.
- To return to the inbox, the user could press the “Cancel” button or the Inbox icon in the navigation bar. It is good that the Inbox icon is highlighted to show the user that he/she is in messaging, but the shadowing to make the button look depressed also suggests that it cannot be pushed again. Using only the glow around the button would be sufficient, especially if there is good contrast between the glow and icon colors.

## Messaging continued



- Once message is typed, it seems that the only way to get rid of the keyboard is to press send, is to press the hard back button. There should be a button on the keyboard such as “Done,” or a bar at the top of the keyboard that can be tapped to minimize the keyboard.