Take Your Pills Heuristic Evaluation

Sumit Gogia (no collaboration)

April 23, 2013

I've listed the issues by site, and I've ordered the catastrophic ones first, the major ones second, the minor ones third, the cosmetic ones fourth, and the good ones last.

1 Doctor Site

1. *Catastrophic:* **No way of knowing that patient page exists from main page**

   This is an issue of **system visibility**, as well as possibly **hierarchical organization**, and **help and documentation**. Upon login, the 'messages' page is displayed; there is no indication that you can check individual pages for the patients.

   This is a pretty big problem, since this seems like one of the main features of the interface - the doctor should be able to check the drug history of each patient and analyze the drugs they've been taking. Even though it can be reached through the search bar, this isn't obvious at all. In fact, I only found this by messing around with the search bar when trying to figure out what it was supposed to do. People that don't know how the interface works will find it unintuitive.

   My recommendation is that you revamp the organization of the site; make a tab on your navigation bar for a 'patients' page, which links to a page with a list of patients that are clickable and take you to individual patient pages; in addition, remove the 'add patient' tab from the navigation bar and put it as a button on the 'patients' page. I believe this organization is more understandable.

2. *Catastrophic:* **Drug edit/add save difficult to recognize**

   This is a **feedback** and **internal consistency** issue; when you 'save' an edit for a drug, or add a new one, the only aspect of the interface which changes is that an extra button gets appended to the list of drugs with the new drug.

   Unfortunately, this feedback is somewhat difficult to notice; only one small button on the screen changes - the form that's being edited remains, and the drug selection doesn't change to the new drug if added / edited (though I'd say the adding a button was not meant to happen, and what was intended was that the current drug info was just changed). As such, the user will likely have difficulty knowing that a change to the system has been made; the application is for information management, so I would consider this a catastophic issue.

My recommendation is that you have the information sections of each drug be uneditable by default, and have an edit button which allows you to edit the fields; upon edit submission, the fields revert to just text on a background (and so look uneditable) indicating the change to the system. For drug addition, do the same, but also have the switcher change to the new drug.

3. *Catastrophic:* **Drug edit save adds new drug**

This is a **feedback** and *external consistency* issue, and wasn't listed on your 'not available' features so I'm putting it in here. Basically, when editing a drug, if you click on the 'save' button, the system appears to *add* a new drug to the drug list, rather than change the current one.

This behavior, regardless of whether it is intended or not, is bound to be confusing for the user, as typically editing an object in an application does not create any new elements in the UI - it only changes them. Since this is a major part of the application, I label it a catastrophic issue.

My recommendation is that you change the edit behavior to change the information fields for the drug in the system and user interface, so that it accomodates natural perception better.

4. *Catastrophic:* **Patient edit save is difficult to recognize**

This is again an issue with **feedback**. It is the same issue as with the drug editing page, except now there is no feedback from the switcher to the side; refer to my comments there for a description of this problem, along with my recommendation for how to fix it.

Edit Patient Amy Fox

Patient Name   Amy Fox

Age   34

Patient's Email   amybxxx@gmail.com

Info   Type II diabetes, currently taking Drug A,B and C

Delete Patient   Clear Form   Save

5. *Major:* **UI elements are hard to distinguish on page**

This is related primarily to **visibility**. Because the background of the website is entirely white, all white or light grey UI elements (which comprise nearly all of them) are difficult to see, particularly text fields (white with a light grey border), and button boundaries (buttons are white or have white-grey gradients, light-grey borders). As a result, users, as I myself was, may be unable to determine exactly where elements are defined on a page, or even if they exist at all.

Since the user's primary use of this site is for keeping track of information, being unable to notice how some of it may be entered or tracked is fairly problematic. In addition, this issue occurs on every page of the site, with nearly all UI elements, even if once found the UI element should be fairly visible to the user; some of the affordances have this issue as well (e.g. the chat switcher, highlight is light grey on hover).

I would recommend that you just add more contrast between the boundaries of elements and the backgrounds they're on; changing light greys to darker ones would be useful, but I think even better might be adding some bright color to the boundaries instead, as you've done with some of the affordances (highlight of search bar border is blue on active).
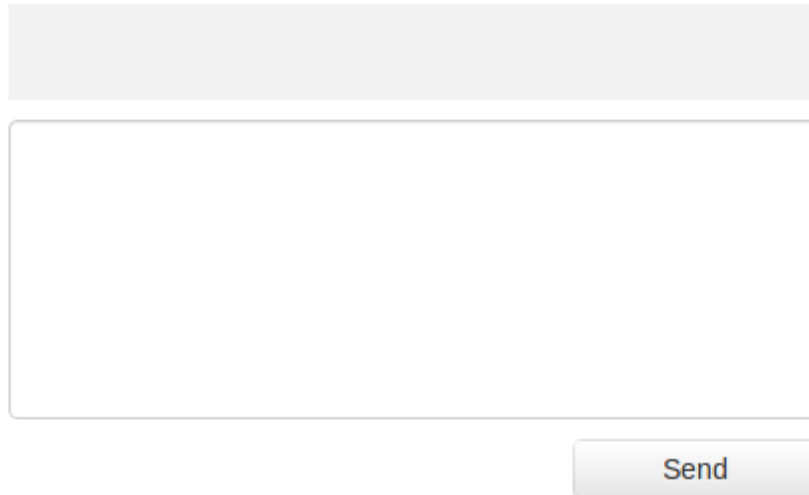
6. *Major:* **Form element submission can be difficult and time-consuming**

This is related primarily to **external consistency**, as well as **efficiency**. Form elements, by which I mean fields in which information can be entered and then 'submitted', likely to the backend for processing (e.g. the search bar, login fields) do not allow you to submit by using the enter button, a feature which seems almost universal in forms nowadays.

The user may be confused as to why their information is not being submitted if they try to use the enter button, and take some time to try and use the submit button, or even give up on the task entirely. At the very least, efficiency is always compromised, since it takes more time to access the 'submit' button via the mouse instead of the 'enter' key on the keyboard. The problem is persistent in regards to efficiency, and frequent in that it occurs throughout the site (login form, search bar, messaging, add patient form, add new drug), making it major.

The fix I would recommend is simple; just add the external consistency by allowing the 'enter' key to be used for submitting forms.
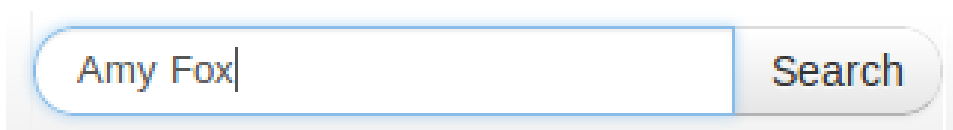
7. *Major:* **Can't view a portion of the drugs simultaneously**

This is mainly an issue of **efficiency**. On the patient pages, you have drug intake history displayed with a separate calendar for each drug (or so it seems; can't really tell since it's static), and each of these calendars displayable by selecting the appropriate element from the switcher on the left (or the 'all' option, which displays all drugs).

The point of a calendar is to compress information about multiple events which are ongoing simultaneously into a single graphic; the display here is slightly counterproductive to that idea. The doctor can see the information for all drugs together on a single page, or can select the tabs for each drug individually; however, they can't view

a portion of the drugs simultaneously. This problem is persistent, and it seems that the doctor will be using this often, so I would say this is a major problem.

My recommendation is that you allow the visible drugs on the calendar to be selectable through checkboxes, so that the doctor has the option of viewing multiple drugs simultaneously.

8. *Major:* **No way of getting back to the drug history once entered drug editing**

This is an issue of **error recovery** and **reversible actions**, as well as **efficiency**. On the drug editing page for a patient, there is no link, or button, or any other sort of UI element which can be used to get back to the drug history page.

This seems like a fairly common function for doctors to me; they might want to view history, edit drug, view history again, pretty often. Even if you can use the back button on the address bar, this is not a part of your interface specifically, and so can be somewhat confusing. The doctor must go through the search bar again, a long process. The problem persists through multiple uses of the site, and during one session as well, so it really does seem to be serious. Hence, I categorize it as major.

My recommendation is just to add a very visible button that takes you back to the drug history page.

9. *Major:* **No way of getting back to drug history page from patient edit page**

This is the same issue as with the drug editing page, and is an issue of **error recovery** as well as **efficiency**. Refer to my comments there for a description of this problem, along with my recommendation for how to fix it.

10. *Minor:* **No comfirmation of successful sign-up**

This problem is related to **external consistency**, and **feedback**. When using the 'create new account' feature, after submitting the form, the user is presented with the entire interface, and their registration is not confirmed explicitly.

Some sort of confirmation seems to be a standard for sites - even if the user is immediately presented with the full interface as it is here, there is at least some very visible text on it the first time indicating the person has successfully registered. Though it may not be necessary, as the interface indicates whether you are logged in or not with the 'account name' and 'logout' sections of the navigation bar, since it is standard, users may worry about whether their registration is persist, or be disconcerted, possibly being turned away from the website or attempting to find some other way of confirming their registration. This problem occurs once for every person who registers, and doesn't affect the user greatly, so I would consider it minor.

The fix I would recommend is to just add a modal dialog which pops up on top of the main page when a user first registers, or some welcome text is displayed.
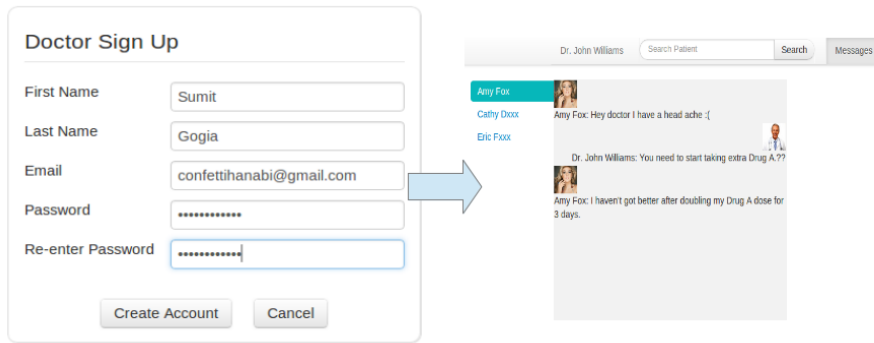
11. *Minor:* **UI Element indicating 'logged-in account' has superfluous affordances**

This is a problem with **simplicity**. along with **consistency**, both internal and external. When someone brings the mouse over the name of the logged-in person, it appears to depress like a button, and the mouse pointer affordance changes to that of a button as well. When the mouse pointer is over the text for the name, it changes to a text affordance icon. However, if this is a button, it doesn't do anything when pressed, and the UI element doesn't seem to be a text-element either.

These extra affordances make it unclear as to whether this UI element is meant to simply display information or not; they can thus be confusing to the user, who may spend unnecessary time attempting to understand the reason for these affordances. Since this should only really occur once for each user, I then consider it a minor issue.

The fix I would recommend is just to remove the affordances. However, since I can't tell if the affordances are actually meant to do something, in the case that they are, I would suggest that you do add that functionality, or indicate that it will be added.
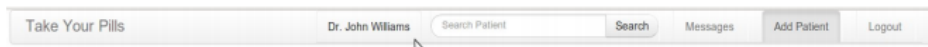
12. *Minor:* **'Current Drug' text on drug editing page may not refer to drug being edited**

This is a **consistency** and **simplicity** issue. When you go to the drug editing page, the default is adding a new drug, but the 'current drug' is displayed; it's unclear whether this drug is the drug that the history was being viewed for previously (since it doesn't change), or something else, or if it changes when you click on another drug to edit, or if it changes when you edit the name of the drug.

Altogether, it just seems like the current drug text could be any number of things which could be confused for not being consistent with other parts of the interface, and at least is superfluous since the current drug being edited is indicated by a selection on the switcher (which has affordances). This occurs frequently and persistently, but doesn't necessarily seem like it'll confuse people so much since the other affordances for the 'current drug' are aplenty, but it is still a small problem, so I'd classify it as minor.

My recommendation is that you just omit this UI element completely.

13. *Minor:* **'Missed drug history' summary box covers small part of calendar**

    This is a problem with **visibility**, and **user control**. When on the drug history page, the summary box covers about 25% of the right-most days' boxes.

    The problem pops up persistently. This could possibly hide information that would be valuable to the user, though they likely will still be able to read it. However, in the case they can't, the issues could be severe, so I'm labeling this problem as major.

   My recommendation would just be to move it to the right a little so it doesn't cover the calendar.
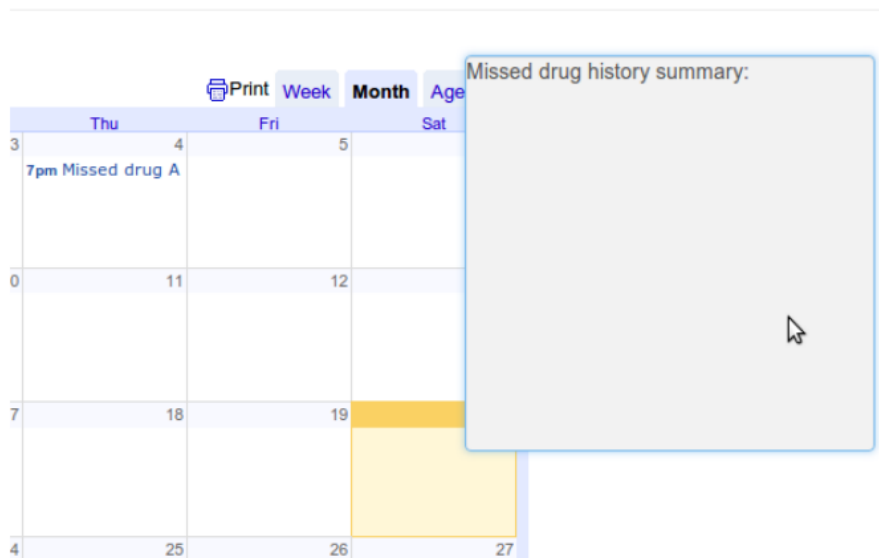
14. *Minor:* **Large text-fields display text in awkward positions and don't word wrap**

    This is an issue with **external consistency**, as well as **visibility**. The chat box on the home page and the 'info' box on the 'add patient' page add text starting from the middle of the text box, and don't word wrap.

    This problem could result in patients not being able to check exactly what they're typing due to the lack of word wrap, and also is discomforting since text-boxes typically

have text appended from the top-left. Since most messages are short and shouldn't typically require checking, and since the unusualness doesn't mark a large change, I call this a minor problem.

I'd recommend that you just add the functionality of wrapping and top-left text appendage.
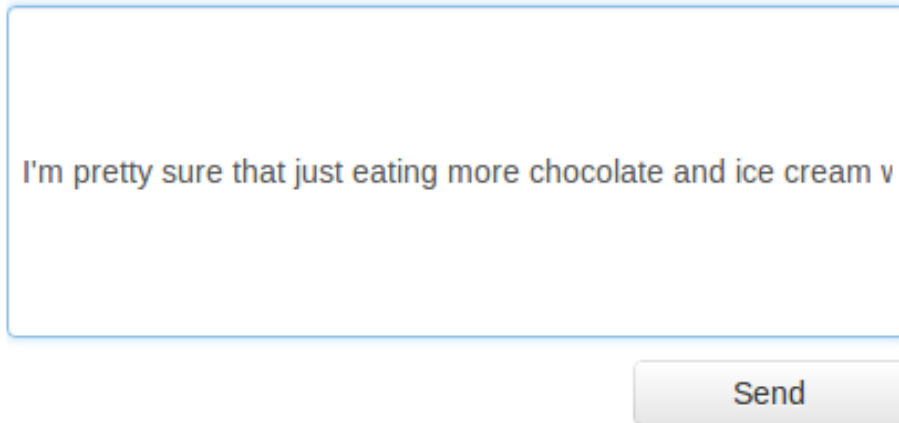
15. *Cosmetic:* **Account 'UI element' and logout button are separated by position**

    This is both an issue with **external consistency**, as well as **associativity**. The account name, and the logout button are separated by a search bar for looking up patients, a messages tab on the navigation bar, and an add patient tab on the navigation bar.

    This positional difference makes them seem like very disparate UI elements, when they are much more relatable than the other elements. This seems evidenced in turn by the fact that in most websites, account information is located very close to the logout button, often with them having their own standalone section. Users may be a little confused as to how related the two UI elements are; though this isn't really that much of a source of confusion, and it only should be once if so, since 'account information' and 'logout' can be viewed as separate pieces of information, it could be a very minor nuisance. Thus, I would label it a cosmetic issue.

    The fix I would recommend is to move the two sections closer; better yet, include a separate 'account info' section separate from the navigation bar which has a logout link or button.
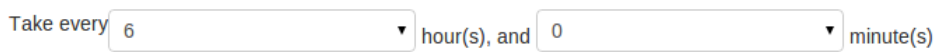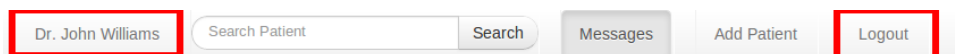

16. *Cosmetic:* **Dose frequency form element is not vertically aligned**

    This is mostly an **aesthetics** issue, but could also be considered a **consitency** issue to some degree. The information to fill out below the dose frequency field in the drug editing page (regulated by the dose frequency field) is not vertically aligned.

    The alignment is perceivable, and looks slightly unprofessional, possibly turning away a user from the site. However, it is hardly a serious issue to function, and can be easily ignored without any problem. For this reason, I am labeling the issue as cosmetic.

9

My recommendation is just that you vertically align the fields and their labels.

Take every [6 ▾] hour(s), and [0 ▾] minute(s)

17. *Cosmetic:* **Site name could aggravate users**

From a personal standpoint, this is an issue along the lines of **Aesthetics**. The name of the site is 'Take Your Pills'.

My issue with this is that it seems like it could make users feel like they have to be hovered over and watched; the phrase evokes memories of my mother saying 'take your pills!' like I didn't know any better, and might evoke a similar response from other users. I think it's a funny name, to be sure, but it might be a little unfriendly.

I'd recommend that you choose a 'friendlier' name, though judging this is a little difficult.

18. *Good:* **Bad patient searches are handled with an error message**

This is good for safety, as well as learnability - notably this is related to **error prevention** since upon seeing it the user will have an idea of whether they can input something or not.

19. *Good:* **Drug history page gives a good overview for the user**

The drug history page displays a calendar with the dates and time for the user to take their medications. This is excellent in that it's very **efficient**; the user can look at their history and get a wealth of information about what drugs they should have taken, and what they need to take. My only suggestion is that you might color code for drugs that have been missed/taken, or maybe some other useful features.

2 Patient Site

1. *Catastrophic:* **Difficult to discern what 'edit pills' allows you to edit**

This is an issue with **internal consistency**. When you enter the 'edit pills' section, there is nothing to do but add pills. You can't edit the pills that are being taken according to the main page.

People will probably be very confused when clicking 'edit pills' and not finding pills they've been taking to edit. It would seem like this page was not serving a purpose, or possibly doing something that the patients didn't know about or have visibile access to. This problem is persistent, so I would call it catastrophic.

My recommendation is that you fix this page to reflect the pills taken according to the home page, if that is what's intended.


Edit Your Pills
[+]
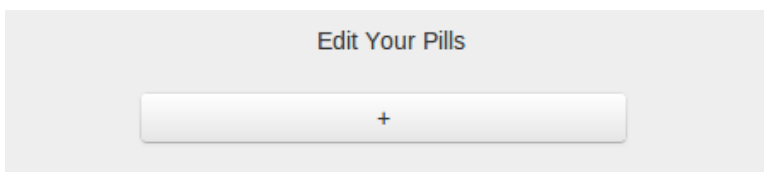
2. *Major:* **Clicking on info button for a drug doesn't produce any change in the interface**

   This is a problem with **simplicity** and **consistency**. On the home page, if you click on the info button for a drug listing, nothing seems to happen, making it an extra item on the page. People are also very used to button presses producing an effect.

   The home page is fairly crowded with these info buttons, as they occur for every drug listing on the page; it would thus seem that they play an important role. However, them persistently not producing any effect could be very confusing to users, as they'd wonder why they were there, especially since they'd be used to buttons producing an effect. As such, I'd classify this as a major problem.

   My recommendation would be to have the buttons removed if they do actually not produce any effect.
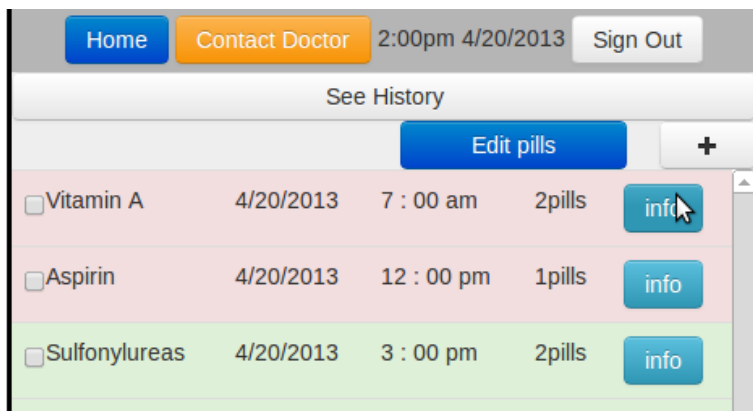
3. *Major:* **Difficult to discern what drug listing goes in history and on main page**

   This is mainly a problem with **system visibility** and **help and documentation**. On the home page, the user sees listings of drugs, and on the history screen, a listing of drugs that were taken or missed. What decides which is where is confusing. It could be that things are put into history as 'missed' if they have not been taken for a certain period of time, and that's what I'm assuming (otherwise this would be catastrophic), though the user can't see this easily.

   I'd say that this problem persists, is frequent since the user's primary action is in marking their drug intake, and is quite confusing. For these reasons, I'm marking it as a major problem.

   My recommendation would be to at least have some sort of help page to indicate the functionality of the system, or better yet add some text at the top which says 'today's drugs' or something along those lines.
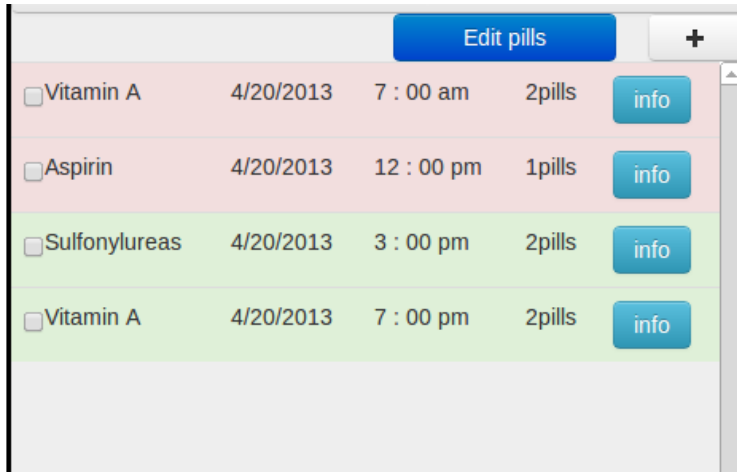
4. *Minor:* **User might think there is more information on home page than initially displayed**

   This is a minor issue which deals with **external consistency** and **simplicity**. On the home page, even if there are too few medications to take up the height or width of the page, scrollbars exist. On most sites and mobile applications, these scrollbars only appear when the content does not fit in the page, since otherwise they don't serve a purpose on the screen.

   I would say that this is probably only an issue for users the first time around or so, since if they try to use the scrollbars they'll notice they won't work and then determine that they change when the content doesn't fit the page; though, the fact that a horizontal scrollbar exists may be a little more disorienting since it doesn't seem that content ever extends past the horizontal width of the page. It's extra material in that sense (hence the simplicity issue). Hence, I'm labeling the issue as minor.

   My personal recommendation for fixing this issue would just be to remove the visibility of the scrollbars when the page content doesn't exceed the page dimensions; and to remove the horizontal scrollbar entirely.
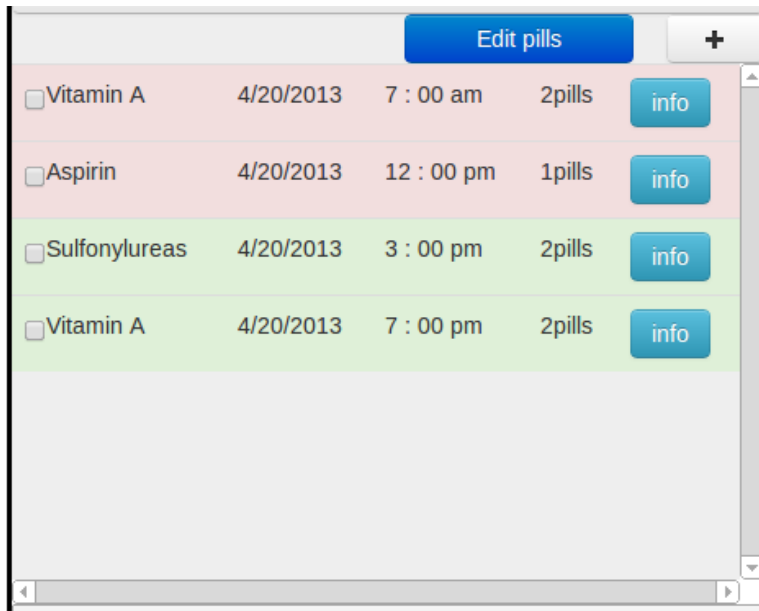
5. *Minor:* **'Edit pills' and '+' from home page have overlapping functions**

   This is an issue with **simplicity** and **consistency**. The '+' button from the home page takes you to an 'add pill' form; however, the edit pills page also takes you to the same thing. The 'add pill' form from the '+' button actually has a 'back to edit' option as well, which isn't consistent with the fact that the '+' button is on the home page.

   I don't think it would be too difficult for users to recognize the equivalence of the '+' button on the home page and the '+' from the edit page; however, it certainly could confuse some users for at least some amount of time. For this reason, I'm labeling it as a minor issue.

   My recommendation is that you take out the '+' button from the home page, since '+' fits well into the edit functionality anyways.

6. *Minor:* **No affordances for selecting doctor to contact**

   This is an issue with **affordances** and so **external consistency**. When on the 'contact doctor' page, there is no mouse affordance for selecting a doctor; that is, the mouse pointer remains the same when I mouseover and click on the doctor listing, and no colors or size of listings change either.

   The issue shouldn't trouble people multiple times since once clicking and getting to a message page, people will probably understand the functionality, but it will likely at least be disconcerting, and could also be a serious issue for people attempting to determine the functionality the first time. The only thing leading them on might be that there's not much to do except try clicking on the listing. For these reasons, I'd classify it as a minor issue.

   To fix this problem, I'd say that you could just add the mouse affordances for a button; change the pointer on hover and indicate by color change hover and pressing on a doctor listing.

7. *Minor:* **No autoscroll when new message is sent to doctor**

This is a problem with **external consistency** as well as **feedback**. When a new message is sent to the doctor, the page doesn't scroll to the bottom of the messaging as is common in most messaging applications; it leaves you at the location you were previously.

This issue is confusing since it is contrasting with the current application standard, and it's also an issue because it doesn't let the user know that a new message has been sent straightforwardly. They may be able to deduce it from the change in the scrollbar, but I don't think that's obvious at first glance. That being said, I still think users would figure it out quickly enough, so I'm labeling this as minor.

My recommended fix is just to add the autoscroll functionality.
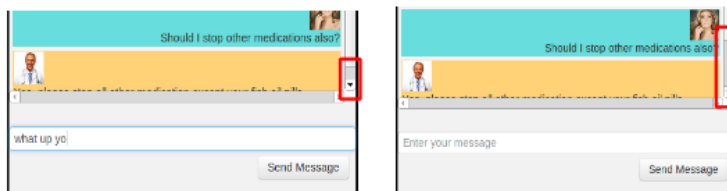
8. *Cosmetic:* **Border harshly contrasts rest of interface**

This is just a matter of **aesthetics**. The jet black border really stands out among the other elements of the UI, which are on the colorful or bright side.

Not that this is a significant issue for usability, but the border may be just a little jarring. However, because this doesn't affect function at all, and may not even be noticed as an issue for many people, I'm labeling this as a cosmetic issue.

I'd recommend that you just change it to a light gray, or take it out entirely since you have decent margins for most of your interactable elements already.

9. *Cosmetic:* **Title bar background contrasts sharply with rest of site**

Again, this is another matter of **aesthetics**. The blue that you've used for the background of the title bar doesn't harmonize with the rest of the site. It would feel okay if you were going for a monochromatic blue, but when you use both this rich blue and orange and then add this light turquoise it seems somewhat off; none of the standard color harmonies (complementary, monochromatic, ...) are satisfied.

This is also not a significant issue for usability, but it can again be a put-off to some users, so I'm calling it a cosmetic issue.
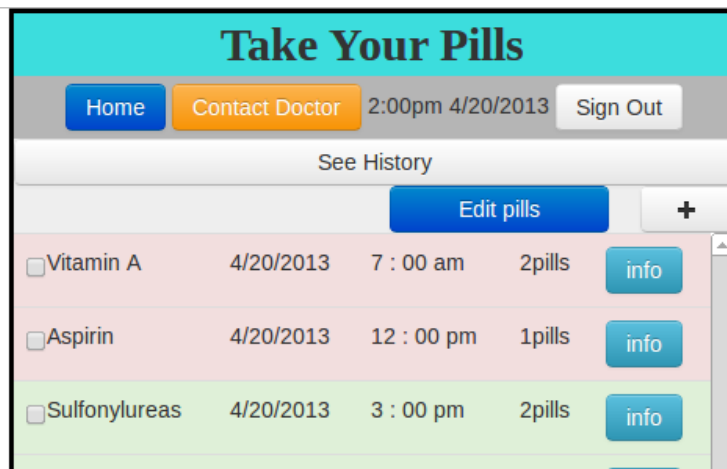
10. *Good:* **Home page gives large amount of information while having good layout**

This is related to both **aesthetics** and **user control**. The user is able to get a good grasp on their current pill-taking situation by seeing the information on the home page,

which is nicely organized into a table with suitable margins and space for viewing. The fonts are large enough too to be readable on a mobile device; these are good things!

11. *Good:* **Colors on the doctor chat page help for distinguishing chat members**

    This is related to **aesthetics** and **visibility**. Because of the contrasting colors (blue and orange) used for the chat with the doctor, it's easy to distinguish between the people chatting - a problem I had with the doctor interface.