

Heuristic Evaluation of HealthMap

1. Problem

HealthMap is an intuitive and easy health verifier mobile application that tests your motor skills and makes sure the user is in a safe position to drive.

2. Violations Found

1. **[H2-4 Consistency and Standards][Severity: 1][Found by: A]**
 - a. *The interface uses regular text for the cancel button on the disclaimer window, but bolds the OK text in the same window. Users may be confused as to why the text is different and it also distracts from the design visually. Use either regular font or bolded text for both buttons.*
2. **[H2-4 Consistency and Standards][Severity: 2][Found by: A]**
 - a. *The interface uses the String “Edit Contacts” on the home screen navigation bar, but when the user clicks the button and lands on the next screen, the title changes to “My Contacts”. This can be confusing to users as to whether they will be simply viewing their contacts or actually editing the contacts. Change the text on the button to “My Contacts” on the home screen to match the contacts screen and move the “Edit contact” option to be within the contacts screen.*
3. **[H2-3 User Control and Freedom][Severity: 4][Found by: A, B, C, D]**
 - a. *The green circle with white heart and plus button resembles a create new button too closely and can confuse the user into thinking it is a system function the user can select. This appears in the “Contacts” and “Test History” and “Settings” screen. Even though it is a logo, the icon imitates a user control option and makes the user believe they can click it on every screen it appears. Remove the plus sign from the icon to differentiate it more from clickable functions and move the button to a more inconspicuous location, or change the image to resolve this problem. We noticed that the logo on your website is different from the one in the prototype. We think the logo from the website is fine and does not violate this heuristic.*
 - b. *Furthermore, I read “Tap to Begin” as instructions to tap the center logo.*
4. **[H2-6 Recognition Rather than Recall][Severity: 2][Found by: A]**
 - a. *The test history screen displays the user’s percentage of previous tests passed by only labeling the bars with the name of the test. This forces the user to recall what the exact test entailed; for example, the user sees the caption “reflex” but must remember that this corresponds to the balloon popping test. Each test progress bar should help the user remember what test it describes. This can be remedied by including a one-line description of each test under the bar, or by including a small graphic/image to illustrate the test.*
5. **[H2-3 User Control and Freedom][Severity: 3][Found by: A, B, C, D]**
 - a. *The interface does not let you exit the evaluation once you enter the test. Users may have selected the “Begin Test” option by mistake which forces them to complete the entire test in order to return to the home screen. The interface should support an escape feature from the test. Add an end test button or exit button to each screen within the test.*
 - b. *Could also be H2-1. Visibility of system status: With no indication that the screens would move automatically, I interpreted the first “Vision Test” title card as a button and reached out to tap it.*
6. **[H2-3 User Control and Freedom][Severity: 2][Found by: B, D]**
 - a. *Users cannot replay the tests should they miss the screen in the set timer limit - for instance, users might be distracted by an incoming phone call, or a crying child, and miss the test,*

despite being fit to drive. The interface should support a replay or repeat feature at each test (e.g. a 'Replay' button)

- b. Could also be H2-5. Error prevention*
7. **[H2-2 Match Between System and Real World][Severity: 2][Found by: A]**
 - a. During the reflex test, popping a balloon places a large, black X over the balloon to inform the user that the balloon was hit. Normally, a user associates an X with an incorrect guess or a mistake. This can be confusing because the user is actually correct in hitting the balloon once s/he sees the black X. It also distracts from the interface by adding extra visuals. Instead of a black X, change the icon to flash a correct symbol like a check or remove the icon all together and simply have a popping animation.*
8. **[H2-1 Visibility of System Status][Severity: 3][Found by: A, B, D]**
 - a. The screen progression for each task in the test is set to a timer. This timer moves really quickly and if the user is not a fast reader, it does not accomplish the desired function of informing the user of his or her current status in the test. It would be beneficial to slow down the timer or use a button on the info screens instead that allows the user to begin that specific test.*
 - b. Could also be H2-5. Error prevention*
9. **[H2-7: Flexibility & Efficiency of Use][Severity: 2][Found by: C]**
 - a. On the other hand, if the user is experienced, they may find that the transition between tests that involves reading instructions is too long. Although it is only a matter of seconds, this gives less flexibility to users since they have to go through a waiting period each time they use the app even if they already know what to do. There should be an option for experienced user to skip the instructions.transition between tests.*
 - b. For instance, the "Tick" icon at the end of each test could be possible accelerators - one could click on them to go to the next section.*
10. **[H2-4 Consistency and Standards][Severity: 1][Found by: A]**
 - a. On the settings screen, moving the sliders over to the right exposes the green coloring beneath the slider. This green is a different hue than the standard shade used throughout the application. While this does not hinder functionality, it distracts from the visual appeal of the interface because it is not consistent. Change the background color of the slider to match the same green used for the interface's color scheme.*
11. **[H2-4 Consistency and Standards][Severity: 1][Found by: A]**
 - a. The instructions for the hearing test portion of the safety check are displayed using gray text on the overall white background. However, the instructions on every other stage of the interface use white text over a gray textbox. This inconsistency is confusing to the user because gray boxes are already associated with help dialogue. Switch the instruction text on the hearing test to match the other screens by coloring it white and putting it in a gray box*
12. **[H2-4 Consistency and Standards][Severity: 1][Found by: D]**
 - a. In the hearing test, the gray box with white text is misleading as it almost seems like a button - the user may be tempted to click only on the gray box instead of on the entire screen. One way could be to add arrows around the box to show that you can tap anywhere on the screen.*
13. **[H2-5. Error prevention][Severity: 1][Found by: B]**
 - a. The instructions of the hearing test should include turning the volume up.*
14. **[H2-10 Help and Documentation][Severity: 1][Found by: D]**
 - a. In the Hearing test, there was the help line of "Play frequency 1, 2, 3...". It is vague and ambiguous and evaluator did not understand that referred to. For instance, is it the duration of the frequency? the level of difficulty? the number of tests? Write a more descriptive explanation of this, or have a more visual explanation with icons instead.*
15. **[H2-4 Consistency and Standards][Severity: 1][Found by: A]**
 - a. The "Call for Help" button on the home screen as well as the "Dial" button on task 3 use one shade of red while the buttons on the vision test turn a different, flatter red. In following your*

style guide and color scheme, it is better to match the flat green used with the flat red throughout. This color is more appealing to the eye and keeps the overall design consistent. Change the button on the home screen and the phone screen to the new red color.

16. **[H2-4. Consistency and standards][Severity: 2][Found by: B]**
 - a. It's unclear whether "Call for Help" is a button or a banner--and whether it is a command telling me to call for help right now or an option to call for help.
17. **[H2-8 Aesthetic and Minimalist Design][Severity: 2][Found by: A]**
 - a. *Sharing a location with the emergency contact pulls up a Google Maps window. Currently, the interface just displays the normal Google Maps API screen which has extra information like reviews, time and distance to location, and the center location button. Based on the prototype, it is my understanding that this screen is shown to the user of the application, otherwise known as the person in trouble. There is no need to include this extra information on the screen as they will not be the one travelling so the directions are extraneous. Remove all this from the screen and simply show the user where they currently are on the map as well as a dialogue box that states the location was shared.*
18. **[H2-1: Visibility of Status][Severity: 2][Found by: C]**
 - a. *Instead, the Location Shared screen should also track the location of the user's friend who is on their way. This way the user can see exactly where they are and estimate how long it will take them to get there, instead of just waiting and wondering. Have an additional marker on the map that denotes the friend's location.*
19. **[H2-10] Help and documentation [Severity: 1][Found by: B, D]**
 - a. *In the "Settings" page, for "Share location", it is unclear who one would share the location with. It will be clearer if there is a short description below the Share location button to state who it will be shared with.*
20. **[H2-7 Flexibility and Efficiency of Use][Severity: 1][Found by: A, C]**
 - a. *In terms of your task 2, "I want to know how to be a safer driver", the process to reach the suggestions screen is rather lengthy and involves going through multiple screens as part of the test in order to reach the warning screen. Users that are looking to acquire new knowledge about how to be a safer driver might find this process tedious if all they are looking for is tips and suggestions. Consider streamlining this process so that this task can either be the result of a poor task or be accessible from the home screen for different use cases. Create a new tips section at the start of the interface to record all of the user's old safety tips from previous tests and to provide new rotating tips from the application.*
21. **[H2-10 Help and Documentation][Severity: 1][Found by: A]**
 - a. *While the actual instructions are clear on each section of task 1, "I want to know if I am fit enough to drive", a user might feel as if they are missing a global help option. The interface is intuitive and can be picked up, however the application should accommodate for all user types especially those that have a hard time with technology. For this user type, a screen with a tutorial or explanation of the app would be helpful. Add a new button and screen off the home screen to a help page like most applications typically do with a question mark icon.*
22. **[H2-6 Recognition Rather than Recall][Severity: 3][Found by: A, B]**
 - a. *When a user is deemed dangerous to drive, the application automatically dials an emergency contact. Upon reaching the "Stop" screen in task 3, "I want to get help when I need help", the application makes the decision of who to call without asking the user for his or her input. This forces the user to remember who they loaded as the emergency contact and assumes they will be fine with calling this person. This is also problematic if the user has more than one emergency contact as is the case in this prototype. This problem can be solved by changing the stop screen to provide the user with a short list of the people they have saved as contacts and having him or her tap a name to call. This way the user does not need to recall the names but rather recognizes the people available to them and can select one to dial from the app. Users*

will enjoy this because some emergency contacts are better points of contacts depending on the situation.

23. [H2-1 Visibility of System Status][Severity: 2][Found by: A, B, D]

- a. *While your interface does a good job of making the user aware of what stage in the test they currently completed, there is no indication of how much progress is made within each test. For example, during the reflex test, the user does not know how many balloons were already popped and how many there are left to advance through. Adding similar progress bars within each individual task of the test will help to fix this problem and guide the user through the application.*
- b. *Furthermore, do the check marks after each test mean passing or just completion?*

24. [H2-2 Match Between System and Real World][Severity: 1][Found by: A]

- a. *The icon shown on the screen in task 2 when the user has weak eyesight does not match what a user would normally associated with weak eyesight. The system currently displays a crossed out eye which seems like it would stand for no eyesight or blindness in the real world. Switch this icon to something different such as a blurry picture to better represent “weak eyesight” with the UI.*

25. [H2-7: Flexibility & Efficiency of Use][Severity: 2][Found by: C]

- a. *When the user accesses the Contacts menu from the home screen, they tap on the bottom part of the screen. When they reach the Contacts menu, however, all of their actions take place near the top or center part of the screen (i.e. search, add contact, edit/delete contact), which means they are a little bit less efficient in their task flow. Furthermore, with the logo that resembles a plus sign at the bottom the user might even think that clicking on that adds a new contact. This is true for the Test History and Settings pages as well. The efficiency of use could be improved by minimizing the distance necessary to “recover” from transitioning from a previous screen and proceeding with the task. The submenu on the home screen could be moved further up to the center or top, perhaps replacing the current Call for Help button.*

26. [H2-7: Flexibility & Efficiency of Use][Severity: 2][Found by: B, C]

- a. *The disclaimer message displayed before the user starts the test should have an option to be turned off in future tests. An experienced user would already be familiar with the disclaimer and would not need to read it again. Having to confirm it every time would make their task flow less efficient. Either allow the user to turn off the disclaimer, or automatically set it to turn off after the user has read it X number of times.*

27. [H2-4. Consistency and standards][Severity: 2][Found by: B]

- a. *Throughout the interface, the same color is used for button and non-buttons, leading to confusion. Have different colors for buttons and non-buttons.*

3. Summary of Violations

Category	# Viol. (sev 0)	# Viol. (sev 1)	# Viol. (sev 2)	# Viol. (sev 3)	# Viol. (sev 4)	# Viol. (total)
[H2-1: Visibility of Status]	0	0	2	1	0	3
[H2-2: Match Sys & World]	0	1	1	0	0	2
[H2-3: User Control]	0	0	1	1	1	3
[H2-4: Consistency]	0	5	3	0	0	8
[H2-5: Error Prevention]	0	1	0	0	0	1
[H2-6: Recognition not Recall]	0	0	1	1	0	2
[H2-7: Efficiency of Use]	0	1	3	0	0	4
[H2-8: Minimalist Design]	0	0	1	0	0	1
[H2-9: Help Users with Errors]	0	0	0	0	0	0
[H2-10: Documentation]	0	3	0	0	0	3

Total Violations by Severity	0	11	12	3	1	27
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4. Evaluation Statistics

Severity / Evaluator	Evaluator A	Evaluator B	Evaluator C	Evaluator D
sev. 0	100%	100%	100%	100%
sev. 1	63%	18%	9%	27%
sev. 2	42%	42%	33%	16%
sev. 3	100%	100%	33%	67%
sev. 4	100%	100%	100%	100%
total (sev. 3 & 4)	100%	100%	50%	75%
total (all severity levels)	59%	41%	26%	26%

5. Summary Recommendations

- Overall, we think the user interface is a great design. We found the testing experience quite intuitive and simple for the most part.
- One important factor to address is the ambiguous logo (which you could simply swap for the new one on your website).
- It would be interesting to consider adding some functionality after the Location Shared screen. For example, you could allow users to minimize the map part and send a message to their friend, or display a warning message or lights if they are really inebriated and should not drive.
- Throughout the interface, the same color is used for button and non-buttons, leading to confusion. Have different colors for buttons and non-buttons.
- The tests should not proceed automatically so that the user has time to read the instructions and so they can choose when to proceed in order to not be interrupted. Furthermore if the user is interrupted during a test, there's no way to exit or replay the tests overall.
- Furthermore, experienced users should have the ability to 'accelerate' through each task instead of waiting at certain instruction screens. Having a button with the function of 'Click to proceed' on instruction pages will create the flexibility for both experienced and new users.
- Have clearer instructions in the "Settings" and "History" page - these have some short descriptions at the moment, but it will be clearer with a longer, expandable description so first-time users know what each option/graph refers to.
- Give the application more "personality" in terms of the appeal in its aesthetics so that it comes across as a health application and not so much as a game-like application.

Severity Ratings

- 0 - don't agree that this is a usability problem
- 1 - cosmetic problem
- 2 - minor usability problem
- 3 - major usability problem; important to fix
- 4 - usability catastrophe; imperative to fix

Heuristics

[H2-1: Visibility of System Status]

- keep users informed about what is going on

[H2-2: Match Between System & Real World]

Instructor: James Landay

- speak the users' language
- follow real world conventions

[H2-3: User Control & Freedom]

- "exits" for mistaken choices, undo, redo
- don't force down fixed paths

[H2-4: Consistency & Standards]

[H2-5: Error Prevention]

[H2-6: Recognition Rather Than Recall]

- make objects, actions, options, & directions visible or easily retrievable

[H2-7: Flexibility & Efficiency of Use]

- accelerators for experts (e.g., gestures, kb shortcuts)
- allow users to tailor frequent actions (e.g., macros)

[H2-8: Aesthetic & Minimalist Design]

- no irrelevant information in dialogues

[H2-9: Help Users Recognize, Diagnose, & Recover from Errors]

- error messages in plain language
- precisely indicate the problem
- constructively suggest a solution

[H2-10: Help & Documentation]

- easy to search
- focused on the user's task
- list concrete steps to carry out
- not too large