

My-Thy Connect

A Smartphone App for Thyroid Cancer Patients

by Jennifer Lycke



Product Concept

My concept is a smartphone app, available for iPhone and Android, created specifically for Thyroid Cancer patients to help them navigate various unique needs of the long-term thyroid cancer patient. When I search for apps in the Apple app store, I do not see a single app intended for thyroid cancer patients. There is an app for those with the more common hypothyroidism, an app for endocrinologists dealing with how to treat thyroid patients, and general cancer information and patient apps, much of which does not apply to those with thyroid cancer. However, thyroid cancer, being a less common cancer than others, tends to get neglected as far as patient information, common understanding, and resources to help patients in all stages of their treatment and beyond. There are many possible lifelong complications related to thyroid cancer, and having access to resources for patients for years after their diagnosis can help them feel more connected, less isolated, and better informed.



Business Objectives

- The primary objectives of this app are not financial, but to gain users and be helpful to users, acquiring primarily positive feedback
- To create a functioning app that is continually downloaded by users
- As the designer, developer, and “seller” of this app, my personal objective would be to develop this app on my own in order to learn app design, development, and experience a project in its entirety from front to end. This would be a learning experience, as well as a portfolio piece.

Business Needs

- An important Key Performance Indicator (KPI) for this app would be positive ratings in the app stores in the first year
- A second KPI would be positive feedback in the reviews in the app stores in the first year
- As I would inform thyroid cancer patients in online support group forums, and the local support group about this app, both written and verbal feedback would be additional KPIs. Written feedback would be recorded and verbal feedback would be notated, to assess success of the app and use suggestions for future iterations
- Regular downloads of the app by new users
- Success would be defined as having a greater quantity of positive reviews (including app store reviews and support group patient reviews) than negative reviews in my first iteration of the app (during the first year), as well as a minimum of a mean 3-star (out of 5) rating in the app stores (Apple and Android).



Vision Statement

Vision: The vision of **My-Thy Connect** is to help thyroid cancer patients in various stages of diagnosis and treatment to: connect with other patients via established forums, have access to reputable resources, and get optimal care. My-Thy Connect wants to help patients take the best possible care of themselves, help overcome diagnosis-related sadness, isolation, loneliness, misunderstanding, and confusion.

Hindrance: A hindrance to this vision could be building trust with users and motivating patients to regularly use a phone app as part of their healthcare plan.



Specific goals of the app are to:

- Provide links and helpful resources to thyroid cancer patients in all stages of treatment and life, including links to Thyroid Cancer Survivors' Association website and their corresponding YouTube Channel
- Link to various online support groups
- Add a pill reminder for medicine, vitamins, and supplements
- Add prescription reminders for patients to refill and pick up prescriptions
- Add appointment reminders for various medical appointments
- Provide information, such as grocery items and recipes, for the Low Iodine Diet (LID)
- Provide an opportunity to add a LID shopping list
- Connect to the latest relevant medical research in PubMed

User Needs

- To learn about resources, such as Thyroid Cancer Survivors' Association and American Cancer Society
- To learn what can or cannot be eaten on the Low Iodine Diet (a very strict medically required diet that is part of treatment for many patients). Patients are very nervous about whether they will be able to manage on this strict without starving, and are also fearful they will mess it up
- To make a shopping list when it's time to shop for the Low Iodine Diet
- To stay up-to-date on the latest relevant research
- To keep track of daily and weekly medicines, including daily Synthroid, Tirosint, or Levothyroxine, as well as calcium, vitamin D, and other necessary vitamins and supplements. Some pills need to be taken at the same time every day and some supplements must be taken at least 4 hours from taking the Synthroid (or alternative). Many patients have a difficult time remembering and keeping track of this every day. Some pills are necessary for the rest of patients' lives, so this may need to be tracked for years and decades.
- To track blood test results, including Tg, TgAB, T4, T3, Free T4, and Free T3 over time. Testing takes place for the rest of patients' lives, so this may need to be tracked for years and decades.
- To keep track of appointments, particularly during times of active treatment
- New patients, and even some existing patients, need to learn the terminology and acronyms involved with thyroid cancer, such as Thyroglobulin (Tg), Thyroglobulin Antibodies (TgAb), Radioiodine (RAI), etc. so that they can understand their medical reports and their lifelong care.



User Research Insights

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- Volunteers are in various stages of diagnosis and treatment.
- All three interviewees have smartphones and would use their smartphone to access support for their disease. Two of the three already access online support group(s) through their smartphones.
- Some interviewees have trouble consistently remembering to take daily medications/supplements and timing them correctly. Two out of three would use a smartphone tracker for taking their pills.
- Two out of the three do not understand the some of the terminology for thyroid cancer.

User Research Insights (continued)

The most difficult aspects of dealing with thyroid cancer are:

- Feeling isolated or alone
- Lack of consistent standards from doctors
- Not knowing what the treatment is going to be like
- Family and friends not understanding what I'm going through

Aspects of dealing with thyroid cancer that users most wish they could improve:

- Going through isolation for Radioiodine treatment
- High costs of treatment
- Dealing with insurance hassles

Based on this information, I conclude that this app would be a **viable product**. My target users have needs that could be helped by **My-Thy Connect**.

I think that this app could improve some of the difficulties these patients have by providing a one-stop shop for online resources, communities, and assistance with tracking of pills, prescriptions, appointments, and labwork measurements.

User Personas - Meet Our Users

Primary Persona

Name: Mary



PSYCHOGRAPHICS

Attitudes: A little depressed about health and weight issues; feels her husband doesn't understand.

Values: Family & community oriented; values her children and neighbors; has faith in God that He will watch over her

Fears: Scared about the future with a thyroid cancer diagnosis. Fearful of treatment and the repercussions of having surgery and radiation. Scared that she will not meet her future grandchildren because she won't survive that long.

Frustrations: Frustrated about her husband not being sympathetic enough about what she's going through and the weight gain that she has had despite trying to diet. Frustrated by insurance hassles that she has had to deal with so far and for the expensive insurance premiums and co-pays. Has a hard time remembering all of the new pills and vitamins she is supposed to take.

DEMOGRAPHICS

Age: 55 **Gender:** Female **Ethnicity:** Caucasian **Religion:** Christian

Location: lower-middle class home in Kansas **Occupation:** Homemaker, mother of 2

Education: Associate's Degree in Business **Marital Status:** Married, "empty nester"

Income: \$45,000 household income from her husband **Interests:** Cooking, scrapbooking, crafts

Health: Newly diagnosed with thyroid cancer. Weight issues.

Computing/Web Experience: mostly uses Microsoft Word, the Internet, and email. Has a desktop computer at home and a smartphone.

Personal web behavior patterns: uses computer mostly for craft ideas, shopping & social media (Pinterest & Facebook). Since her diagnosis, she now "Googles" about thyroid cancer and doctors in her area. She has joined a Facebook support group for thyroid cancer patients and reads posts from this group daily. She has posted 2 questions herself and has received some helpful responses.

NEEDS/GOALS

Needs: Needs to connect with others who understand. Needs to have access to outside resources regarding treatments, symptoms, nutrition, and financial advice for cancer patients

Goals: To connect with others going through the same diagnosis. To lose weight and improve her diet. To deal with financial issues involving medical treatment and bills. To remember to take her various pills at the correct times of day.

How she will use the app: to access online support groups so she can vent with other patients; to access resources that may help her deal with insurance, to view items she can eat on the Low Iodine Diet, and to start daily pill reminders for her levothyroxine, calcium, and vitamin D

Primary Persona

Name: Maria



PSYCHOGRAPHICS

Attitudes: She resents that she has to work 2 jobs while dealing with these health issues and raising her son. It's hard for her to find the time and energy to get everything done, especially dealing with cancer.

Values: She values raising her son and seeing him graduate college someday. He would be the first in her family. She values hard work. Ever since being diagnosed, she doesn't take her health for granted, and she values being cancer-free and healthy.

Fears: She is worried about recurrence and if she needs to get checked out by her doctor sooner than expected. She fears not seeing her son graduate college, because she won't live that long. She also fears running into financial hardship due to the ongoing chronic nature of the disease.

Frustrations: She has had some unusual symptoms lately and she wants to know if this is normal and if others have gone through the same thing. She feels she doesn't have the time or energy to exercise to lose weight and doesn't have the extra income to afford nutritious food. It's difficult for her to learn what all of the medical terms mean.

DEMOGRAPHICS

Age: 41 **Gender:** Female **Ethnicity:** Latina **Location:** urban Philadelphia

Occupation: Full-time cook and part-time sales associate at a small shop

Education: High School **Income:** \$50,000 income

Interests: taking her son to baseball games, she has a small patio garden

Religion: Catholic **Marital Status:** Single, has a 6 year old son

Health: Diagnosed with thyroid cancer 5 years ago. Weight issues.

Computing/Web Experience: Uses the Internet and email on her smartphone. No professional experience using computers.

Personal web behavior patterns: Uses email to keep track with some family that are still in Venezuela and texts her family and friends often. She also keeps track with them via Facebook. A coworker, who also had thyroid cancer a few years ago, told Maria about a support group for thyroid cancer patients on Facebook. She joined and reads posts from this group occasionally, when she's on a work break or at home with her son. She is interested in connecting with others online.

NEEDS/GOALS

Needs: Needs to be reminded to take her pills, supplements & vitamins. Wants to connect with other women with similar health issues

Goals: Lose weight, feel more energetic to take care of her son and work, remain cancer-free, have someone she can talk to about symptoms, and to just vent with people who can relate

How she will use the app: to learn about other online support groups and to learn what some of the medical terminology that she keeps reading about in the posts actually means. She will use the pill reminders. She will access resources which can show her how to eat with this condition, so that she can lose weight. She would also like to access patient financial resources.

Secondary Persona

Name: Tom



PSYCHOGRAPHICS

Attitudes: a bit bitter about being diagnosed...“Why me?”, however he keeps himself busy with work, his hobbies, and his family. He has become increasingly “obsessed” with studying cancer research.

Values: learning and self-education are important to him; researching and understanding statistics help him get by. He values speaking up for himself at the doctor’s office. Spending time with his family is important to him.

Fears: living a life with constant surgeries and treatments. Even worse, he fears not living past a few years from now and not seeing his granddaughter graduate high school. He also worries about his wife being alone.

Frustrations: frustrated about the chronic state of his disease. Wishes he could just be cured and not need to constantly worry about treatment and his future. Wishes doctors knew more about how to cure him. If he does require harsh treatment, he worries about the severe side effects, including having to go on disability, and the burden this will put on his wife as caretaker

DEMOGRAPHICS

Age: 60 **Gender:** Male **Ethnicity:** Caucasian **Location:** Newport News, Virginia

Occupation: Retired Navy, mid-level manager at Canon **Education:** Bachelor’s Degree

Income: \$80,000 income, including retirement pay from Navy

Interests: Photography, cars, watching sports with his sons, seeing his granddaughter

Religion: Agnostic **Marital Status:** Married, 2 grown sons and young granddaughter

Health: Diagnosed 12 years ago and is a chronic case where he can’t reach “No Evidence of Disease” status. However, his doctors monitor his condition every 3 months. If tumor markers progress, they may consider trying one of the new drugs recently developed, despite the potential severe side effects.

Computing/Web Experience: Fluent in Microsoft Office and Project at work. Uses the Internet, email, web browser, and a few apps on his smartphone.

Personal web behavior patterns: He uses Facebook to keep track of his 2 grown sons and young granddaughter. Tom has been doing online medical research and likes to keep up with the newest studies regarding new thyroid cancer treatments.

NEEDS/GOALS

Needs: Needs to understand, research, and stay up-to-date. Wants to understand at least as much as his doctors do, as far as his specific condition

Goals: To keep current on studies and clinical trials; To go into remission; To educate himself on his condition

How he will use the app: To keep track of his lab numbers every 3 months (especially TSH, Tg, and TgAb), as well as to stay updated on the latest relevant medical journals and studies.

User Stories



- As a **Mary**, I want to be reminded to take my pills, so that I can feel my best and not worry about forgetting my medication. I don't want to take my calcium at the wrong time and forget to take my levothyroxine altogether. I can do this by setting the pill reminders on the app.
- As a **Mary**, I want to be able to vent to people who understand, so that I don't feel so isolated and alone. This will help get some weight off my chest. I can do this by joining an online support group through the app.
- As a **Mary**, I want to learn about typical symptoms of radiation, so that I can know what to expect and be less scared about the treatment and the isolation required for treatment. I need to know how to prepare for my week of isolation. I can do this by accessing the Thyca.org website or asking people in my online support group through the app.



- As a **Maria**, I want to be reminded to take all my pills and supplements, so that I can rest at ease. My busy schedule might cause me to forget, especially if my son gets sick and needs to stay home from school. I can do this by setting the pill reminders on the app.
- As a **Maria**, I want to find resources, so that I can get some financial help for cancer patients. I can do this by accessing financial resources linked to from the app.
- As a **Maria**, I want to learn more about my condition and the terminology involved, so that I can understand my doctors better and have more productive and helpful conversations with them. Sometimes I don't understand everything that they tell me. I can do this by going to the informational resources linked to from the app.



- As a **Tom**, I want to learn about the latest thyroid cancer treatments, so that I can remain hopeful that there will always be more treatments I can try and mention them to my doctors. I can do this by accessing the latest PubMed studies on thyroid cancer, linked to from the app.
- As a **Tom**, I want to track my tumor markers (Tg and TgAb) and other lab numbers (TSH), so that I can monitor any progress and see if we need to change treatment course. I want to be as informed as my doctors and want to speak up for myself. I can do this by tracking my Tg, TgAb, and TSH on the lab tracker in the app.
- As a **Tom**, I want to learn as much as I can about my disease, so that I can stay as healthy as possible and know that I'm getting the best possible treatment. I can do this by accessing the Thyca.org website, linked to from the app.

Brand Persona: Tone and Personality

The tone of **My-Thy Connect** is caring, knowledgeable, approachable, and direct. There is a respectful balance between friendly and unfriendly, formal and informal. The tone and personality are slightly feminine and maternal, as over 75% of thyroid cancer patients are women*. However, the tone will not be overly flowery or “girly”, so as not to alienate the male minority of users. The tone is serious, particularly when something is not working. My-Thy Connect does not take users’ health lightly, but it does not take a “doom and gloom” approach either.

Brand Traits

Matronly, *but not old or obsolete*

Comforting, *but not naïve about suffering*

Confident, *but not boastful*

Wise, *but not condescending*

Sympathetic, *but not emotional*

Beautiful, *but not without scars*

Smart, *but not intimidating*

Respectful, *but not overly formal*

Caring, *but not weak*

Serious, *but not “doom and gloom”*

*Statistics provided by Thyroid Cancer Survivors’ Association (<http://www.thyca.org>)

Brand Persona: Voice

The voice of my brand, **My-Thy Connect**, is knowledgeable and wise. It is also familiar and friendly. It strikes a balance between formal and informal. It is like talking with your family physician that you have been seeing your whole life, has watched you grow up and knows you well. The voice is serious and direct when it needs to be, particularly if something is not going well, however it has your best interests at heart and is a friendly knowledgeable advisor that is on your side. It is like a doctor that lives in your pocket and goes where you go. The voice is not intimidating or condescending, but stern if it needs to be. The subject matter is of utmost importance- your mental, emotional, and physical health, and **My-Thy Connect** cares about you being the healthiest you can possibly be.



Brand Persona: Visual Lexicon

Content and labels will be in camel case with capitalizations and acronyms as appropriate. All acronyms will be spelled out, so that users can understand and not be confused or overwhelmed. Medical terminology will be defined. A certain level of formality should be maintained because we are dealing with the important topic of medicine and health, but not so formal that it is unapproachable or intimidating. Instructions will be clear and direct. My brand has an optimistic and pleasant demeanor. It believes that you can become well.

Where appropriate, my brand will ask you first for your permission. It respects your privacy and your rights. It will be secure and will not share or post anything to social media without your consent. Messages will be polite where appropriate, without becoming overly formal. If My-Thy Connect instructs you to do something, it will use the word "Please". Message will also be personal, using your name, as well as your doctors' names for specific appointments.

Copy Examples:

In App Greeting- "Good morning, Maria! Please select a menu item to continue."

Reminder text- "Maria, you have an appointment tomorrow, June 15, at 9am with Dr. Jones at the Philadelphia Medical Center. Please bring your co-pay and necessary paperwork, and have any questions ready for Dr. Jones."

Success Feedback- "You have successfully set up a reminder for your Synthroid."

Error Feedback- "Your item has NOT been entered. Please try again."

Brand Persona: Visual Lexicon (continued)

Colors: The official thyroid cancer colors are teal, purple, and pink. For consistency and familiarity (these colors are familiar to most thyroid cancer patients), these colors will be used in the logo and branding. Many patients associate these colors with thyroid cancer, and we want to remain consistent with that.

The background of the app will be solid white however, to imply simplicity, modernity, and the cleanliness of a medical facility. To further show this idea, the design will be very clean. The teal, purple, and pink will be only used sparingly- in the logo, the font for “**My-Thy Connect**”, and subtle accents throughout the app, such as bullet points.

Typography: Fonts will be a clean crisp black sans-serif. Various sizes will be used to indicate hierarchy and the importance of items. Important keywords and terminology may be bolded to indicate their significance.

General Style Notes: The logo will be a teal, purple, and pink butterfly with a cancer ribbon as the body of the butterfly, which is a common symbol for thyroid cancer as the thyroid is shaped like a butterfly. It is also a symbol of hope, as the caterpillar turns into a butterfly. The logo will be placed in the upper left of the screen, along with the name of “**My-Thy Connect**”. Upon loading of the home screen, the butterfly in the logo will have a subtle animation of flapping its wings. This will happen only once when loading the home screen and not other screens. The animation will bring a little life, beauty, and femininity to the interface, promoting the optimistic and pleasant look and feel. However, the subtlety and brevity will prevent the animation from becoming annoying or distracting.



Brand Persona: Visual Lexicon (continued)

On the home screen, a bright, contemporary pleasing photo showing a caring looking matronly doctor speaking with a woman patient will be displayed. Both the doctor and the patient will be at the same level. The doctor will not be hovering over or intimidating the patient. Although in a sterile white lab coat, the doctor will appear warm and friendly.

Standard phone calendar interfaces would be used for the pill and appointment reminders. These would likely be familiar to many users already, improving usability and consistency.

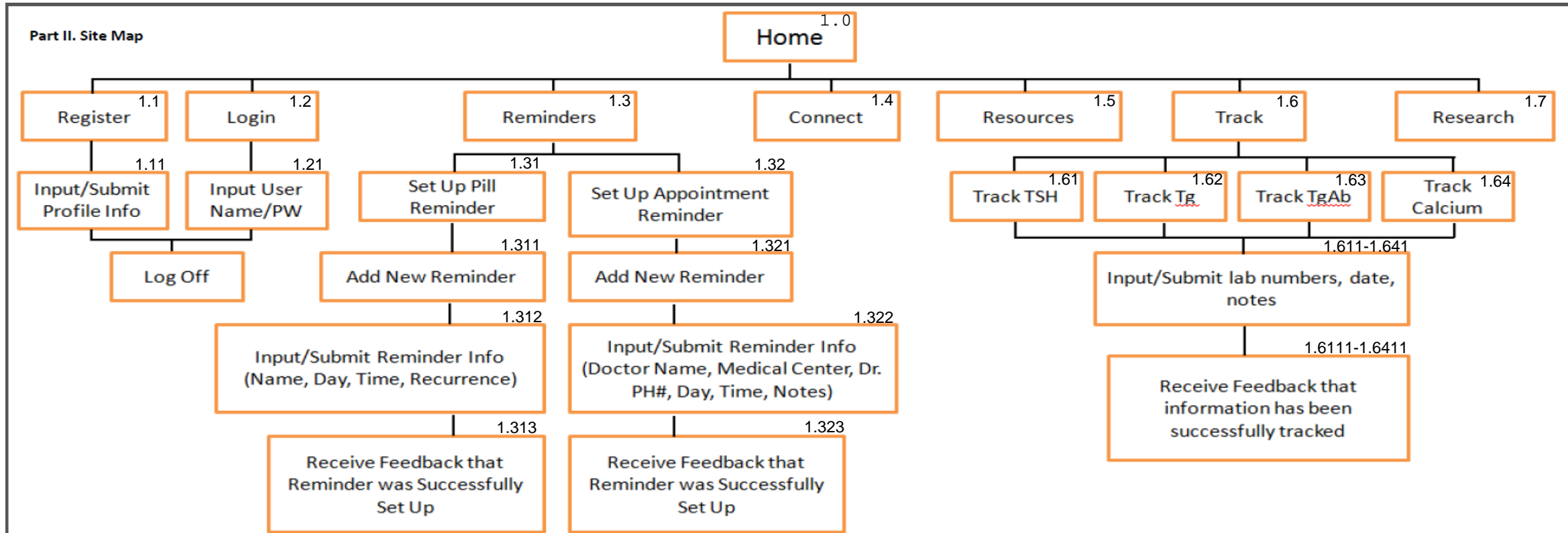
Social media sharing icons will not be prevalent, as in other apps, due to the respect for privacy. Patients shouldn't have to feel that if they hit the wrong button, their private health matters may be posted for all to see. Although there will be links to specific online forums (such as on Facebook) where users may join if they choose, these groups are private and will not be shared with their other friends or the general population. Patients will need to go through the process of accessing the particular forum, joining, and posting. The wrong button, tap, or click will not end up mistakenly sharing or releasing sensitive information.



Card Sorting



Site Map



NOTES:

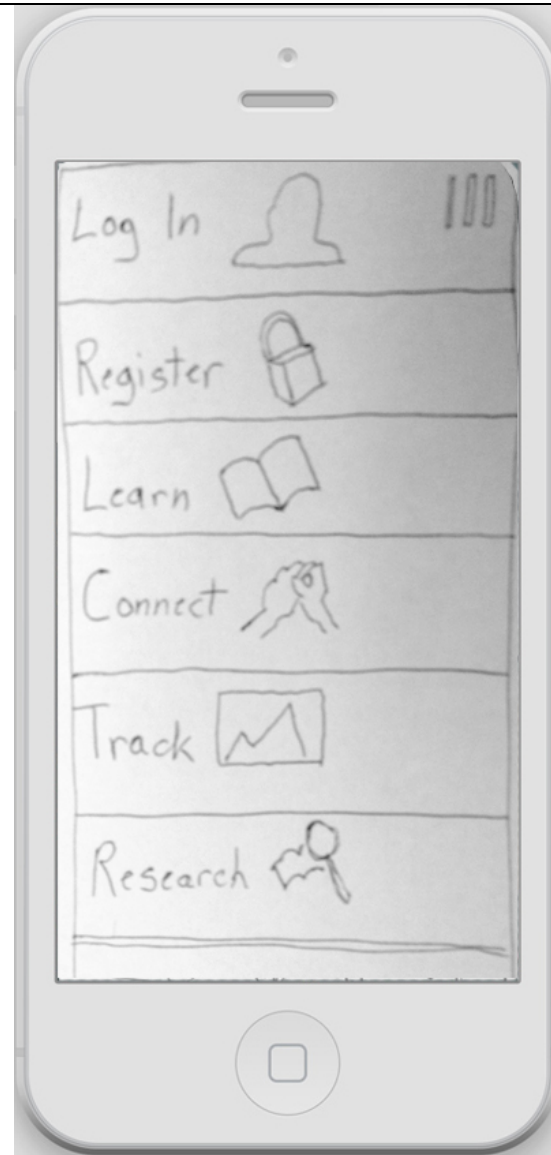
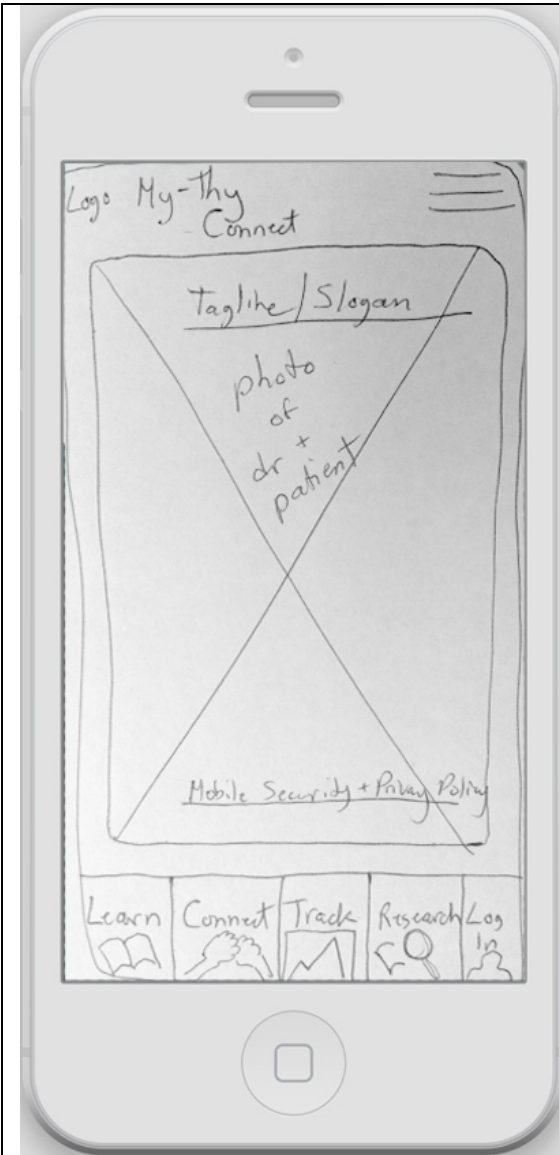
Registration/Login required for setting up reminders and tracking lab numbers.

Connect will link to various thyroid cancer forums. User sign-up to those forums takes place outside this app.

Resources will link to websites such as Thyroid Cancer Survivors' Association, American Cancer Society, and Light of Life Foundation.

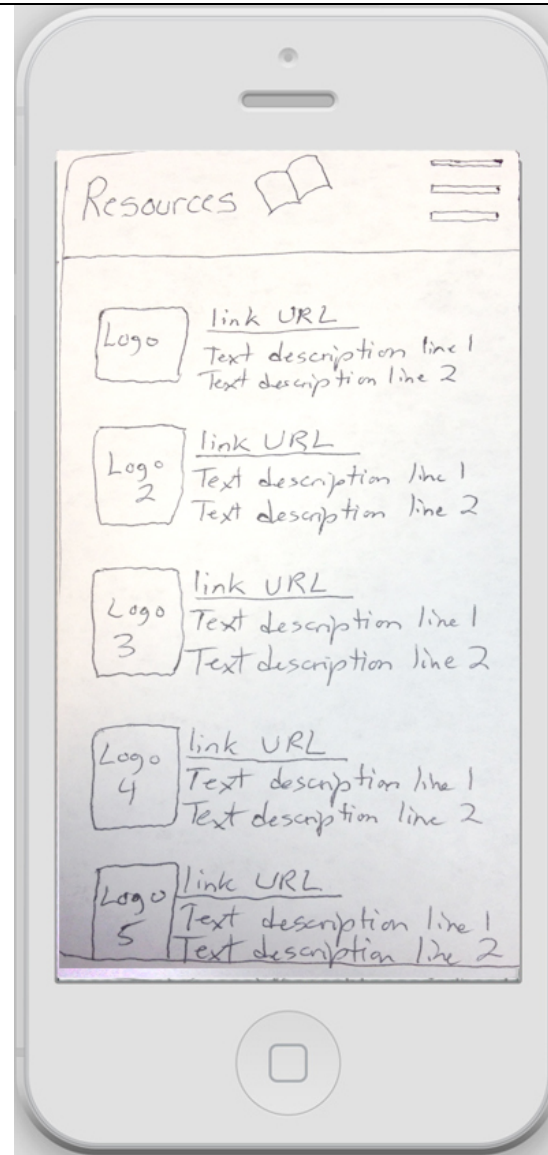
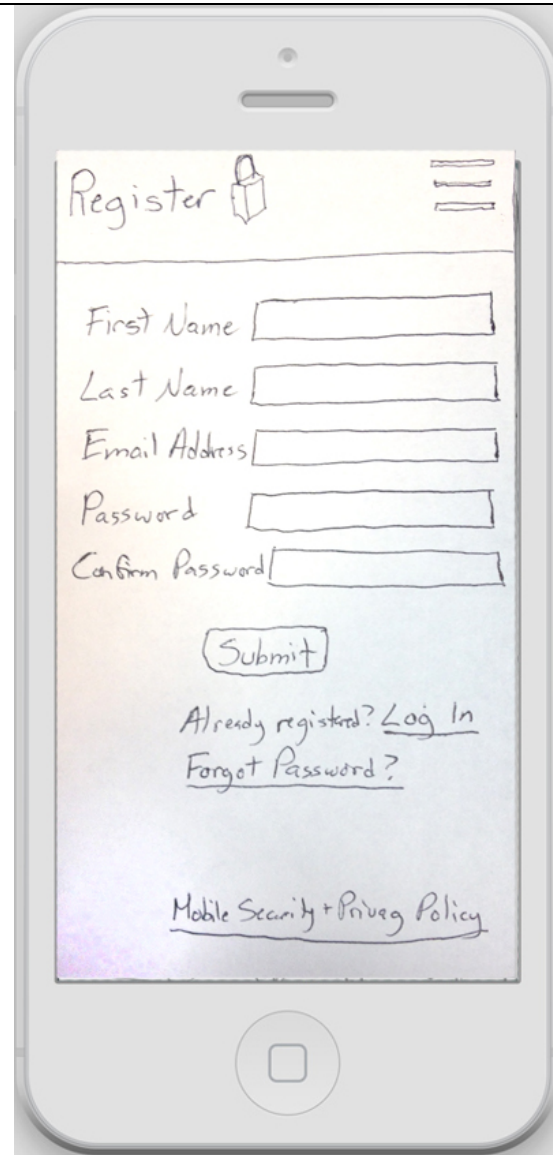
Research will link to search results of "thyroid cancer" in PubMed- most recent studies listed first

Wireframes

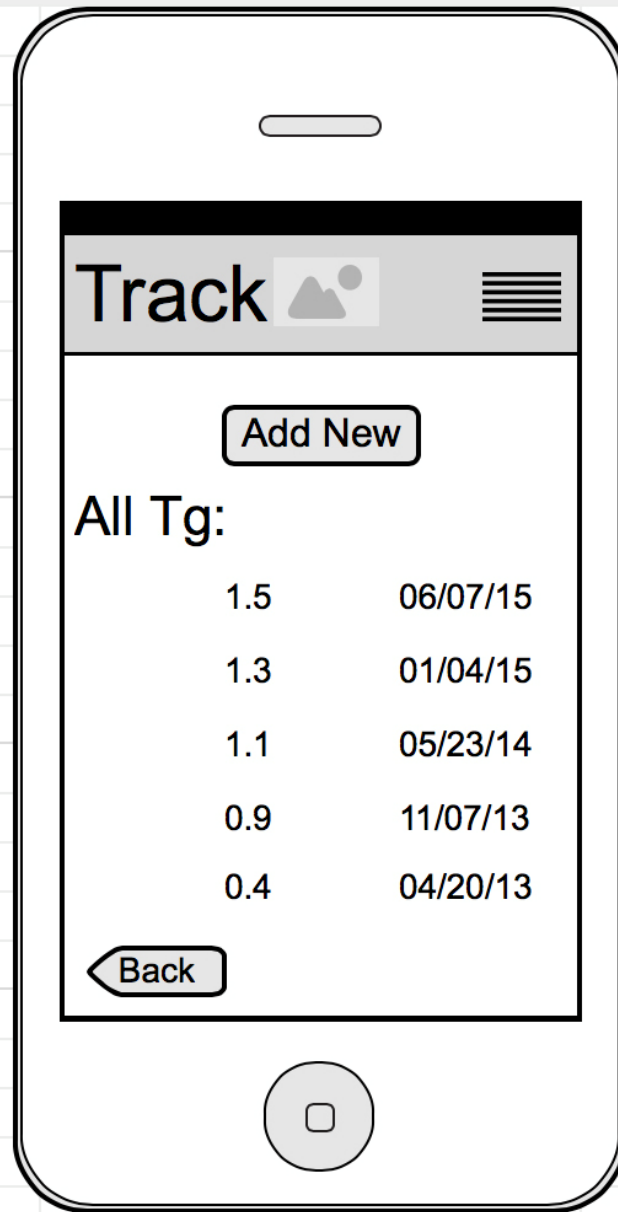
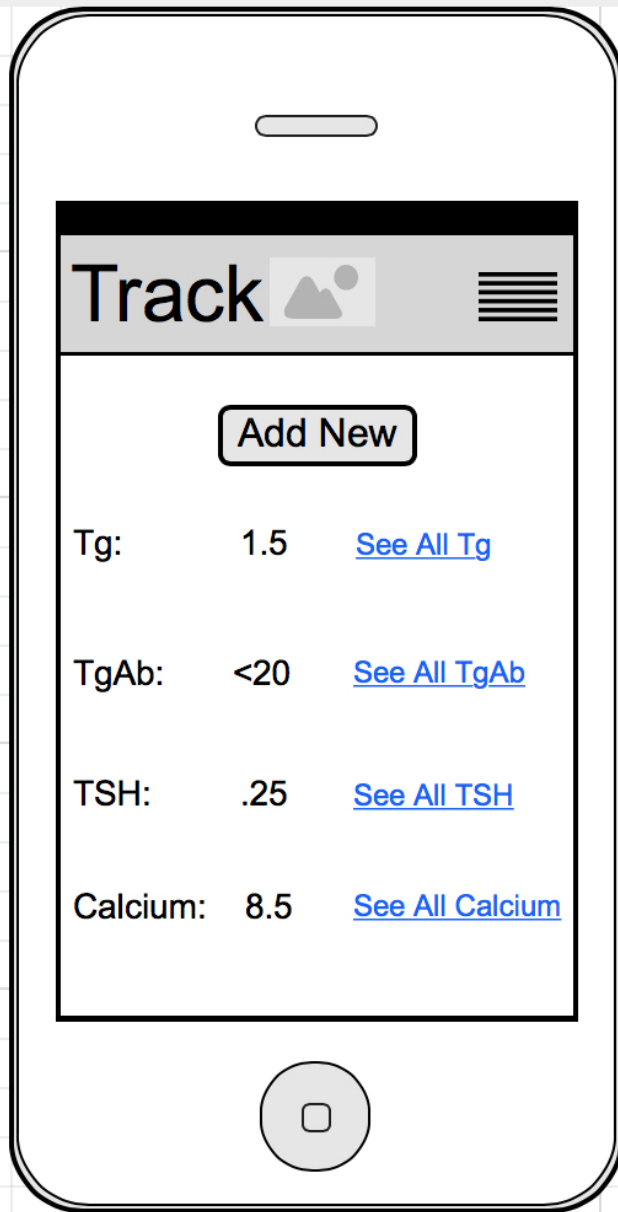


- Sandwich menu icon is always visible and accessible on every screen
- Part A shows Home Screen
- Part B shows sandwich menu icon tapped, with menu showing
- Icons/buttons are visible on bottom of home screen, but are hidden when drop-down menu opens
- Mobile security and privacy policy link opens new screen with text, which can be OK'd
- Butterfly logo initially animates by flapping its wings once when the home page is loaded

Wireframes (continued)



- Register screen shows the minimal amount of information necessary to register. Process should be easy and streamlined.
- Password and Confirm Password fields should mask the input with black dots
- Login access is available for those who have logged in.
- Mobile Security & Privacy Policy links to same link as from Home screen. Since this is a health-related app, we want this information to be prominent and readily available so that users can feel comfortable signing up and using the app.
- Forgot password shows brief form with an email address field. An email to reset password would then be emailed to the user.
- Resources screen shows a typical detail screen.
- Logos are the logos of the organizations (such as Thyroid Cancer Survivors' Association) and go to the appropriate website when tapped.
- Link URL also takes user to the appropriate website when tapped.
- Text descriptions provide brief descriptions about the organizations



- Track list screen shows all of the types of labs being tracked (these are added by the user from the Add New page.). The most recent lab result for each type of lab is displayed on this page.
- When user clicks on the “See All x” link, the details screen will show.
- Track Details screen shows the past 5 numbers and dates for that lab, most recent on top. Dates will be entered with a standard calendar picker. Numbers will be text/number input which can take all characters (including decimal point, less than sign, etc.)
- Future iterations of app may show graphs of trends of these number. For example, the All Tg screen displayed might show a graph with a line trending upward.

Thank You!

