

"Illuminating the Path of Cancer Care with a Chatbot" (Vanessa Liu, CareBud) [#82]

Brad Power and Vanessa Liu
January 17, 2024

"We knew there were a lot of information resources out there. But we were so tired. We got to a point where we had to really make the best use of our time. Were we willing to use the time to just chill, to enjoy a sip of coffee? Do we really want to do another round of research? Because the good time is so little. He was tired all the time. That experience became the origin of the startup." – Vanessa Liu

"CareBud is an innovative, user-friendly AI-powered chatbot, designed to proactively navigate cancer patients and their caregivers through the intricacies of their treatment pathway, ensuring support at every step... This is our vision... we want to feature these four perspectives: comprehensive, personalized, proactive, and simple." - Vanessa Liu

Meeting Summary

From their initial diagnosis, cancer patients and their caregivers are confronted with many challenges as they embark on their journey:

- **Overwhelmed by healthcare navigation:** Cancer patients and caregivers struggle with the overwhelming task of navigating complex healthcare systems and understanding diverse treatment options
- **Lack of comprehensive AND ALSO tailored solutions:** Absence of a unified platform that comprehensively caters to the specific needs of cancer patients, combining essential information and simplicity
- **Fragmented collaboration in cancer care:** Inadequate collaboration and information sharing among patients, healthcare professionals, and clinical trials result in delayed advancements in cancer care, inefficient use of resources, and potential missed opportunities for patient benefit.

There are many apps that have been developed to help cancer patients and their caregivers navigate and automate some of these tasks. With the arrival of generative AI and chatbots, like ChatGPT (from OpenAI and Microsoft) and Bard (from Google), navigation apps for cancer patients are on the cusp of providing a next generation of service.

Vanessa Liu is uniquely qualified to discuss the development of a chatbot-based app for cancer patients. She is passionately committed to supporting cancer patients and their loved ones. Drawing from her personal experience caring for her husband with leukemia, Vanessa emphasizes the need for improved communication and information resources for patients seeking advanced treatment after relapse.

Her aim is to create an AI-powered chatbot that provides personalized and proactive support, CareBud. CareBud will guide cancer patients and their caregivers through the complexities of their treatment journey. It is at an early stage of design. They are working on a prototype.

"Illuminating the Path of Cancer Care with a Chatbot" (Vanessa Liu, CareBud) **[#82]**

Vanessa plans to use GPT-4 as the base model for the minimum viable product (MVP) and use information from Cancer Patient Lab. The business model for the app includes multiple revenue streams through B2B and B2C subscriptions, partnerships, and education campaigns. CareBud will target advanced and newly diagnosed cancer patients with different needs and questions. The team is testing and evaluating the chatbot's accuracy and helpfulness, with a potential focus on lung cancer patients initially.

What ideas did meeting participants share about their unmet needs and design preferences?

- Guide cancer patients to personalized resources.
- Build a supportive community.
- Address misinformation and scams in cancer diagnosis.
- Personalize interactions.
- Provide information on clinical trials.
- Provide source references and citations for opinions and advice.
- Be free or low-cost.

How do patients currently get information to guide their decisions?

- Google, internet search
- Books
- Conversation with their physician
- ChatGPT
- Online support groups, like Malecare (for prostate cancer), Inspire, PatientsLikeMe
- Personally researched peer groups of similar patients
- Literature search, contact the principal investigator
- Clinicaltrials.gov
- Newsletters
- Cancer Commons
- Massive Bio
- CureMatch

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"Illuminating the Path of Cancer Care with a Chatbot" (Vanessa Liu, CareBud) [#82]

Meeting Notes

SUMMARY KEYWORDS

vanessa, patients, oncologist, people, questions, gpt, cancer patient, users, information, treatment, mvp, utilize, data, resources, model, talking, cancer, conversations, answer, misinformation

SPEAKERS

Vanessa Liu (41%), Brad Power (19%), Jeffrey Dwyer (11%), Amit Gattani (8%), Rick Stanton (5%), Bapcha M (4%), Eric Hall (4%), David Plunkett (4%), Al Musella (3%)

OUTLINE

1. Developing a chatbot-based app for cancer patients. (0:03)
2. Developing an AI chatbot for cancer patients. (3:17)
3. Using an AI chatbot for cancer patient support. (10:00)
4. Developing a chatbot for cancer patients. (17:50)
5. Using AI chatbots in healthcare with experts. (26:39)
6. Dealing with misinformation and scams in cancer diagnosis. (28:55)
7. Filtering misinformation and customizing AI models for medical use cases. (31:01)
8. AI data sanitization and landing zone for a customer-facing company. (32:33)
9. Developing an AI-powered chatbot for cancer patients. (36:30)
10. Cancer treatment research and patient support. (43:34)
11. Personalized cancer treatment research. (49:45)
12. Cancer treatment options and resources. (53:57)
13. Cancer treatment options and resources. (59:27)
14. Cancer diagnosis and treatment options. (1:02:21)

SUMMARY

- **Developing a chatbot-based app for cancer patients.** [0:03](#)
 - Vanessa Liu discusses developing a chatbot-based app for cancer patients with Brad Power.
 - Brad Power introduces Vanessa to the Cancer Patient Lab, offering feedback on her software.
- **Developing an AI chatbot for cancer patients.** [3:17](#)
 - Vanessa shares her personal experience caring for husband with PCA, emphasizing appreciation for time and effort.
 - Patients seek advanced treatment after relapse, citing lack of communication and information resources.
 - Developing an AI chatbot to provide personalized and proactive cancer patient support.
- **Using AI chatbot for cancer patient support.** [10:00](#)
 - Patient advocate suggests chatbot to guide cancer patients to personalized resources, build community.

"Illuminating the Path of Cancer Care with a Chatbot" (Vanessa Liu, CareBud)

[#82]

- Developing chatbot to provide treatment and medical-related information, avoiding giving medical advice.
- Vanessa uses GPT-4 as the base model for the MVP, prioritizing cancer patient Lab information.
- **Developing a chatbot for cancer patients. [17:50](#)**
 - Vanessa discusses MVP and user attraction, and plans to gather feedback through surveys.
 - Al Musella discusses his organization's chatbot for brain cancer patients, seeking partnership with Cancer Commons.
 - CareBud's business model aims to provide multiple revenue streams through B2B and B2C subscriptions, partnerships, and education campaigns.
- **Using AI chatbots in healthcare with experts. [26:39](#)**
 - Patients and experts discussing medical treatments could become chatbot's knowledge base.
- **Dealing with misinformation and scams in cancer diagnosis. [28:55](#)**
 - Bapcha M discusses the importance of addressing misinformation and scams in the cancer community.
- **Filtering misinformation and customizing AI models for medical use cases. [31:01](#)**
 - Vanessa Branscombe discusses customizing large language models for specific use cases, such as cancer diagnosis.
- **AI data sanitization and landing zone for customer-facing company. [32:33](#)**
 - Amit Gattani discusses data sanitization and LLM training, focusing on the importance of understanding the landing zone of a customer-facing company.
 - Amit Gattani seeks to understand the needs of his audience to provide personalized advice.
- **Developing AI-powered chatbot for cancer patients. [36:30](#)**
 - Vanessa explains that the chatbot will be targeted towards advanced and newly diagnosed cancer patients, as they have different needs and questions.
 - The team is still testing and evaluating the chatbot's answers to ensure they are accurate and helpful, and may initially focus on lung cancer patients due to their majority in the cancer center sector.
 - Brad Power and Rick Stanton are interested in helping Vanessa develop her MVP.
 - Vanessa is working on developing her MVP, with a timeline of getting to a release point in the future.
- **Cancer treatment research and patient support. [43:34](#)**
 - Vanessa seeks feedback from oncologists on their MVP release in early March.
 - David Plunkett and Eric Hall discuss their experiences with online research for cancer treatment, including using ChatGPT and support groups.
 - David Plunkett was disappointed by the lack of helpful resources from his medical organization's website, leading him to seek out online support groups instead.
- **Personalized cancer treatment research. [49:45](#)**
 - Jeffrey Dwyer connects with other prostate cancer patients through patient advocacy sites and personalized interactions.
 - Jeffrey Dwyer, a prostate cancer survivor, shares his unconventional approach to researching and gathering information on prostate cancer treatments.
- **Cancer treatment options and resources. [53:57](#)**
 - Amit Gattani suggests multi-sourcing and crowdsourcing information on cancer clinical trials to build trust and navigate the complex landscape.

"Illuminating the Path of Cancer Care with a Chatbot" (Vanessa Liu, CareBud)

[#82]

- Rick Stanton shares his experience of getting next therapy options from his oncologist, highlighting the importance of personalized advice and failed treatments.
- Rick Stanton is on a clinical trial for his prostate cancer and is not actively researching treatments, but will re-engage when the trial ends.
- David Plunkett wants a chat AI to provide references and citations for opinions and advice given.
- **Cancer treatment options and resources. [59:27](#)**
 - Brad Power shares his experience with cancer treatment and the resources he uses to stay informed, including Cancer Commons, Massive Bio, and CureMatch.
 - He emphasizes the importance of having access to free or low-cost resources for cancer patients, particularly when it comes to clinical trials and drug combinations.
- **Cancer diagnosis and treatment options. [1:02:21](#)**
 - Jeffrey Dwyer shares his experience with cancer diagnosis and treatment, feeling overwhelmed by the lack of clear information and conflicting opinions from medical professionals.
 - He emphasizes the importance of finding a trustworthy oncologist and feeling empowered to make informed decisions about one's health.
 - Jeffrey Dwyer expresses skepticism towards a patient-centric app, citing potential bias in standard of care and malpractice.

"Illuminating the Path of Cancer Care with a Chatbot" (Vanessa Liu, CareBud) [#82]

TRANSCRIPT

Brad Power

I'm the co-founder and CEO of the Cancer Patient Lab.

We're pleased to have Vanessa Liu with us to talk about CareBud and the work that she's doing to develop a chatbot-based app for helping cancer patients. I got to know Vanessa through Roger Royse. Roger is the leader in our Pancreatic Cancer Lab. He's a lawyer in Silicon Valley. So he's in touch with a lot of startups and new ventures coming out of Silicon Valley, tech, and new ventures.

Everyone at the Cancer Patient Lab is very supportive of startups. Startups are the way to disrupt the status quo. Anything we can do to help. Vanessa was kind enough to meet with us and to share what she's up to. One of the things that I say to startups is that we have here in the Cancer Patient Lab a ready-made focus group to give guidance and feedback. As a startup is developing its software, we're happy to give them feedback on what's valuable and less valuable to us as cancer patients.

Vanessa has license in this hour together with us to do whatever helps advance her approach. I think she'll be asking for those who are willing to participate in some user experience. I did it last night. I worked with Vanessa and our colleague, Eileen, and went through some of the initial iterations they have of their software, and gave them feedback on what I thought – some ideas for making it better. She'll be asking all of you to do the same.

Vanessa Liu 3:17

Thank you so much, Brad. Thank you everyone for joining this call. It is a huge pleasure to be here as a caregiver myself, and I know how hard it is to go through the treatment. And I know most of you are still probably in the stage of going through treatments or maintenance, and you probably also work full time, so I really appreciate the effort and time. Indeed, I feel that just saying thank you is not enough to express my appreciation. I just want to let you know I really really appreciate you giving your time and effort. I have some slides to introduce CareBud.

"Illuminating the Path of Cancer Care with a Chatbot" (Vanessa Liu, CareBud) [#82]



Vanessa Liu 4:37

To give you a little background about me first: I was a caregiver to my husband, who was diagnosed with [T-cell ALL](#) back in 2018. (T-cell acute lymphocytic leukemia, a cancer of the blood and bone marrow that progresses rapidly and creates immature blood cells, rather than mature ones. "Lymphocytic" refers to the white blood cells called lymphocytes, which ALL affects. Acute lymphocytic leukemia is the most common type of cancer in children, and treatments result in a good chance for a cure. Acute lymphocytic leukemia can also occur in adults, though the chance of a cure is greatly reduced.) He was just 29. It was shocking news.

We did our first round of treatment at Stanford – a stem cell transplant plus chemo. He reached remission. Then for the next three years, we were doing maintenance treatment, until he relapsed again.

At that point, we were told our best option may be just to seek more advanced treatment. So we participated in a clinical trial at MD Anderson. It was a really tough several years. Including the first treatment at Stanford, he had a lot of reactions and side effects. Because of our experience, and also what we witnessed through the treatment, we just feel there's a lot of room for improvement, especially when it comes to the patient side. We were waiting to hear back from doctors about what could be the trigger for some of his specific reactions. We were always wondering if those side effects are those infections?

We knew there were a lot of information resources out there. But we were so tired. We got to a point where we had to really make the best use of our time. Are we willing to use the time to just

"Illuminating the Path of Cancer Care with a Chatbot" (Vanessa Liu, CareBud) [#82]

chill, to really enjoy a sip of coffee? Do we really want to do another round of research? Because the good time is so little. He was tired all the time. That experience became the origin of the startup.

We'd like to come up with a tool that can be truly patient centric. Nowadays, with AI chatbots out there, why don't we utilize chatbots? The goal is to have the tool to provide comprehensive and also personalized information to patients and caregivers. Thus, it can lighten the burden on patients and caregivers when it comes to, such as information scraping. This is kind of our vision for an MVP. Down the road, we'd also like to make this AI chatbot like a cancer patient personal assistant. So the chatbot can proactively lead patients to useful resources, remind patients about their medication, and increase care team engagement. Let the chatbot do the heavy lifting. You don't need to really bother thinking – what tasks do I need to do next – because the chatbot can actually lead you.

Solution

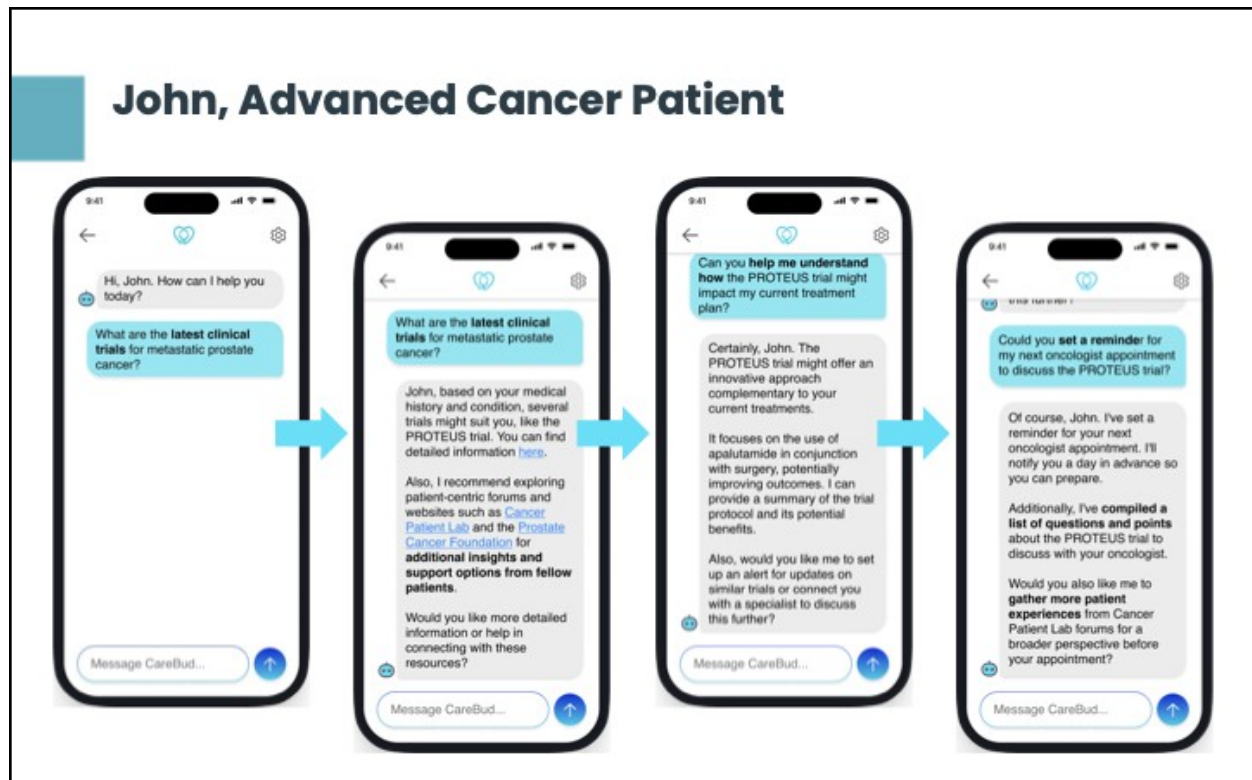
CareBud offers a user-friendly and intuitive AI-powered chatbot, designed to proactively guide cancer patients and their caregivers through the complexities of their treatment journey.

Comprehensive	Personalized	Proactive	Simple
<ul style="list-style-type: none">➤ Multi-source integration➤ Partnership across cancer care ecosystem	<ul style="list-style-type: none">➤ Based on user's unique medical profile and history	<ul style="list-style-type: none">➤ Proactive engagement and reminder system	<ul style="list-style-type: none">➤ Clear, straightforward language➤ Step-by-step guidance

Vanessa Liu 8:38

This is our vision. As I mentioned, we want to feature these four perspectives: comprehensive, personalized, proactive and simple. As a patient the last thing you want to do is to spend a few hours to get over the learning curve to learn a new tool. Once you register and figure out the interface, it shouldn't be too hard to navigate. It shouldn't take another few hours or days to get used to it. We want the tool to be very simple, just like you're talking to someone in simple language.

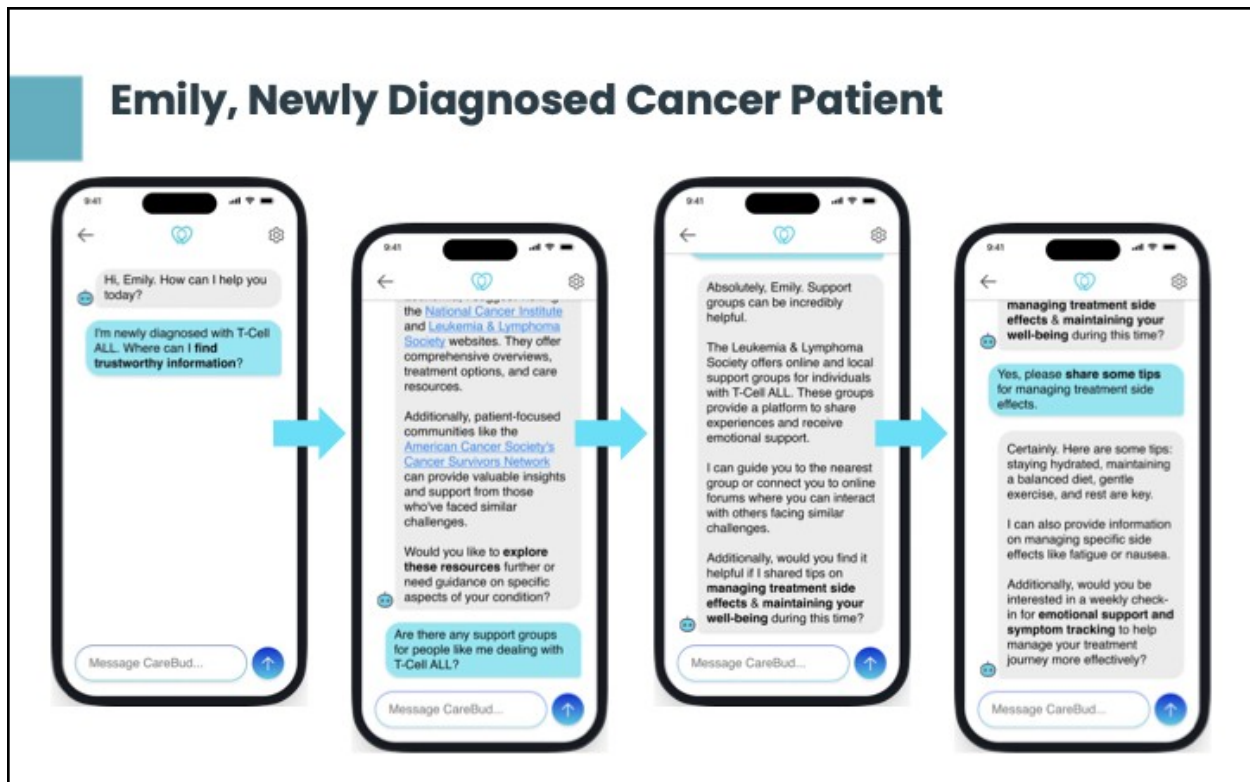
"Illuminating the Path of Cancer Care with a Chatbot" (Vanessa Liu, CareBud) [#82]



Vanessa Liu 9:34

We prepared a few user cases, and for this one I actually utilized the information hosted in our CPL's patient discussion. John is a fake name. You have tons of really detailed, useful, personalized information talking about symptoms, treatments. I think this can benefit a lot of patients out there who don't know about CPL, but who are experiencing similar conditions. So what we like to do is we like to build a knowledge database, utilizing those detailed discussions, leading patients to check out those discussions and get some knowledge about what other patients are experiencing and the treatment options out there. I think this group here is very unique. You all have a lot of knowledge as you either come from the healthcare industry, or are very experienced navigating through the complexities of the treatment journey. You know how to do research. However, to be honest, I think for a lot of patients out there, they don't know those resources, and they need guidance when it comes to research. So I think the main point here is that the chatbot can lead the patients to a lot of useful resources, not just comprehensive, high level but also more personalized. Moreover, it can create this patient community, so patients know, e.g., there's a forum out there, there are other patient fellows who are experiencing the same, and they're not alone.

"Illuminating the Path of Cancer Care with a Chatbot" (Vanessa Liu, CareBud) [#82]



This one is for newly diagnosed cancer patients who don't know where to start. The chatbot can provide those patients with credible resources out there. A lot of the resources are like [clinicaltrials.gov](#), or the American Cancer Society; they have their own databases. We'd like to basically guide patients and caregivers to those reliable information resources as a starting point, so they can start preparing themselves. And also, patients don't know what questions they should ask their doctors or in which direction they should go. And this is a good way to prepare patients to know what's going to happen later on. And also to prepare them for their meetings with doctors and for their future engagement with their caregivers or their family. I have highlighted these two, but there are many user cases. Other user cases could be as simple as asking about financial resources, mentorship resources, or lifestyle health tips. Another use case is during maintenance when patients are cancer free, and they want to perform a few checkups on their symptoms. The chatbot can also answer these questions.

So, for now, these are the visions for our MVP. Our MVP will be very focused on providing information related to treatment and medical issues, but definitely, we don't want to step into giving medical advice. So we're still building it up. And later on, we're going to engage oncologists to review our answers to ensure the chatbot answers are reliable. And so we know for sure the answers we provide are solid, but at the same time, we aim to avoid risky areas by giving too much information or leading the patient to have misconceptions about replacing doctors with our chatbots. These are the areas we are cautious about and avoid. That's pretty much it.

"Illuminating the Path of Cancer Care with a Chatbot" (Vanessa Liu, CareBud) [#82]

Eric Hall 15:50

Vanessa, thank you for demoing that. It looks interesting. My questions are, what data set are you pulling from? And how encompassing is a system prompt? Or is it just some kind of large language model that you're pulling from?

Vanessa Liu 16:14

Good question. For the MVP, we want to act fast. So, we are utilizing Assistants API (GPT-4), as the base model. Then we layer on additional knowledge, including discussions hosted at Cancer Patient Lab, which I have already talked about. We also prioritize within the chatbot to create a hierarchy of knowledge sources. In terms of this hierarchy, we rank fact-based databases like clinicaltrials.gov and others as higher priority than the baseline model itself. The second layer is going to be information discussed by reputable patient advocacy groups. Currently, we're considering a partnership with another advocacy group, but it's still under discussion. However, for our MVP, we're focusing on integrating information from Cancer Patient Lab. So, we have several layers, but the base model is GPT-4 through the Assistants API.

Eric Hall 17:54

I understand MVP. I'm a software product manager myself. What does your roadmap look like after an MVP in terms of where you might go with enhancements or something after that?

Vanessa Liu 18:13

Great question. So for now, our goal is to attract users while using the MVP as a tool to gauge user reactions. We aim to iterate on our MVP based on this feedback. Additionally, we want to familiarize people with chatbot technology, as it's still relatively new and many might not feel comfortable using it yet.

Later on, we have designed a survey to gather patients' thoughts, preferred features, and their comfort level with using a chatbot. After this call, I would appreciate it if you could take the time to fill out the survey and provide your insights. But at the same time, our MVP is a tool that helps us understand where we need to grow, as well as to gradually make users more comfortable with using it.

Eric Hall 19:36

Makes sense.

Brad Power 19:47

As Eric said, he's both a patient survivor and as well a software product manager, so he's somebody you're really going to want to take advantage of, because he's got that good combination.

"Illuminating the Path of Cancer Care with a Chatbot" (Vanessa Liu, CareBud) [#82]

There are a few terms we're throwing around, assuming everybody knows, but you might explain "MVP", and "Open AI", "Chatbot", and "ChatGPT". If you could just do a basic introduction to those ideas, which are assumed by everyone, but maybe just to ground us.

Vanessa Liu 20:28

MVP stands for "Minimum Viable Product", which you can think of as a simpler version of your product, usually with just one or two key features. It's designed to let users test these features first. The MVP is a tool, often used by startups, to gain user traction and to demonstrate a proof of concept that the business idea is viable. ChatGPT is a chatbot model, designed and developed by OpenAI. For our MVP, we're utilizing their latest model, which is GPT-4. I think I mentioned Assistant API; it's an interface for developers. Essentially, it's GPT-4 for the Chatbot, but it's designed for backend development. You can think of GPT-4 as meant for front-end users, like us, who input questions or instructions, and the chatbot provides information. Assistants API is the same, but it's more customizable and designed for developers to build apps. It allows for integration with other software and enables more advanced features.

AI Musella 22:55

My organization is partnering with Cancer Commons and another nonprofit to create a chatbot, basically the same type of thing. We'd love to try to work together. So we'll talk offline later. But what is your business model? How is this going to fund itself?

Vanessa Liu 23:16

We're going to design our business model to be multifaceted with multiple revenue streams coming from both consumers and institutions. We're going to be both B2B and B2C. For the B2C part, we envision a subscription-based model for advanced features. However, this won't be part of the initial MVP rollout. These future features will allow consumers, specifically patients, to access more advanced capabilities beyond just a language model or chatbot, for which they will need to pay a subscription fee.

On the B2B side, we're considering partnerships with life science companies. We aim to jointly host educational campaigns, which would be mutually beneficial. We want to inform users about the advanced treatments available out there. Our objective is to make patients aware of these resources while enabling life science companies to connect with potential users. There's mutual benefit, and we also plan to run educational campaigns. This is one part of the B2B strategy, and another will be fundraising through partnerships with patient advocacy groups. These partnerships may involve monetary or in-kind resources and follow a similar format to this scenario we've demonstrated. By leveraging the data, we also introduce users to the patient advocacy groups' forums. This way, both parties can reach each other more easily.

AI Musella 25:48

It gets sticky though when, like if a drug manufacturer sponsors it, then that might bias the chatbot to their drug, which is something we've been grappling with. It's tough, you need money to make it run, but it's hard. So we're thinking more along the lines of, charity has like a wall between the funding and the projects. So have the charities fund chatbot and not even tell you

"Illuminating the Path of Cancer Care with a Chatbot" (Vanessa Liu, CareBud) [#82]

who's funding it. So make sure that it's completely unbiased. It's tough, it's a very tough thing. I understand, we need money to make it run.

But it's a great idea.

Brad Power 26:39

AI's another person you're going to want to have a follow-up conversation with him because he's clearly thought about it. I think I mentioned to you before that I worked with Rabble Health, and they came up with a similar model where a patient advocacy group established their relationships with the patients and then they provided infrastructure for that patient advocacy group. It's a hybrid model like AI's saying where the nonprofit charity-based philanthropic organization is the front. Then they were providing infrastructure behind the scenes to that charity that was up front. So it's a way to finesse it. You're not seeing it as the app vendor being the one who's promoting. They're white labeled.

AI Musella 27:32

We have some great resources. We have a patient registry. It has about 520,000 patients in it with medical information that the Chatbot can learn from, what treatments they're doing, and the outcomes. We have virtual tumor boards where probably ChatGPT could listen in or hear a recording and figure out the rationales of why these doctors are recommending different things. There is a lot of good stuff in there. It has a lot of potential.

Brad Power 28:02

That's what we've talked about also with Vanessa is that these conversations, literally these conversations we're having right now where patients are having a conversation with experts can become the body of knowledge that the chatbot is looking at. So all of the tumor board conversations become an asset, all that data that you can feed into the chatbots. So these are great ideas.

AI Musella 28:28

But a question in the chat which says, we have to deal with misinformation, which is scary, because if you look at the internet, even clinicaltrials.gov has a lot of bad trials on it. You can't trust clinicaltrials.gov.

Bapcha M 28:55

Well, let me start with LLM, which is a large language model, which is what ChatGPT is. The way they get their data is by scrubbing all kinds of public sources. As it stands today, there are no filters. So going forward, when not at the MVP level, but when it's actually rolled out to patients, I can work with you, Vanessa, on how to deal with misinformation because like I shared with Brad up front.

I've run a Facebook group for like over 15 years. It's one of very few properly science-based anti-scammer, anti-scam groups online. And that's where I met Vanessa. I had late stage

"Illuminating the Path of Cancer Care with a Chatbot" (Vanessa Liu, CareBud)

[#82]

Hodgkin's lymphoma, but that was in 1995, '96. So I have been in remission for a long time. So I've been lucky to be in remission because I was treated at Stanford.

That being said, we need to deal with misinformation, scams, and then stuff like, as soon as you're diagnosed with cancer, a whole bunch of idiots descend on you. Pardon me for using the word "idiots", but that's what they are. Could be family members, friends, and they all mean well, except they will give you bad information like dandelion root cures cancer, or I have this wonderful magical water that's going to cure all cancers, any cancers, which is a red flag in itself. I can help you with that, Vanessa.

Brad Power 31:01

What have you seen, Bapcha, on how you can filter for misinformation and scammers? It sounds like you're doing it manually. You're doing it with humans, and that would be a big job, I guess.

Bapcha M 31:13

Well, if you can do it manually, it's easy to automate it. You need to tell the large language model what you're doing, and that's how LLMs work.

Rick Stanton 31:33

What is an LLM?

Brad Power 31:36

Large Language Model. So it's generative AI. It's different names for generative AI. It's this latest wave of AI, such as ChatGPT, OpenAI. Bard is Google's product. What Vanessa is alluding to is these are general purpose tools that will have literally a billion customers. And what they need to do is be customized for different use cases and applications in specific areas, whether it's healthcare, cancer, or maybe a specific kind of cancer, like prostate cancer. So the work that has to be done is companies like Vanessa's need to take this down to a level where it's actually useful to patients. And it's not just a general purpose model where you're asking general questions, but more working in the medical zone for a customized service.

Amit Gattani 32:33

There are a ton of companies in this space. Everybody's trying to do a piece of slice. What are they good at? Where can they add value in this? So there are companies who are going to be the data aggregators for LLM training, who have anonymized data, taken it across, not just for ChatGPT, for that orders, but across many, many different sources, organizations and stuff like that.

And then there are companies that are going to focus on the front end. What do I do with that stuff now? How do I service patients and stuff? Because by itself, it's a very, very big task, right? Because if everybody starts from scratch, trying to clean the data, sanitize the data, label the data, figure it out. I mean, it's just a... So like every other software thing, it's a layered industry, and goes into the layered architecture of who's doing what and where.

"Illuminating the Path of Cancer Care with a Chatbot" (Vanessa Liu, CareBud) [#82]


So the question is, are there companies that are already leading in that space of getting you the data as best as they can? And they will be in that space. They are not the customer-facing companies. You're the customer-facing company, which is recognizing the landing zone of where your customers are, how you want to segment them, how you want to service them. So that would be the question, because otherwise it's a very, very massive task to do. So that's just my comment on the data sanitization slash LLM training.

My question, also just looking at your roadmap, is I'm trying to figure out what's the sweet spot of your landing zone. Where do you want your MVP to land? I mean, from a simple customer service thing, are you taking these medications and supplements to answering the more complex questions that are three degrees of complexity away from the simple stuff – where are you trying to be, where's the sweet spot of your audience? You recognize from this forum, Cancer Patient Lab, we have our needs.

We have been talking about chatbot needs and stuff like that. Our needs are probably a lot more complex on what we want to be able to do. As an example, we have a continuous influx of new patients who will come in, but they don't know what the historic conversations have been.

How do you summarize and give them the historic conversation when they ask? They ask the question so that they have a good starting point rather than everybody answering, right? So the needs can be very, very different. And I'm just curious as to if you have segmented the market to say, this is the sweet spot of what you want to service and serve, because that's where the biggest need is in your mind. So can you help us understand that?

Competitor Analysis



Vanessa L.

Feature/Competitor	CareBud	CancerCare App	Rabble Health	Belong. Life App	Medisafe	Wellness Tracker
AI-Driven Chatbot	✓ MVP			✓		
Proactive, User-Friendly	✓ MVP					
Cancer-Specific Resources	✓ MVP	✓	✓	✓		
Personalized Support	✓ MVP	✓	✓	✓	✓	
Community-Sourced Insights	✓ MVP			✓		
Treatment Tracking	✓	✓			✓	
Medication Management	✓	✓			✓	
Healthcare Professional Resources	✓	✓	✓	✓	✓	
Patient-Provider Communication Tools	✓	✓			✓	
Wellness & Lifestyle Tips	✓	✓	✓	✓		✓

"Illuminating the Path of Cancer Care with a Chatbot" (Vanessa Liu, CareBud) [#82]

Vanessa Liu 36:30

This is a more holistic picture of CareBud. But as you know, we're still developing an MVP. We're going to need users' inputs to help guide us to where we want when it comes to the information part. So our MVP is going to be more like the chatbot too. So we need users' feedback in order for us to really know which direction is the right direction.

To answer your question about how we segment the consumers or patients, because when it comes to even just information, there are so many different areas you can touch. People with more advanced cancer, who already have had cancer for years are going to ask very different questions from those who are just newly diagnosed. Patients may have already reached remission, they're just going to utilize it as a tool to do maintenance. These are the three main buckets we're going to segregate. But in terms of MVP, for now, we're more targeting the first two.

But we are not separating the first two, which are the advanced and the newly diagnosed. These two are going to be our targeted users. Hope this answers your question.

Amit Gattani 38:17

Isn't that a lot to work with? Because, like you said, the needs are somewhat different than other spaces.

Vanessa Liu 38:28

It is. And right now we are still building the MVP, still training it and feeding it with different information just to see the answers. Later on, we want to involve oncologists to evaluate the answers, to score those answers. High-level, it could target a lot of users because the baseline model is GPT-4. But as you mentioned, there is also a lot of misinformation probably within the information it provides. This part we're still testing. We want to see how well, how good the answer is. If the answer is actually at a high level and pretty directional, then it's good enough. We definitely want to target more users. But if the answer is still a little bit of hallucinating, misleading information, then we're gonna narrow it down to just a part of cancer patients.

Maybe we're going to focus on lung cancer, which is actually the majority of the cancer sector. We're going to start with lung cancer patients and start with patients with more advanced status.

Rick Stanton 40:15

Definitely the wave of the future. You've got some big hurdles. Several of us have worked in this space before and some big challenges, but I really like what you're doing. You're layering on tools that I didn't have five years ago. So I tried to do a similar thing at Human Longevity. Just didn't have those tools and a way to go. I think your MVP is good, and you're going to learn a lot when you actually try to help individual patients, such as us. So everyone here has got different data, different trajectories. It's a lot to basically ingest our data from the mass of data. But I am a big fan and it sounds like you have some good pals here that have got some great insights. Yeah, I would leverage that. Way to go.

"Illuminating the Path of Cancer Care with a Chatbot" (Vanessa Liu, CareBud) [#82]

Brad Power 41:43

Vanessa, you'll want to follow up after this session with Rick Stanton. He's a co-founder of Cancer Patient Lab. He's a bioinformatician by background. So he can go deep on microbiology and understands all of the technical aspects of the medical, technical, and microbiology aspects of treatments and options and so on.

Amit Gattani, who was speaking before, is by background is a tech product manager, and tech business executive. He really understands everything from marketing to business. You heard his questions. He really could understand the business model. He can understand strategy and all the operations. Amit is based in the Sacramento area and Rick is based in the Amgen catchment zone. I mean, near LA.

The people that have shown up are interested in helping you, and they all have expertise that I think can help you.

Eric Hall 43:01

You talked a lot here about MVP and are still working on developing your MVP, as you said. I guess I was just trying to get a little bit better understanding. I'm sure it's an estimate, of course, about like, what is your timeline? Do you think in terms of getting to a point where you're actually releasing this MVP? I'm just trying to get a little context in my head as to where you're at in this development cycle of getting there.

Vanessa Liu 43:34

To be very honest, we are bootstrapping, and we have only one developer (actually we have one fractional CTO who's also a developer but working on the backend). And then we have one engineer doing the chatbot piece. Our timeline is we're aiming to release the MVP in early March, with all the tasks (review) done by oncologists by that time. The developing piece is actually going to be very quick. We are almost halfway, but we already saw a lot of issues. I want to basically leave a lot of cushion to get oncologists involved to score those answers. So we're going to do a lot of iterations and corrections before we release MVP.

Eric Hall 44:42

That's much sooner than I expected you to say, but that's really cool. I know that the MVP is just a start. Once you put that out there, that's when you really get the feedback and that's where you can really take off from.

Vanessa Liu 45:03

Yes, I want to say early March is definitely a very optimistic view because we haven't really gotten feedback from oncologists.

Eric Hall 45:20

Well keep going. That's awesome. Thanks.

Vanessa Liu 45:45

"Illuminating the Path of Cancer Care with a Chatbot" (Vanessa Liu, CareBud) [#82]

I want to listen to your honest opinions. The first one is not a hardcore question at all. How do you currently learn about the treatments and new clinical trials and to learn about your symptoms? Do you use Google?

David Plunkett 46:19

Yeah, I do a fair amount of *ad hoc* searching using Google and DuckDuckGo, and a couple other search engines. And I also do watch the conversations in a couple of Facebook groups. And I've actually gotten some interesting leads from things that have popped up in my YouTube feed, for example, from a urology channel, so serendipitous finds anyway. And, of course, each of those spiders out into other questions. But I do a lot more of my closer searching along those lines. That's all online. And I find things I want to discuss with my oncologist. And that can lead to other things, including a couple of books that she recommended to me.

Eric Hall 47:22

Yeah, so Google, of course. That's like the first thing, but something actually my wife has done, not me, my wife is the researcher of our house. She uses ChatGPT currently. Take like, your doctor prescribed Pluvicto, for example, that's a prostate cancer treatment. You can plug that in there and ask it, "What are the side effects? What's the treatment, and what does it mean?" Just to quickly get a better understanding of what the heck that treatment means.

I've had that in the back of my head as you're talking about your product here. One of my questions was, "How does it differ from just putting stuff into ChatGPT?" I did hear one thing you said, that you're looking at Cancer Patient Lab data also.

David Plunkett 48:39

I wanted to add one thing. When I first got started with all of this, I expected to find some resources and leads through the medical organization, my oncologist's hospital and their website. And I was really disappointed at how little I found that was either helpful or enticing to pursue at all.

Back to one of the earlier points in this discussion, it was over a year before it even occurred to me, maybe I should go see if there's some support groups online, because what was available in person in my general area was much too far away and much too much trouble to get to.

Jeffrey Dwyer 49:45

The question that you were asked about, where do you go when you first are diagnosed for information? I quickly thought about that. Basically where I have gotten all my information is not really through general search, but through signing up for patient advocacy sites through, for example, [Malecare](#), or on Inspire, or Patients Like Me. That was where I first went. And you encounter a lot of scams, as you mentioned, they come from everywhere, but then you dig down, you reach out.

I have developed my own network through the private chat on patient advocacy by digging down and getting an email address, a phone number. So I probably have two, three dozen

"Illuminating the Path of Cancer Care with a Chatbot" (Vanessa Liu, CareBud)

[#82]

patients like me that are on similar profiles. They're Gleason 9/10. They've had a prostatectomy. Now they're at their radiation point. "Okay, how are you going to pick that?" "Okay, well, have you ever heard of this? Have you ever heard of that?" It's a lot of personalized interaction with men from around the world. I mean, I'm talking to people in Australia, in England, in Canada, through direct email, some with phone calls. I'm talking with a man in Thailand over the phone.

That's how he prefers to talk. And I'm finding, well, how did you make that decision? Well, have you seen this paper? No. So you don't find that stuff on Google.

You don't find it there because it's not there. You have to dig it out of patient portals and then dig it out of the patients that are taking the time to basically post and get in arguments. And basically some get banned.

I got banned from one because I was asking questions, and I realized I'm getting banned from this particular portal because they're sponsored by competitors of what I'm saying. For instance, I'm asking about drugs that used to be used for prostate cancer, but now they're not being used because they're pushing the one that comes from that pharmaceutical company. So it is the wild, wild west out there.

But that's where I've gotten as far as I've gotten, which isn't very far. I mean, I've had a prostatectomy, and I've had radiation therapy, but I had it through Proton Beam. And let me tell you, trying to get Proton Beam service in New England is a bitch. You cannot get it. You have to leave the area. And it's for a competitive reason.

So that's where I get my stuff, but it's not through a lot of the traditional things. I eventually get to the medical papers and then I get to the doctors, but it's a hunt, and I don't know how you're going to standardize that. I really don't, but you asked, so I thought I'd supply it.

Brad Power 53:24

Jeff's really unusual in that he is a researcher. His background is in literature actually, but he goes and he finds an article that's interesting. He finds a principal investigator, and then he reaches out to the principal investigator and says, "Can I talk to you?" So he's amazing in that regard. He's very unusual, but that's what a super activated patient looks like.

Amit Gattani 53:57

I was just going to support what Jeff said as well as David said. None of us have time, to your point. Do we want to enjoy a cup of coffee with our spouse or just keep researching? None of us have time to just keep our head in the sand all the time with this stuff. So the way I look at it is you have to multisource and crowdsource the problem and multisourcing and crowdsourcing is basically, joining some of these groups, listening into them for the topics that are relevant to you, reach out to those individuals for more one-on-one conversations, like Jeff was saying, and then take it from there.

"Illuminating the Path of Cancer Care with a Chatbot" (Vanessa Liu, CareBud)

[#82]

If you're looking for something really basic, you can go to the clinicaltrials.gov but we are in the stage where we are three layers of separation away from basic, and it requires real experience, discussion, and you just have to listen to multiple groups, and then give back to them because, again, if you have learned something, give back to them because others will benefit from that. There may be sponsored groups, there may be things which people call a scam, but I generally think that people are doing this in good faith, if there's no big commercial sponsorship aligned. Because people are patients, they know they have to build trust for them to trust others. So generally, moderators do a good job. If somebody is getting out of the line then they'll help navigate that but a good part of it is just multisourcing and crowdsourcing your problem.

Rick Stanton 56:06

I'm increasingly getting my next therapy option from my oncologist. As you move along, through, you've already done this, you've already failed that. So just as a quick answer to your question, my oncologist is at UCLA. He's got a fair view of clinical trials and treatments. I am currently just not doing a lot of research, because I'm on a clinical trial. This seems to be working. But that will change as I start losing efficacy on that clinical trial, then I'm going to be looking more. So it's like I'm taking a break from looking because I can feel and I need a break. And then as I need to find my next parachute, then your services will be more valuable to me. So I see this slinky timeline where, "Hey, okay, I'm cool for a few months." And then, "Oh, I'm not, better talk to Vanessa."

Brad Power 57:40

We find that generally the pattern is that if people are looking at their next line of therapy, then they're very engaged. And when they're in remission, and things are stable, then they're not. Your persona of the user is going to be filtering in and out depending on their situation.

David Plunkett 58:01

One of the problems I think you're going to come up against, and I don't have any recommendations on how to solve it, is when I'm doing my own searching and reading and referencing and exploring, and I come across opinions, I'm always looking for the references. I'm always looking for the citations. So if I were to be using some sort of chat AI tool, I would be wondering, "Okay, you just delivered this block of text giving me an opinion or advice. Why do you think so? What are the references?" I don't know how to present that, but it would be something that I would very much like to be able to follow.

Brad Power 58:43

Which is also a solution to hallucinating and making stuff up, the misinformation.

Vanessa Liu 58:51

Yes. And also, yeah, so we also thought about it. And one thing we'd like to do is definitely show the link to the resource in the conversation. And this actually also can help us by not really giving a lot of detailed advice. From our end, we want to be the bridge, not the provider. We want to bridge users and the credible resources.

"Illuminating the Path of Cancer Care with a Chatbot" (Vanessa Liu, CareBud) [#82]

Bapcha M 59:30

I've gone to oncologists at Stanford and El Camino very recently with two very new patients who are very close to me. The way they know about their treatments is they get diagnosed, biopsied, and then the doctor immediately asks you questions from Epic software and sticks you in a silo. That's about all they do. It's highly transactional. It's going to be hard to cut through to the patient through the siloing of patients, if I may say so.

Brad Power 1:00:14

In addition to everything everyone said, I also subscribe to a number of newsletters. A lot of those are announcing when new treatments are coming online or becoming available or being approved.

The other I must plug is Cancer Commons. Cancer Commons provides free second opinions. And as I'm approaching my next line of treatment for my lymphoma, Emma Stivelman at Cancer Commons has been an angel. She is just amazing. She's down into the guts of understanding the disease three times, 10 times better than I ever could and advising on clinical trials that I should be considering and prioritizing amongst all the treatment options that I'm looking at. So she's doing what my oncologist would be doing, but it's so valuable to have that kind of resource so that I'm now fully armed and prepared to go have the conversation with my oncologist for the ultimate decision, but I've already been through the whole decision process with everything from Cancer Commons.

Vanessa Liu 1:01:21

May I ask if the information provided or the services provided by Cancer Commons, are they free or are they a paid service?

Brad Power 1:01:39

Free.

I'm also using MassiveBio, which is another member of the Cancer Patient Lab preferred community. They provide free guidance on clinical trials.

There's another service that we use called CureMatch, and they take biomarkers and then give suggestions for drug combinations. All of these are information that I can assemble and then take to my oncologist. And Rick's been through the same process, and Brian as well.

Jeffrey Dwyer 1:02:21

I just wanted to comment on what Bapcha said. He's absolutely right where you are guiding people that come to you, and this has happened to me over the past four years. "Jeff, I hear you've got prostate cancer. I just got diagnosed." So you ask a half a dozen questions and you find out, I come to the discussion with somebody new that they get, they're so curious and so frightened that they get dumped in the room with a urologist. If they're lucky, they've gone to a center of excellence, but there is still going to come a time where they've gone through what is called the cancer diagnosis. And they get sat in there, and in comes a urologist, and he says,

"Illuminating the Path of Cancer Care with a Chatbot" (Vanessa Liu, CareBud)

[#82]

"I'm trained in surgery. So I'm here to tell you that I would do surgery." The next guy coming in could be selling you a Chevrolet or a Ford, but he's selling you radiology. So he's giving you the term there. The next guy is the oncologist, and I can put you in remission with these hormone drugs. And you walk out of there wondering, "How many books can I read between now and when I have to make this decision?" And it drives you crazy because it seems like the colleagues at the facility, whether it be a small rural hospital or one of the big centers of excellence, are all in competition with each other for their trained specialty. And when you get really cynical about it, their cash flow. You come out going, "Jesus, who can I really turn to?" That sent me to the patient portals because I had to ask people, "Hey, I was just presented with this." And what bounces back is a dozen anonymous feeds saying, "Don't do that. You'll be toast. You'll have a burnt anus the rest of your life if you do it that way." It's frightening. If you just are one of those guys that I see in that waiting room all the time watching the wall TV, just doing whatever they were told, it scares the hell out of me. I feel sorry for them because they're on a path through a silo, like you say, without having any idea what else is out there. That's the way I think about it. Of course I run up against that all the time. I understand, Rick, where you finally got an oncologist that you trust. I am not there yet. I trust them, but I think that their bias is so tied to standard of care, malpractice care, colleagues, and proven clinical trials that you just don't know. You just don't know. I'm probably the worst guy to be talking to anybody who's just been diagnosed because after they leave me, I never hear from them again. And when I run into them, they say, "Oh, I stayed with my local urologist in Podunk, USA. And this is where I am." And I say, "Well, good for you. I'm glad. Good for you." I just can't do that. That's where I am. So that's my story.

Vanessa Liu 1:06:21

I didn't get a chance to throw out the hard question, but I think after the meeting, I'm going to post two links in our discussion board or the community board.

One is a link to our user survey. If you can please spend a few minutes to fill out the user surveys, it's going to be very, very helpful for us. It has some questions related to your past experience, how you think about a patient-centric app. If you can fill out the survey, it will be a big help for us.

I'm going to connect you with our UI UX person, Eileen. We need another five or six volunteers to help us finetune our prototype. Brad already did one yesterday, and we're looking for another five, hopefully six people who can help us, can do the user testing. It will be about 20 minutes to 30 minutes. I will also leave my contact information. I'm really hoping to have further conversations with you.