From Supply Closet Prototype to Medical Device Founder with Dr. Hilary Gallin Transcript

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Meet Dr. Hilary Gallin

Welcome to the Startup Physicians podcast, where we explore how doctors lead healthcare innovation. Please like and follow our show to join our community of physicians contributing to meaningful change.

Everyone, welcome back to Startup Physicians. I am thrilled to be here with Dr. Hillary Gallon today, an anesthesiologist turned startup founder multiple times over, as well as an advisor consultant to startups.

Thank you, Hillary, for joining me today. >> Thank you for having me. >> So, I would love if you could share a little bit about your clinical background and your entrance into the startup world and and how that unfolded. >> Absolutely. So, I'll start with my clinical background. So, I am an obstetric anesthesiologist in a major academic New York hospital. Do general anesthesia and I do obstetric anesthesia, but along the way I've cultivated my interest in entrepreneurship. And mostly I think about that as solving problems that I see in my day-to-day. So, I've started two startups. One is called Fast Line, which creates which has created a medical device to make central line placement safer and easier. And the second one is called Arcs, which is high-vis PPE that is made for women. >> That's amazing.

From medicine, business, and engineering to startups

So, a lot of people ask me like how do you even know to start a startup? You had a very interesting like pre-clinical career. Can you tell a little bit about what that was and how that led you to where you are today? >> Sure. I started in college as a biomedical engineer. I've always been really interested in solving problems, especially solving problems in people. And then after college, I went to Goldman Sachs and I worked in their healthcare investment banking group.

That was a really wonderful experience where I learned about how to read financial statements, how to buy and sell companies, and thinking about business and medicine. Um I then went to medical school and business school and while in residency decided to start these companies. And it really came from a daily frustration of seeing problems that affected me directly, affected my colleagues, and we thought to ourselves, "Can we fix this? Can we make it better?" And so, that was really the the attractive part about entrepreneurship was I get to make something that I see every day uh easier and safer, and so we wanted to tackle that.

>> I hear that a lot from physician founders that it really starts with something that you have direct experience with, and you're actually really seeing a problem. I think that we're really uniquely qualified to solve those problems because of our exposure in in the field.

Finding startup ideas in clinical practice

>> Absolutely. I think when you're trying to solve a problem, it's easy to kind of think about what is frustrating to you, but then you forget about how many people around you also share that problem. And that's I think the most fun part is not just realizing the problem that you have, but talking to everybody else around you and saying, "Well, what are your frustrations?" Right? They may not be the same as yours. Learning about kind of what the problem is more globally, testing out that product or your very early prototype with people around you who are also subject matter experts, and really thinking about kind of approaching this company really organically. Right? We didn't set out to say, "I want to make a device that looks like a specific thing." We really thought to ourselves, "I want to solve a problem. I have no idea what it's going to look like, and I'm not quite sure how I'm going to solve it, but let's start with the building blocks." And almost do a design thinking exercise, figure out "Why is this hard for me? Why is this hard for others? And what can we do about it?

Design thinking and problem validation

" >> I love that you mentioned design thinking cuz it's one of my favorite things to talk about is it's like this for those of you who haven't done this before, it's like a double diamond approach. So, you picture two lines that are diverging and then converging to find the first diamond. So, it's really you want to identify the right problem.

You don't want to be building a solution for a problem that doesn't really exist or doesn't really have a big market share or a big total addressable market, as we call it. Um, so you really want to be broad about thinking what what is this problem? How do we characterize it? Is it like you said, is it a problem for other people, too? Is it How big is the problem? And using a lot of that like broad brainstorming and research to come up with a bunch of possible problems and a bunch of qualifications of the problems.

And then from there, being able to really converge on the real problem statement that you want to identify and address. And then doing the same thing with solution. So that's the second diamond. You do the very divergent brainstorming, market research, tons of input from other people. You know, you you mentioned you get feedback from your colleagues who are also subject matter experts. That's such an incredible opportunity that like all the people we spend our time with are also experts and they're willing to talk to us about it.

It's this a little bit of a superpower, I think, for doctor founders to be able to really get a lot of rich feedback. But you want to know like are we building this sort of a solution or this sort of a solution? We know what we're trying to solve for, but again, thinking very broadly before you converge on what becomes your core product.

>> Absolutely. I think, you know, as physicians, we're so used to talking to patients every single day. You know, every single person that comes into your office or, you know, I see pre-op, you know, let's let's take a deep dive, let's, you know, approach you, let's ask you all these questions. We often forget that we can use that superpower for our colleagues. And everybody loves to I hate to use the word complain, but if you ask somebody, what don't you like about something? I promise you, they will tell you. And that is the ultimate kind of gold in this, um, discovery process, which is, you know, tell me why you're frustrated. People I promise you will tell you, but we often don't ask each other enough. We assume that, "Oh, if I'm having trouble with this procedure, you must be an expert, right?" Like it's almost you feel silly saying, "Well, is it hard for you, too?" Or, you know, and why? And so, I think when we kind of take a moment and take a step back, we realize that everybody really wants the best thing, which is to make our lives easier, and everyone's really willing to share if you're open to it. >> I hear two things from what you just said that I think will really resonate.

Why feedback feels different for doctors

One, um we I I was terrified of feedback throughout my training. We train in an environment where it's like super competitive and you're being compared with each other and you are doing things that are unbelievably hard emotionally, physically, mentally, and and and you are sensitive about the fact that you are new to it and I I remember just being I mean, if anyone said, "Hey, I want to give you some feedback," I would like my gut would like churn, you know, it was so anxiety-provoking cuz I didn't know who I was. I didn't feel established in my field. I was worried that, "Oh my god, did I kill someone?" Like, what what's the feedback? But, as entrepreneurs, feedback like I want everyone to tell me all the things that are wrong with my idea so I don't waste like six figures building the wrong thing. It is so valuable to get feedback and you need to get it early, you need to get it often, you have to have a process for incorporating it, and it's it's part of it's one of the core parts of design, but we as doctors are probably more prone to like resisting feedback. And then the other thing you said, which was like admitting when there's a problem or identifying when when there's room for improvement, like you could tell your colleagues with a ton of humility, like, "Man, I sometimes have trouble with central lines." And wouldn't it be cool if we made a solution that would make this easier and safer because I had this one particular problem. And by opening up that discussion of admitting that you're not perfect, you're not perfect 100% of the time, you don't have every single procedure go immediately the way you want it to, it can open discussion for ways to improve the care that we deliver because we all know we have a long way to go. We have many many opportunities for improvement in the way we deliver care to patients. So, it takes a humility and a willingness to accept feedback and a willingness to accept that we don't we don't know everything. >> I think there's also this wonderful thing about entrepreneurship when you realize it's not about you, right?

You can remove yourself from the problem. Like, I'm talking about central line placement. I'm not talking about my self-worth as a physician or my level of skill. We are very much focused on the objective problem. And once you take yourself away from it and you can look at it, that's when the fun begins because you can really engage with people and you can learn, but it's not a reflection of you as a physician. This isn't about your patient outcomes. This is about an objective problem that you're trying to solve. >> Absolutely. Um and I think that a lot of us will see the problems in the health care system and the vast majority people will feel um a little dis- heartened and maybe complain about it or just feel bad or think, you know, carry some of I mean, we call it moral injury when we're carrying some of the burden of like the system failing our patients. And And I think there's a small cohort who actually want to do something about it. So, people who will say, "Here's a problem. Wow, that's an opportunity." And I think it takes a different type of thinking.

>> I think it's also hard to that point feeling very overwhelmed by the system. Yes, there are all these problems. If we let these problems stop us, we'd never get out of the out of bed in the morning, we never show up to work, we never get a pass to our first patient.

There are so many things that we need to tackle that it can be often hard to figure out, well, what's the one thing I do want to solve? And then when I do pick something, where do I even start?

Building the ugly first prototype

We joke that we made our our MVP or a minimally viable product and we joke that we should put the M in the MVP. It should not look beautiful. Like when you're first brainstorming, you should it should look really ugly. It should cost $5. It doesn't need to be a beautifully created product to get some really great feedback from people, to validate an idea, to understand if this is something you should approach, um and to start creating solutions that you don't have to have something perfect to engage with other people. And I think once you get over that part and you realize I can make something from the supply closet that I cannibalized or I, you know, took something from Amazon and attached it with a glue gun and this whole thing cost $5. That the process becomes really fun because it doesn't have to be so perfect and you almost forgive yourself for not being beautiful at the beginning. But that's what you need to start gathering that information to start making it about >> and and kind of designed it that way, and then there was one that was with clay, and then there was one 3D printed. And so he was like showing it to my kids and and they were looking at how it progressed into what is now actually a very beautiful product. Like it's a very pretty looking thing with tech integrated and but it was a tin pan. >> That's where you should start. You shouldn't spend all your money creating beautiful prototypes. Like I think about we did this project in business school where we had to create a new app um for a bank in Peru.

And we didn't spend money making the app. Drew out pictures on a piece of paper and our question for people was if I showed you this picture, would you know where to click to get to the following screen? You know, if you are a business, if you're an individual, if you want to save, if you want to buy a house, how are you interacting with this? And that was magic marker and and paper, but it was so valuable to realize this is really confusing to somebody or it's not confusing, but then we should go with that design, but don't spend money when when you don't have to. Especially in the beginning when you're trying to kind of when you think about that double diamond like which direction should I go in? You can get a lot of information without spending any any money or raising any money. >> That's my number one goal for early stage founders is to teach them how to create assets for themselves without putting in capital. Because a lot of people I actually I remember Oh man, I've talked to so many doctors that are starting things or have started things and um I mean I had one that was like, "Yeah, I've already put you know, six multi-six figures into it and I don't really know where it's going." And it's like "Whoa, we got to make a plan on paper. Let's make a model so you can project out where you're aiming to go. Get some advice in here, whether it's like a network connection or someone who does a lot of this to see if you can compress that timeline, but creating an operational plan of like, you know, what sort of capital would be needed to make something like this, instead of just growing as this individual one two thing and and spending a lot of money because you don't have a plan. The second thing I've heard is people say, well, I got a quote from a developer. I have this idea for this app. I'm just going to make it and I think it's going to be like 30k and but I got to put myself out there. I got to I got to get something going and I'm like, oh my god, no, like first off, now we have AI and we can vibe code prototypes, but like what you're describing, what you built on that piece of paper with a magic marker is like a wireframe.

Wireframes are like a visible depiction of what the technology will ultimately look like. Build that. That is free. And you're going to be like, here's a piece of paper. Pretend this is a phone. Where are you going to click, you know? And you can get feedback and you did that with a piece of paper and a marker. You didn't build the app and development even even in the age of AI, development costs money and time. It is way more accessible, but there's so much about product development that I think it can be so helpful to have someone in your influence who knows about this whole design process. So, I think that's incredible that you were able to bring that all together. So, what what did you end up making? >> For that project or >> Yeah. Or for the your first your first >> startup. What What was the device you made? >> Fastlane. So, we now have a we you know, the the company has grown. We have a proper engineering team. We have um like an advanced 3D printed model that works, but in the very beginning, the first thing we made was we took last, you know, we took things from the supply closet and we put it together with a glue gun and we cut an IV like an angiocatheter and we took that needle and we cobbled it together and that was our first product that we tested on a cup of water. And so there have been many stages to this, but that let us try like what's the right handle shape for somebody? Is it intuitive for them to pull something? Do they want to push something? You know, how do we think about interacting with this device? And so we started with you know, things we cobbled together. We were able to win some grant money from that.

From supply closet materials to medical device

Then we're able to hire a team of engineers. We got some free pig experiments and so we've been able to grow relatively cheaply by convincing each person at the next level, like the grant committee for example, or the um that who was sponsoring a workshop that this device would work in the next stage and so that's kind of how we move through it relatively efficiently. >> And can you tell me a little bit about how you navigated the pro- I mean, it sounds super intimidating to make a medical device. It sounds like there's a lot of compliance things for that. So can you walk me through how did you figure that out?

>> We asked people. Right? Very simply. I'm not an expert It sounds silly, but I'm not an expert and we thought to ourselves, who do we know who's made a medical device before in our network that can help us kind of navigate the process. So what that looked like was I was at a hospital for my residency and there was a tech transfer office and so we asked basically like how do I think about navigating this process? Found advisors at the hospital who didn't know me but had made medical devices and I messaged them and said I'm a resident interested in your device, can I come talk to you? And people were very happy to engage and tell me about places that they have succeeded and places that were frustrating and we started that process just by talking to everybody in our network trying to learn more, and understanding kind of the regulatory process and how to navigate it. >> So, you had something you didn't know, and you asked people until you found someone that did know.

Navigating medical device development

So, it's just like calling a consult. >> It's just like calling a consult. And part of this process is you may ask somebody, and they may say, "I don't know the answer to that question, but and this is always kind of best part, you should talk to my other friend, right? And so, when we think about the different nodes in a social network, it's maybe not the person your immediate circle, but it's often one person away from that person.

I think that's where it becomes really powerful. But, if people don't know that you are interested in making something, looking to solve a problem, looking for information, they can't help you. And so, you need to put yourself out there and say, "I don't know something. Do you know this? And if not, can you point me in the direction of somebody who does?" >> It's such a great example of how much you can do with that founder energy and grit, and I think what do we call it? Sweat equity, where you're just trying to figure something out. It sounds like a lot of work, but if it's about a problem that you really care about it, it sometimes it doesn't really feel like work. I think it feels creative, it feels connecting, it feels like the whole process is called discovery. It's a discovery process, and that sounds exciting compared to like going and working a shift. You can keep working your shifts, but doing this on the side while you're exploring your concept, it I just want to give people permission to go explore their concept. That's how things start. >> It's exactly how things start. I think that's what we've my partner and I have loved so much about this process is it gives us so much energy. I think that especially in medicine, your job is to become an expert, which means you are doing the same procedure or seeing, you know, a similar group of patients over and over again.

And you often may not feel like you're making progress day to day because it's like it's another appendectomy, right? It's another It's another procedure that you're doing again and again to become an expert. But the feeling of making progress in this other area has been extraordinarily energizing because you're like, "Oh, today I figured out the handle shape. Today I connected with somebody who taught me something new." And you ultimately feel like that part is moving forward and you're solving a real problem. Nothing gives me greater joy than when a colleague texts me and says "I had a really difficult central line today. When's your product coming on the market? Or can I test it? Or where are you in that?" And it reminds you that you don't live in this bubble of just you and your patient, that what you're solving for really is making everyone else's lives easier for physicians, safer for patients. And I think that's been almost the best part about this whole journey which is kind of taking yourself away from the day-to-day of medicine and thinking about it on a bigger scale.

>> And it can be really exciting and fun to create. I don't think we're we we shouldn't be creative with our clinical jobs. We're following rules and regulations and compliance and protocols and um and that's how we do take care of patients. We don't want to be going off the grid, but when it comes to solving identifying problems, solving them thinking of interesting ways to to solve them, getting out your glue gun, finding someone who has gotten a device patented before and learning about the process and then having honestly to have AI as like a synthesis partner of as you're like looking at all these different inputs that are kind of jumbled and confusing to you too and and even using that as like more of a strategic partner to synthesize the information. I think um you know, we didn't have that when I was starting my company. >> Yep, I'd say I would have loved to have AI in the beginning, but we didn't. We know we we do now.

I think as we think about kind of having AI as your thought partner, um it's really quite powerful and really exciting to think about how do I get through so much more information really quickly, especially for areas where you as a physician may not feel as comfortable so thinking about like what is the company landscape.

Pull up, you know, trying to think about your total addressable market. Give me the top 10 transactions of this year in this area. You know, trying to understand where the market's moving.

Um understanding what other companies kind of are doing what you're doing. Like the ability to pull that in. I used to do that as an investment banking analyst. It took a lot of time and some really expensive databases to go through that information and now that you can have that at your fingertips when you're trying to match, you know, what is my clinical problem that I'm solving with what is the business problem that I'm solving. Suddenly you have like a free analyst and a free consultant in that you figured out. Yeah. >> Absolutely. The one caution I would give people when they're using AI to help do discovery on a concept is that it has a very high um propensity to do the convergent phase.

Using AI as a founder thought partner

So you have to specifically tell it when you're in the divergent phase of gathering and researching and so you want it to be very comprehensive. You you need to use language to tell it like I want you to do a deep research on on this. I want you to come up with a plan for all of the different things we should consider looking at cuz you're building yourself like a little mini database, right? So if you just ask it, what do you think about my business model for this vascular access device, it will go like blip. Like it'll maybe it'll it'll probably give take whatever you gave it and it'll maybe like do the large language model thing where it's just predicting the next word and it's just kind of making words flow together nicely and it didn't actually search anything. And so using good prompting especially when you're in this design thinking phase where it's like what are all the different sources I could consider? Who are all the different people I should think of? What are all the other companies doing this?

What would it what would a venture firm do when creating a new concept? How do I hit all of those pieces and parts and and make it go really expansive and generate a lot of artifacts about that and then go converge. Cuz I'm a great brainstormer, I'm a visionary, I I'm very good at the divergent phase, but then I end up with like 100 things I want to do and I I actually use AI to synthesize, simplify, converge on here's the core thing that we've we've created this whole database of divergent thinking and now we're going to bring it together. So it does really well at that. So it's funny cuz I I agree with you. I like I had like a whole team of investment bankers and analysts and market analysts and very very very smart people that contributed so much to our concept development, but it's never been

a better time to be a solo founder than now. I think one other thing that you touched on before our call was something that we both hear doctors saying a lot which is I'm just a doctor.

What are your thoughts on that? >> I laugh, you know, every time you say it I laugh. I'm just a doctor. I think we forget not only the clinical not only the clinical information that we know, but thinking about who we have had to be on this process to become a doctor, which is we are so comfortable with learning new things. We talked about third year.

Every month you had to be an expert and you had to change your rotations and you had to learn so much so quickly or when you're a pre-med you take all these courses that have nothing to do with each other, you know, physics you know, one week and then organic chemistry the next and we're so comfortable learning new things but somehow when it comes to the world of business we suddenly shut down and think, "Oh well, it's not medicine. I can't possibly learn more about this or I can't be an expert." Meaning meanwhile we've been on the learning curve since middle school, right? Like we've constantly had to learn new things and we just forget that we've actually honed those skills and so whether it's learning about financial statements or a new vocabulary and how to talk to a banker or thinking about, you know, what's my market or how to market something we've actually honed those skills over and over and over again.

We're just not accustomed to doing it outside the world of medicine but if I told you these were things within medicine everyone would feel very comfortable saying, "Okay, well it's something I have to learn.

Why u201clu2019m just a doctoru201d is the wrong frame

You know, I will take a test on this. I will become an expert." But suddenly when there's no test and no road map and we're using different language we suddenly shut down. >> I agree with you. That's part of why I've been doing the work that I'm doing cuz I feel like there isn't a fellowship in how to inter-industry. There is not a board certification that you can take and all of these inspiring founders that I've interviewed and worked with I I think we've all taken a different road map or pathway into this space but I I kind of want to just activate all the people that that really do have this sort of creative thinking, that really do have the desire to build something um and help them to realize that there are people like you, there are people like me that are accessible, that that want to help other founders. There are so many pathways Like you said you you went and you talked to people who had patented devices before. You just find them. You go find them and you ask them. And not everyone will say yes, but I think that the point is the pathways sound intimidating because it's not like known to you in the medical field. It's not something that you have already been training on, and and it feels different. But yes, I believe that if you could learn organic chemistry, you can learn how to read a financial statement.

>> Absolutely. The other part of this is I've been so pleasantly surprised with people's responses when I do reach out. Whether it's a warm intro or, you know, a literally LinkedIn message, "Hi, we went to the same college. Can I talk to you about something?" Nine times out of 10, people actually respond really positively. And I think we are always so worried about how we're going to be perceived and asking for help. But mostly people really want to be helpful. Not everyone's going to be helpful, but overwhelmingly people have been kind and warm and encouraging um in this process. >> Yeah, I think in venture people thrive off of connecting people. So if they can't help you, they'll want to connect you with someone else. But it's so wonderful to talk to you. And honestly, when you talk about outreach, you reached out to me about being on this podcast, I think. That was just such a great example, and I read your profile, and I was like, "Oh my gosh, she's exactly the type of person that I want to interview." Um and I love that you shared your story, and I hope that others are inspired here. For those of you who are listening, we are running our first cohort of the Startup Physicians Incubator Program this summer for physicians who are interested in becoming founders. We have applications open now, and we will be providing a guided process and a lot of network access and AI tools and other things needed to build your prototypes and your financial models and your product roadmap and everything needed to get your concept off the ground. So, if this activated anything in you, if it made you inspired, please feel free to check out Hillary Gallan. She is on LinkedIn. We'll put her websites and her LinkedIn in the show notes. And thank you again, Hillary. We really enjoyed having you.

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