Dr. David Haynes:

Welcome to ENT in a Nutshell. My name is David Haynes and today we're here with Ashley Nassiri to discuss design thinking. Ashley, thank you for being here.

Dr. Ashley Nassiri:

Thanks for having me. Excited to be here.

Dr. David Haynes:

Today, we'll be discussing design thinking, which is critical in caring for patients. We'll go over important principles of design thinking, why we need to incorporate it into our patient care and into healthcare in general, and how we can practically apply these both in research and everyday clinical practice.

Ashley Nassiri is completing her residency in otolaryngology head and neck surgery and is off to begin a fellowship in otology and neurotology. But prior to beginning her residency in otolaryngology, she completed an MBA while in medical school. She's used the principles that she learned during her MBA throughout residency, applying these principles to multiple clinical applications.

Now to the listener, you may think this involves doing deep dives into accounting and finance and spreadsheets, but there are almost always someone more capable in a medical center in these areas than we are as physicians. It's the other principles learned in an MBA, such as operations, improvement in operations and leading teams and design that are more likely to be applicable to what we do.

In fact, a poorly designed and functioning clinical process affects us, our lifestyles and our patients. And I'll argue that no one is better to design and improve a clinical process than we are. Now, Ashley is here to tell us how to do that. So we'll begin. Ashley, what is design?

Dr. Ashley Nassiri:

So broadly speaking, it's really just a course of action aimed at changing an existing situation into a more preferred situation. Now you can interpret that in several different ways. It's a choice. It includes an opportunity to build in some creativity in developing your options and deciding how and when to use them. Designers typically have to envision, evaluate, communicate, and execute something that will be in existence in the future, but currently is not.

And so it does require some creativity and understanding of the current situation. When we think about it more practically though, it's something that we do on a daily basis. We think about research projects, we have ideas and we have to develop them in a way to make something that does not yet exist. And design thinking can be applied to essentially any process, including developing products, systems, business models, really anything you can think of.

To kind of solidify some of the abstract ideas we're talking about today, we can give examples throughout the podcast, but one of the basic examples that we always mention in design is something that we see every day. Design thinking was used to develop door handles. Specifically the handles you would see in a commercial building or a hospital. So depending on which side of the door you're on, you should be able to tell whether you're supposed to be pushing that door or pulling that door.

And the reason why you know that is the way that the door handle was designed. And if you have a U-shaped door handle in front of you, you typically think that you're supposed to pull that. If you have a flat bar, you typically think that you have to push that door. And that may seem like something obvious to you now, but someone had to come up with that idea to encourage you to do the right thing so you can move on with an efficient day.

And so even with something as simple as that, you can see how impactful design can be. And in reality, we can use it to direct behaviors and encourage desired outcomes if we use it properly.

Dr. David Haynes:

Why are we as physicians willing to take on significant medical issues? Large tumors, spreading cancer, severe hearing losses that patients may have. Yet, we shy away from trying to correct even the most trivial operational issues, such as turnover, first case starts, et cetera. We seem to compartmentalize them and think that we'll take care of the patient in the OR, in the clinic. And those people in suits are go going to do everything else.

Yet, as we know, these designed operations are not effective. And instead of trying to correct them, we tend in my generation just to complain about the process instead of fixing it like we do in medicine. So why is design thinking important in this regard?

Dr. Ashley Nassiri:

Yeah. So to address your first observation, I do think that physicians tend to shy away from managing design issues or operations in the healthcare systems they work in for several reasons. First and foremost, we're incredibly busy at baseline. And so we tend to focus on the things that we already know how to do very easily. And that's take care of patients, operate and do research, but something like design thinking is not hard to learn. And it's something that you already do, but you can do it more thoughtfully and apply it to other aspects of your life.

And like you mentioned, we're usually best poised to improve the systems that we work in because we really are the ones that understand the inner workings. Sometimes I do think that I've done it before. I kind of assumed that hospital administrators were there for a reason and they do have the capacity to help us improve the system around us, but certainly they need input from the consumer.

And so we'll talk a little bit more about problem design and consumer insights, but I do think that's one of the reasons why sometimes we're not as involved. Obviously when we think about why design thinking is important, it's one of the best ways to really understand an issue and design solutions that are effective. And so that's one of the things that we'll talk about today is how to implement that and how to incorporate it into your daily life.

Dr. David Haynes:

Can you expand the concept of empathy? And we kind of have in our mind, that's sitting at the patient's bedside holding their hand. Yet, isn't it about trying to make their life better, the patient experience better? Can you expand on the concept of empathy?

Dr. Ashley Nassiri:

Yeah. And I think you actually said it best previously during one of our conversations. Throughout medical training, you're right. We have been taught that empathy is holding a patient's hand at bedside and walking them through a difficult illness or being for them as support. And I do think that's certainly a very important aspect of empathy, but design is almost an active form of empathy. And that's because it seeks to understand a problem and to actually resolve that problem through very thoughtful design, inspired solutions.

And design thinking really just requires that a physician truly understands the patient's situation, their problems and motivations, barriers, needs and wants before thinking about potential solutions to

address these. I think it's a little bit more challenging perhaps to take this role, but they can actively affect change and potentially be more impactful for patients.

Dr. David Haynes:

It's even about combining appointments and optimizing their trip to the medical center, about their parking, about reducing the number of trips that they make. It's very, very important.

Dr. Ashley Nassiri:

Yeah, I agree.

Dr. David Haynes:

Can you define some of the terminology and lingo frequently encountered in design thinking? I think as we go into a project or a team project, we can get lost and our opinions may be ineffective. Can you share with us some of the terminology that we would expect to encounter?

Dr. Ashley Nassiri:

Absolutely. Lingo is important. Not because it helps everybody understand what you're saying, but if you can speak design, you gain some credibility in the business world as well. So they're just a couple of things that I'll go over.

First off, we use the terminology or the term pain point and that really is to identify what the problem is that you're trying to address. And so before you start to design a solution to something you really need to define the problem that you are trying to resolve. And we often refer to that as the pain point. I like this term because it emphasizes that the problem you've. identified has to be painful, annoying, or really just a nuisance to the consumer. And it emphasizes that your problem needs to be important to a person or a group to warrant spending your time working on a solution.

Another term that we use is consumer or a product user. This is usually an individual group or, or even a firm who's experiencing the pain point and stands to benefit from the newly designed solution. In healthcare, this usually refers to patients, but it can also refer to physicians, hospitals, staff, employees, patient families, et cetera depending on how you're framing the problem and what problem you're addressing.

Lastly, stakeholders are critical when you're designing solutions to the problem you've identified. These are people, groups, or firms who have an interest in the problem that you're addressing or maybe affected by the implementation of the solution, but they're not necessarily the consumer. So these people do have opinions, desires and needs as well, and your decisions may significantly impact them. So they need to be taken into consideration. You need to evaluate their desires, partnerships and working with these stakeholders is critical to enacting a successful solution to the pain point.

So just to kind of go over everything, we'll give a basic example. Let's say you run a clinic and you've noticed that some of your more elderly patients with walkers have a hard time navigating from the waiting room to the exam room, which is clear across the building. And you've talked to some patients and they agree this is a problem, actually prevents them from coming to appointments sometimes. They would like a change to improve the situation and you decide that you want to move the waiting room closer to the clinics.

So in that very straightforward example, the pain point is walking across the building to their exam room. The consumer are the patients with the walkers or folks who have difficulty with

ambulating. And there are quite a few stakeholders in this situation. So the physicians, nurses, department administration, the front desk administrators who check the patients in. Essentially anyone who's affected by this change that you want to make is going to be a stakeholder.

Now I'd like to talk a little bit about this quick solution that we came up with, which is moving the waiting room closer to the exam rooms. It's important to point out that this was a very quick solution we've come up with and we've jumped into and committed to this already because we've done something insidious in this example, just to throw you off. We have thoughtlessly determined a solution for the problem and we've decided to move the waiting room.

And that's not a small feat if you think about our clinical space. Usually it's not easy to find open space. And if you need to switch something around, you may need to move someone else out of their space to make your solution work. And so we will get into solution development a little bit later in this episode, but one of the main points to take away today is not to jump to a solution without brainstorming a lot of different options.

For example, in this case, rather than moving the waiting room, you could install a moving walkway. You could use some kind of transport vehicle to move people. You could eliminate a waiting room altogether and have folks check straight into the exam room.

Now these might not be the ideal solutions, but it is important to emphasize the role of taking a step back and realizing that some thought and creativity needs to be incorporated into your solutioning brainstorming, so that you can find an answer that may be more feasible and desired for the consumer and the stakeholders.

Dr. David Haynes:

So what are the different ways we can use design thinking and in otolaryngology head and neck surgery?

Dr. Ashley Nassiri:

Yeah. So that's a great question. I really do think that prospects are generally endless. In medicine, we have a very unique opportunity to interact with our consumers on a daily basis. Once more, our patients and our colleagues are very open with us. And in some ways, that makes understanding their challenges and their needs a little bit easier. Most firms who want to do consumer evaluations and better understand their problems, have to conduct focus groups and interview their consumers.

And they really need to go out of their way to identify who their users are. If you think about a company like Microsoft that designs PCs for their users, they don't see their end users unless they design some kind of concerted and very intentional effort to work alongside them. But as physicians, we see our patients every day and part of our job is to ask them how they're experiencing their healthcare. And what makes it easier is that most patients will offer up opinions and issues on their own, as they love to talk about how their experience is going.

So we're basically set up perfectly for incorporating design thinking and implementation in healthcare. And specifically in otolaryngology, we can use design thinking to apply solution development in improving treatment options for patients. Designing scientific studies that take consumer needs into consideration.

And this is a big one, but obviously improving healthcare processes for patients, physicians, or anyone else who works or interacts with the hospital. As a resident, it's very easy to identify inefficiencies or issues within our system, even on a daily basis. And I think that design thinking would offer us a method to evaluate these issues and create solutions that might offer improved outcome for stakeholders.

Dr. David Haynes:

So what is the overall process for design thinking when we apply this to a specific question?

Dr. Ashley Nassiri:

Yeah. So broadly speaking, the process mirrors that of a scientific investigation. So first you have to research and understand the problem that we're aiming to address. Framing the problem is probably the most important part of the entire process. Because a well-defined, highly researched problem will lead to the most successful answers. After you've well-defined and well-framed your problem, the next step is to develop, innovate and create potential solutions. And we usually do this through brainstorming sessions collaborating with folks outside of our field and developing prototypes to address the problem.

Next, we implement whatever solution we have decided upon. And sometimes that doesn't work right off the bat. We have to go to an alternative solution that we brainstormed. Finally and this is very often overlooked is outcomes management and evaluation through metrics. Importantly, once we settle on the implementation of a specific solution, it's critical to continue to monitor outcomes with appropriate metrics.

And remember that adjustments and even pivoting are expected parts of the process. Even after thorough research design and prototype development, there are practical issues that sometimes play out in real life that we cannot foresee and adjustments frequently need to be made to address those issues.

Dr. David Haynes:

So we know problems and barriers are all around us and we know every process can be improved. So how do you get started?

Dr. Ashley Nassiri:

Good question. I think starting is probably one of the hardest parts, but first you need to identify a problem and then you need to define it. This can be harder than it seems, but it can be the most important step. So usually ideas will come from observations in your system. For example, you may see that patients are frustrated with a specific part of their healthcare experience like waiting too long for a referral to be scheduled, or that an answer to a specific healthcare issue does not exist such as a medical treatment for tinnitus that's effective for everybody.

Usually when you notice things in your daily life, you can become passionate about them. And I think those are the problems you need to go after, something you really care about. Once you have an idea for a specific pain point, you might want to address, the next step is to explore it a little bit more. I think the best way is to actually just go directly to the consumer and learn more from them. Getting consumer insights without making assumptions about why they feel the way that they feel is very important.

And I'll give you an example of an assumption that we might make and how wrong they can be. So this is probably something that has happened to most physicians at some point. Say you have a specific patient that frequently misses clinic appointments. In general, we might be quick to assume that they're disorganized or they forget about their appointment or that they just don't care enough about their medical problem to show up to the appointment.

But sometimes in reality, that patient might have a car that frequently breaks down on the long trips to the hospital or they can't make their appointments reliably because of a transportation issue. If

you go along with your first assumption, you may quickly give up on that person. But if you understand the situation and realize this comes down to a transportation problem, you might resolve the entire thing with a bus pass voucher.

So this is a pretty straightforward example, but I think it touches upon some behavioral science theory about assumptions, about personalities versus situations, which is a whole other podcast series in and of itself. But we can very clearly see that the initial assumption we make leads us down a very incorrect pathway. And so to understand your consumer, you need to talk to them, you need to take notes and really try to limit your bias from interpreting the evidence that you're seeing.

If the question is one about healthcare system process, go and watch the process, take a notebook, take notes, timeout each step, make a process map, take on the role of an anthropologic researcher and learn about your subject. I like to take some time away from things to let all the ideas meld together. I think when you step away from a project for a few days and you come back and review your notes, you might discover some new trends or different insights that you hadn't initially noticed.

And above all else, try to leave your assumptions out of it. It's very challenging to do this. Some assumptions or some biases that we have are so ingrained in the way that we think that we don't even realize we're using those to interpret the data. I've learned the hard way that whenever you think that you understand a system, there's always something more to learn and frequently your assumptions lead you to the end of your search a little bit too early.

Dr. David Haynes:

How do you know if your problem is a good or meaningful one that would justify the amount of work that you'll put in to correct it?

Dr. Ashley Nassiri:

That's a really important question. So I think this comes back to understanding your consumer or in our case, usually the patient or the physician involved in the healthcare system we're addressing. If the problem is meaningful to the consumer, then the problem is a meaning full one to address. Now that being said, it may be worth your time to address problems that are meaningful to more than one person so that your solutions can make a bigger impact, but really it comes down to what the consumer needs.

And sometimes when we dig into problems more in depth, we realize that they're part of a bigger network of issues and addressing some of those may alleviate the downstream effects. But overall, if solving the problem for someone or some people improves outcomes, then you've already identified a meaningful problem and the rest is just scale.

Dr. David Haynes:

Once you've defined the problem, now what? We can identify these problems. You said they're difficult, but then we kind of get stuck with that initial first step. Can you help us with that?

Dr. Ashley Nassiri:

Yeah. So after you've done some research and you feel like you have a good understanding of the issues around the problem and the consumer involvement, the next step is to develop many potential solutions. And you'll know that I said solutions with an S, that's incredibly important. During this phase, multiple solutions with a broad range of options are developed. And this is one of the hard parts for me personally, is involving that creativity and really trying to think outside of the box. So there are plenty of books on how to effectively brainstorm how to think outside of the box.

One of the things that I like to do that I think is helpful is bringing in other collaborators that work outside of medicine. That's always a really easy way to think outside the box, just because those folks have a completely different perspective than what used to. And they're not constrained by some of the same assumptions and ingrained ways of "how we do things in the hospital."

In the past, we've worked with design school students, even pluripotent med students who haven't been trained fully through residency. Business school folks are wonderful, they have very different skills that we're not familiar with and they can bring something new to the table. And most importantly, we ask our consumers what they think the solution is too. And that can kind of go back to the initial step of interviewing and understanding our consumer. They usually understand the problem best and they might actually have a good solution in mind already and not know it yet. So it's always easy to ask them as well what they think.

One easy thing to do as well as to look at other fields and apply their solutions to your problems. So this is one of the best ways to innovate in your field is to take something that already works and just bring it into ENT for example. If there already exists a solution that might work with minimal tweaking, then you should use it. You don't lose any points for a lack of creativity there. There's no need to make things harder than they need to be. Tailoring solutions to your problem can be effective.

And that doesn't just mean to look over at orthopedics, although that might be a possibility, but looking at different industries and understanding how they solve similar problems might be useful as well. Our healthcare system is complex, but so is manufacturing. And maybe we can take some of the lessons they've already learned and skip some of the painful errors they have made to come out on top.

So once we collaborate with different folks, look at different industries, brainstorm, and we've created many potential solutions. We can select one or a few to test out using prototypes or small implementation trials. But importantly, design metrics built into the solution is an absolute must. And so we need to be able to measure the progress or lack thereof and the level of success with any solution we come up with.

Dr. David Haynes:

I think we all have family members who have gone into medical centers with a problem and then they always call us as physicians, and tell us everything that was wrong with their care delivery. And yet they can see it. Yet, we don't tend to be concentrated on constantly improving this. And so what's the next step?

Dr. Ashley Nassiri:

Yeah. So the next step is implementation and that can be challenging in its own way. It does take a lot of planning in some cases, depending on the scale of your project. In the case of implementing a significant process change, a trial runs are really important. So I'll give an example. We've been working on a project that really just turns the Cochlear implantation workup surgery and post-operative process upside down and compresses everything into a single day of in-person visits and surgery.

And pushes a lot of the remaining follow-up to telehealth. And that's pretty different from the way that we do things now. Aside from pushback from folks who are used to doing things a certain way, it can be difficult to implement something on a bigger scale. So getting some buy-in from the folks that you're working with, having them involved with implementation is absolutely critical. And getting everybody on the same page and excited about the project is important for success.

One of the things that we like to do is doing a trial run when we're implementing something big like this. And so rather than having the first test be on a patient, one of the investigators can act as a

trial patient and literally walk through the day of appointments, follow-up telehealth appointments, et cetera. And sure, he can say, "Well, it'll probably take seven minutes from them to walk from their MRI appointment over to the clinic." But why would you introduce that risk of error when you can just test it easily?

Plus you might find that on that walk, there are several hallways and one wrong turn turns into a 30-minute detour and that could derail all of your following appointments. And so when you do trial runs, you might realize, "Hey, maybe we need to print out a map for the patient or even better, maybe they need a coordinator to walk with them to their appointments or chat with them on the phone if they need." So for that reason, test runs are critical before you actually implement.

Implementation depends on what you're working on, but making sure that you have everybody on board, like we mentioned, is really important for success. Finally, metrics. I'm probably going to get on a little bit of a soap box here, but this is incredibly important. Everything comes down to metrics. So you can design an elegant solution to a problem that in theory addresses all of the intricacies of the issue at hand. But if you don't have metrics and you're not evaluating how the consumer experiences the new solution, you really don't know where you stand with your level of success with the project.

And we are overall getting better about quality metrics and medicine. But if you pay attention, a lot of the metrics we use for healthcare outcomes are usually used because of ease of use rather than actual efficacy of outcome measures. The beauty about design is that you really understand the problem you're addressing by the time you're implementing a solution.

And if that is the case, you already should know what metrics you need and usually how to measure them. If not, there are several mentors and even consultants that can help with metric design. And I do think it's important enough to make sure that you have efficacious metrics in place before you start.

Dr. David Haynes:

When I do ear surgery, I don't mind seeing a lot of things wrong because I know I have a lot of things I can fix and the patient, therefore, a lot of things I can help them with. Yet when we do these trial runs, we're expecting them to be perfect the first time. When in reality, you like to see a long list of things that you can improve. Can you comment on that?

Dr. Ashley Nassiri:

Absolutely. So I think it's relatively unrealistic to expect something to go well the first time. From our personal experience with our Cochlear implant program, we've been making changes over a years and you've been involved with that before I even was. And so I think those are all opportunities. One, to better understand what you're trying to fix. And two, to better understand the system within which you're working.

And so if you're able to make these adjustments along the way, you're really going to come out with a better product in the end. So I think there are good things ultimately. And I think if you're not finding them, that probably means you're not critiquing your product adequately.

Dr. David Haynes:

I agree. It's a mindset, isn't it? You're going to do a pilot or a trial run and say, "We're going to see all kinds of things that are wrong that we can improve." And they identify the opportunities rather than hide them. So for those that are new to design thinking, what are some of the additional resources that we can assess to learn more?

Dr. Ashley Nassiri:

Good question. So there are a ton of books, articles written about design, and I'll note that I have no personal stock in any of these. But some of the texts that I really enjoy have been written in healthcare, but also outside of healthcare. One of the more recent ones that were published is called Health Design Thinking by Dr. Bon Ku. I think that's a pretty good place to start. It's a really nice overview of what health design thinking really is and how to implement it. I think that gives you enough tools just to kind of get started definitely with the basics and even something more in depth. It gives you good examples as well.

Some of the texts outside of healthcare I think are even more helpful in some ways in that they start to train your brain to think differently about problems and how to develop solutions to them. One of my favorite texts is written by Alexander Osterwalder and it is titled Business Model Generation. And this text actually just gives you a printout sheet to fill out with details about the problem you're trying to address, stakeholders, partners, revenue, streams, et cetera. And it's mostly focused on designing a business around your idea or solving the problem that you're tackling. But I think just having that mindset is useful, even if you're not trying to actually design a business.

Harvard Business Review and the New England Journal of Medicine catalyst journals frequently published articles about design and healthcare as well. And those are fantastic resources. One thing I didn't know about until recently was that we can access design groups, which are more frequently being incorporated into academic medical centers. Many institutions have designed committees. And sometimes if you're lucky enough, may even have design labs, either as part of the hospital or the business school.

Design folks love it when you reach out to them for collaboration, whether it's for the long haul or even just some ideas about how to get started. And so I think if you take all of those resources into account, you have an easy way to get started. And in general, folks get really excited about this. So it's not too difficult to get your feet wet.

Dr. David Haynes:

Well, thank you for being here, Dr. Nassiri. Anything else you'd like to add?

Dr. Ashley Nassiri:

Yeah. Well, thanks for having me. This has been great. I'll probably just go full-fledged design on our audience and let my parting words via call to action. For most of us, design thinking is really just an extension of empathy. But instead of just understanding another individual's needs and challenges, it also calls for action. I mean, if we think about design thinking in that way, it becomes obvious that we need to incorporate it into most decisions that we make as physicians.

So the next time you notice an inefficiency at work, which will likely happen in the next 10 minutes, think to yourself, "Who are the stakeholders involved in this problem? What are their needs and wants? How is the consumer being affected and how can we define this problem in a way that addresses all of those issues?"

And if you start to think about things in that manner, you'll understand why things happen the way they do and that might lead to some insightful solution developments.

Dr. David Haynes:

Well, thanks Dr. Nassiri. This wraps up our episode of ENT in a Nutshell. Thank you for listening and we'll see you next time.