

Dave Murphy: Logistics that Save Lives

The podcast that shares what's behind delivering mission-critical logistics

Introduction:

Sometimes, the world of time-critical shipping can mean the difference between life or death. Blood. Organs for transplants. Human tissue. Cell or gene immunotherapies. Ensuring their safe delivery – getting them often from one side of the country to the other, where a hospital patient waits – brings global supply chain logistics challenges to a whole new level.

And you don't have to tell Dave Murphy. Murphy is Executive Vice President Quick Specialized Healthcare Logistics. For more than 30 years, he has seen – and managed through – the challenges and changes in global supply chain management.

But there are also questions:

- How has the evolution of personalized medicine impacted global supply chain logistics?
- What technologies are most important to know about – and rely on?
- And how do you deliver life critical organs or medical devices when natural disasters or virus epidemics seem to lurk around every corner?

Chris Riback: Dave, thanks for joining me. I appreciate your time.

Dave Murphy: Chris, it's a pleasure to be here.

Chris Riback: To start out, tell me a bit about the Quick Specialized Healthcare Logistics business. How do you run logistics when there is literally no room for error?

Dave Murphy: Well, the Quick Specialized Healthcare Logistics business unit was developed many years ago. It was shortly after my arrival at Quick in August of 1988. I represented most of the healthcare organizations in the Midwest. And over the years it grew into a commodity that we really, truly specialized in, representing the laboratories for pretesting of virology samples for transplant, the tissues that are procured for the tissue producers, the organs that are going to be used for whole organ transplant. And it really evolved from that very beginning, also representing the blood banks.

Dave Murphy: And we've continued to forge ahead finding new alternative means of transportation to represent that community because one thing is for sure that while it might be considered a commodity to some, this is a mission. Every shipment that we are involved with is a mission and it deserves to have the attention and the focus of a team that's dedicated to truly

act as a part of the healthcare and life-saving team that is engaged with each and every one of these shipments.

Chris Riback: Yes. I don't want to overstate things, so you correct me if I'm wrong, but you are moving and shipping and transporting materials that really are life and death.

Dave Murphy: There's no question about it. And the unique thing about that business model is you just don't know when it's going to happen. Unfortunately in this industry, there is no schedule. So you have to be prepared 24 hours a day, 365 days a year with the best, most articulate and qualified individuals around the clock on Christmas day, Thanksgiving, you name it, we are here in the offices representing that community.

Chris Riback: No business wants any room for error. Obviously every business wants to operate with as much precision as possible. But when you talk about no room for error in many cases, I mean, you mean that quite literally.

Dave Murphy: A large portion of what we do, and this is from top to bottom, we have to mitigate risk because risk can cause a bad day for many. So we're not only choosing the best transportation for a particular shipment, but we're also having to navigate around security issues, weather issues, health issues. We're reading in the news and we're living it every day, the Coronavirus. How is that potentially going to impact what we do on a daily basis?

Chris Riback: In listening to you, I'm almost separating these into two buckets of risks. There's one set of risks that, I mean, in all cases you don't know what the risk is going to be. But there's this one bucket of risks where, yes, you kind of know stuff happens. You know that there are weather problems. You may have a heads up on various transportation blockages or outages. And they're risks, they can come up anytime, but you kind of know those do occur. And then there is just the stuff out of the blue that you potentially couldn't have even expected. Maybe Coronavirus is one of them. But there's this whole other category of risk of these unknown, unexpected, unknowable risks.

Dave Murphy: Yes. A good example of that is, let's say a security breach at one of the major airlines. When that happens, and this is in the passenger terminal, when there is a security breach, they're traditionally going to close down the terminal. They're going to make every person in that terminal exit the terminal and reenter through security. Well, what happens with that is flights are delayed, all the ground activity of loading and unloading the flight could be disrupted. We have parcels that need to be on specific flights that very potentially won't get on their intended flight. So we have to triage this. We have to look at, okay, what is going to be the next available opportunity for us to get this kidney from point A to point B. So yes, it's a very good point and oftentimes an overlooked point because these things do occur and they occur at the worst times, trust me.

Chris Riback: I'm sure that they do. Take me through, give me a list. What are the types of products that you're moving?

Dave Murphy: The Specialty Healthcare Logistics unit routinely handles blood, tissue, meaning tissue that is not going to be used for transplant. So skin, cornea, cardiovascular, musculoskeletal, organs for transplant. So kidneys, livers, pancreas. We're not involved as much in the heart and lung because of the short cold time or the ischemic time on those organs. And then all the accompanying blood samples that need to be tested in a very quick and timely and effective manner pre-transplant.

Chris Riback: And I understand that, and cell and gene therapies that is a growing area that you work in, isn't it?

Dave Murphy: That community is remarkable. We were very fortunate enough to partake in that industry, from about I'd say 2006, 2007. And we were responsible for bringing the very first personalized medication, using dendritic cells to FDA approval. And we still continue to represent that client today. It is the new science that has everyone very interested. We're hearing stories of cure and it's how often in our lifetimes can we be a part of a therapy with the word cure attached to it? So it's really exciting for us.

Chris Riback: How much is that segment growing? I mean, my assumption is that as that's growing in the medical field, that that's growing as well within your area and the urgencies and complications must be growing as well because the more one does have something, the more moving parts there are.

Dave Murphy: Yes. It's without a question in my business unit, the fastest growing product that we represent. The early success of these therapies have brought many of the biotechs and small pharma organizations rapidly into the mix. And so we are representing many and it's very complicated. We're talking about an individual patient. We're not talking about a drug product that would be if successful dosed to hundreds of thousands of people. We're talking about a therapy that is designed to help one individual. So you can understand the chain of custody requirements just surrounding that type of shipment.

Chris Riback: As the world of personalized medicine has changed, has that necessarily affected your approach to managing a global supply chain?

Dave Murphy: Yes. There's no question. I mean the requirements that are necessary to represent that community are 10 rungs above just about anything else that we've ever done. It, almost to be honest, has given us the opportunity to retool a lot of the areas that were considered sustainable but they just were not good enough. So our ground network, the information that we share with the airlines is critical. I mean getting the airlines to truly understand the nature of the business that we're providing them to move these therapies from point A to point B. So the key is to try to get everybody on the same page, all the stakeholders in a particular transportation moment, getting everybody on the same page so that you can manage the expectations much better.

Chris Riback: I was just going to ask you about the expectations from the client point of view. Who do you think of as the clients and what are their expectations on you?

Dave Murphy: Well to be truthful, our client is the patient that is going to be receiving these therapies. Yes, we represent all of the organizations that are creating these therapies and manufacturing these therapies. And then traditionally those would be considered our clients. But there is one common denominator here with all of us. When we sit with these clients, these pharma companies, these biotechs, it is agreed that the client is the patient and that's the way we look at things. And that's the way my staff looks at things. Every single shipment is a patient's cells and it just changes the dynamic, the emotion in the Call Center. It really is a wonderful time in our careers to be so close to something so special.

Chris Riback: We often hear the phrase that all business is personal. I guess in your world that takes on a different meaning.

Dave Murphy: Yes, it's interesting. We are truly in a world with our staff that we're dealing with potential life and death situations every single day, multiple times a day. And you have to be good. We talk about risks, we talk about mitigating anything that could possibly interrupt a transportation event, but it really comes down to staff. And our staff is so highly tenured and has been doing this for the blood community, the organ community, the tissue community for so many years. There's a very close relationship with the requirements of the cell and gene therapy and our traditional healthcare customers. And it really, I can't express how proud I am of our staff, how good it is to have people that you've known for many, many years taking these calls, making the routings, dealing with the airlines. These are the people that allow me to get the four hours of sleep at night.

Chris Riback: So you've increased it then, huh?

Dave Murphy: Yes, right.

Chris Riback: You know in listening to you, every business talks about the importance of people. And so many businesses talk about the importance of institutional knowledge and historical knowledge. But again, it really must take on a different meaning in your world because there just must be so many particular requirements. I mean, you're talking about not just perishable goods. These aren't flowers or fruit or food. This is life and death materials. This is blood. These are corneas. These are pancreases. That the historical knowledge has to be central to separating you from others, and I would imagine defining the service that you're able to give.

Dave Murphy: Yes. Every organ has a requirement that is a general requirement when it comes to the time, what they consider cold time, speaking of organs. But then it really is, it's up to the surgeon and what the surgeon prefers. So oftentimes, we could be handling a shipment today of let's say a kidney. Well, kidneys traditionally are allowed somewhere between 8 and 20 hours between the time it's explanted and implanted. Now that changes. Everyone wants it as

quickly as possible, but it gives you some options. You can think about what is the best least risky way to get it from point A to point B. Many of these organs and therapies don't have that requirement. We have one product that we deal with that has a 17 hour shelf life. If it's 17 hours and one minute after that time, that product can't be used. And for our staff to be able to manage that by client, by product, by packaging type, by temperature, by chain of custody, it's an enormous task. And again, it goes back to the staff that really makes it work.

Chris Riback: I'm imagining, you almost have to imagine a human face on every package, every delivery, every logistics decision that you make.

Dave Murphy: There's no question. And these folks, they go home at night feeling good about what they did during the day. And for a service industry to be able to, if you think about it, many of us in the world, the working world, we go home, we wake up, we do the same job over and over. This job, while that may be the case, we do things over and over, many of us go home at night knowing that we really made a difference. And that's the key. I mean, and there's something to be said about the emotional side of what a person does in their everyday work life. And it's gratifying to me. And I know it's gratifying. I can speak for a lot of people in the control tower that it's one of the best parts of their job is to know that they helped somebody.

Chris Riback: Let me ask you, from the client point of view, what do clients producing these personalized medicines need to know about your process, about your efforts, about what goes into what you do and what it means for them?

Dave Murphy: Well, this is a great question. And it's really when we first get engaged with a client who is proposing on doing a study for melanoma, a cell and gene therapy product. It's really, really important to engage with us first. Before you even think about where the patients are going to be, before you think about where the contract manufacturer may be, you need to talk to us because we've seen it happen. And I can give you an example where people make decisions that affect logistics very early on and they write it into a BLA, a biological licensing application. And once they do that, they're stuck. They can't make those changes. And if they do, it's timely and costly. So engaging with us so that we can map out, okay, you're going to have patients in 10 cities. Your manufacturing location is going to be in this city.

Dave Murphy: Let's look at all the logistics. Let's give you a primary source of transportation. Let's give you a backup and a tertiary. Oftentimes that requires using the commercial airlines as the primary. But if something happens, whether mechanical, you name it, the backup could possibly be an onboard courier or a direct drive as far as 1500 miles away putting a team of people in a vehicle. And then finally, if that's not a reasonable solution to meet the client's needs, we're talking chartering airplanes to move these therapies around and we do it all Chris. It's an enormous feat. But to get back to my earlier point, the earlier we are engaged to discuss these things so that they can make then better decisions down the line, packaging types, packaging sizes, maybe they can have a choice as to where their manufacturing location is because it's not as desirable or accessible for those 10 locations that will have patients. All of this needs to be discussed very early on.

Chris Riback: So you're really in the advisory business as well.

Dave Murphy: It's become that way. Yes. There's no question about it. But again, as I mentioned earlier, when we engage with these organizations, it's about the patient. So we are there rolling up our sleeves along with our clients and we're going to make it work. And that's the key, is to have those types of relationships with these organizations that are creating these wonderful therapies. Let us be a part of the process. We're part of your team. You're part of our team. That's how we have successfully rung the bell for this industry.

Chris Riback: You have been in the industry as you said, in Specialized Healthcare Logistics for a while. How have the logistics tools and the technologies developed? What are the newest best practices? What's state of the art in 2020?

Dave Murphy: Well, we've had GPS on our phones for many years. GPS is becoming more of an integral component to each and every shipment that we manage. We have a fleet of GPS units within our call centers, control towers that are often deployed to a pickup location where it's then attached to the shipments so that we have visibility over something that is out of our control for a short period of time. And that's when it's with the commercial airlines. That's becoming more and more the common asks these days, to have a GPS attached to any one of these shipments.

Dave Murphy: When you have, particularly with the cell and gene therapies, where you have a kind of a schedule or you have already identified your origins, you know where your destinations are. The logistics behind placement of these units is somewhat standard at that point. And the airlines have also stepped up to the plate. The airlines do have enhanced services to their existing products that they will provide a GPS while it's in their custody. So when we tender it to the airline, oftentimes the airlines will have a service that they can provide a GPS, they'll put it on the exterior portion of the box. When it arrives in its destination city, it's removed from the box. My person is there to recover that shipment and he's in route to the hospital.

Dave Murphy: So this gives us, what I would like to say is complete visibility. Now, there are some things that happen when the airline takes off and based upon an altitude adjustment, those GPS units, much like your phone when it goes into airplane mode will turn off and then when it gets to a certain elevation, it will turn back on. So there is, but you know that it left Atlanta, right? You know it left Atlanta at precisely the time it needed to. You know it arrived in Los Angeles. The thing you don't know is where is it between Atlanta and LA. But those are two real key points and that's why the value of those devices is so important.

Chris Riback: And you're tracking the flight during while it's on route. So you may not be getting the data from the GPS itself, but whether it's FlightAware or whatever tracking of the flight, you know where that package is every single moment.

Dave Murphy: That's correct. That's correct. And to further on the technology front, all of those links are attached to our job. So somebody is, a client might be tracking their shipment on our website. And there's links to FlightAware. You can see the GPS location, you can see the temperature monitor oftentimes from the desktop. So you know that the intended temperature that your product needs to be shipped at is visible to them. It's remarkable technology and it's available in most cases, and we use them all.

Chris Riback: What about different kinds of packaging?

Dave Murphy: Packaging over the last 10 years of my career has really, really been phenomenal and when it comes to the improvement. There are so many packaging choices for clients out there, and these are things that we like to discuss very early on as I just mentioned. But the technology that's attached to some of these packaging systems is remarkable. They also, many of these therapies that are being shipped in a deep frozen state, meaning on liquid nitrogen at -180 degrees, they have GPS units, they have temperature monitors, they have tilt indicators, they have humidity indicator, they have it all, all the bells and whistles. So clients really have full visibility of these shipments. And that is important, and that's required by these organizations along with a very strong chain of custody knowing that these shipments need to go to one person and one person only.

Dave Murphy: It's interesting I mentioned the retooling of a lot of our ground network. Back in the day, if somebody wanted something delivered this afternoon at 4:00 o'clock, and we happened to do everything that we possibly can and we can make the delivery at 3:00 o'clock. If we made that delivery at 3:00 o'clock, it was a very big win for the client, for us. In today's world, with such high expectations on chain of custody, when a client requires a delivery at 4:00 o'clock, they mean at 4:00 o'clock. 3:00 o'clock is unacceptable, and it also needs to go to a specific individual. So these are also challenges that we face and that we manage every day.

Chris Riback: Dave, this is a unique industry to say the least, specialized healthcare logistics, the specialized healthcare business. For them, what is the role? What's the importance of a global supply chain? A global supply chain that runs well, that gets the job done?

Dave Murphy: Well, I think when you look at it from a global perspective, it's about consistency. It's about being able to provide and cover the same expectations domestically as you can globally. It's very difficult to have different rules of transportation engagement, just because of where you're shipping from or sending to. So all of the things that I've described to you don't change given the origin or the destination. We have a wonderful team in the London facility that represents specialty healthcare logistics and the cell and gene therapy community. Traditionally the evolution of these therapies begins in the US, not all, but most. And then the next step after US approval is often going to be EU approval for these therapies. So there's a lot going on.

Dave Murphy: And depending upon where their manufacturing is, it could require us to make a collection, send it to an intermediary where fresh product is brought down to -180 levels, where it's then recollected by our team, it's sent on a flight back to the US to a manufacturing facility.

Cells are manufactured, and then it's returned in really the same format. So oftentimes, and here's the key, depending upon the origin and destination, one patient could require up to 8 or 10 shipments. In the US it could require three or four shipments for one patient. So it's a lot. It's tremendous work on behalf of a team that is dedicated to do this. And that's the only way it would work.

Chris Riback: And for these businesses, your clients, how important of a role does global supply chain logistics play in their own business?

Dave Murphy: It's really important for a client's confidence that they know they're working with a very well established organization that has the track record, the representation in areas throughout the world. And I believe it's going to become more and more of a concern as these therapies begin to gain more market approval and that the therapies that will be introduced to patient populations throughout the world. So customers really want to know that when they choose a vendor because it's a commitment to choose a vendor. And they want to know that as they grow and as the patients increase, that we're going to be, or that organization is going to be the organization that's going to carry them all the way without any interruption.

Chris Riback: Do you hear them talking about that? I'm imagining the executives of these companies who are worrying about organs and lives and blood and corneas and all the materials that you are talking about. In the global supply chain and the logistics, is that part of what they talk with you about? Is that part of what they talk with each other about?

Dave Murphy: It's a conversation that without any question takes place with the new exciting therapies that are being developed today. I think that most, in the organ and tissue business, transportation is a critical element. But we've been doing it for a long time and I think it's lost a little bit of its focus. It's very reactionary where there's not ... It's very difficult to plan though. In defense of that industry, you just don't know when the next procurement is going to take place or where. With the cell and gene therapy community, there is more of a structure. They have identified where the patients are going to be. You have time to plan for that. So logistics does take a much more front row position in these discussions.

Chris Riback: What do clients need to know about the commercialization of drugs?

Dave Murphy: Well, that's the interesting thing about this industry as well. You know, from a traditional perspective when it comes to drug development, everyone used specialty couriers for the drug development because it was critical to get those samples that the investigational drug to the patient, the patient samples back to a lab to analyze them. And then over the course of six, seven, eight, 10 years, if they get commercial approval, then the type of requirement and transportation wasn't as critical. So they could use lesser modes of transportation. Oftentimes using freight forwarders and overnight courier services.

Dave Murphy: The cell and gene therapy community puts as much emphasis on transportation from a commercial perspective as they do in a clinical perspective. So they're always going to

use a commercial courier or a specialist courier, even when granted commercial approval. It's a decision they make early and it's a decision they hope will maintain throughout the course of time so that as more patients become available and are urgently needing these therapies, they have the courier set with a track record of success.

Chris Riback: Are there any insights, is there specific guidance, maybe even a list of tips that you would give clients of what they need to be thinking about when they're thinking about the commercialization of drugs?

Dave Murphy: Yes, absolutely. As I mentioned earlier about engaging with us very early on in a clinical perspective. You know, you want to be in a room with all stakeholders to talk about the risks of doing it this way and the best course of action to represent this clinic given the manufacturing is going to be in this city. Those decisions are, it's imperative that those decisions are made very early on in the process so that ... The whole idea is they want to be able to extend these therapies to all that suffer from various indications and the numbers can be daunting. The patients with non-Hodgkin's lymphoma, there are 70,000 people diagnosed with that ailment every single year. Only the most ill are able to receive these therapies. So if they get the approval to dose more and more of these early diagnosed patients, that's a lot of people. And they want to know that they're partnering with somebody that has the capacity, the scalability to be able to represent their product to this community, to these patients.

Chris Riback: That is a lot of people. Dave, as we start to close the conversation, I'm curious, in listening to you, as the world of cord blood therapies and more personalized medicine continues to evolve, what does that mean for the world of logistics? How does the global supply chain need to keep improving to keep pace with the changes that are being made in these specialized healthcare areas?

Dave Murphy: Well I think what we've built is about being sustainable for the growth and the popularity of these therapies. I believe that the allogeneic therapies, the cord blood type of therapies that are being used for patients is probably going to by far exceed of an autologous nature, meaning a personalized medicine. So our goal all along, through technology and many other things was to demonstrate our scalability, to be able to manage the influx of new therapies that will be out there both clinically and commercially. So it's really about demonstrating your ability to grow with this community. And that has been a focus of ours from the inception.

Chris Riback: And Dave, to close this conversation, I'm going to ask the impossible, but having listened to you now, the impossible doesn't seem so daunting for you. So I feel pretty confident about this. I want you to look into the future. What are the trends? What changes do you see around the global supply chain logistics for the specialized healthcare world?

Dave Murphy: Well, we've started something with the airlines in trying to further educate the need of enhanced services. And the airlines have really stepped up to the plate. This is a continuing ongoing conversation that we have with all, if not most airlines that have enhanced services. I believe that's going to be a conversation that will have no end. And as I mentioned

earlier, the airlines have been extremely cooperative and interested in providing solutions within their massive, massive organizations. But the key to the future is going to be also technology and what we can bring to a client with technology offerings that allow just more visibility with each and every one of their patient samples and shipments. We're well on our way in making some tremendous enhancements to our current world class technology. But I believe it's going to be subtle changes that will continue to help the community have the confidence to know that Quick is the organization that's going to bring them into the next decade.

Chris Riback: Yes. Confidence has to be key when you're talking about the products that you're moving, the companies that you're dealing with and the lives that you're touching every day. Dave, thank you. Thank you for the conversation and thank you for the work that you and your team do for people all over the world every day.

Dave Murphy: Chris, thanks for the kind words. It's a team effort and it was a pleasure speaking to you this morning.