

Mark Masselli (00:04)

The first written work about hydroponic gardening was published nearly 400 years ago, but it's still little known and little use. One of our guests is trying to change that with an international perspective, and our other guest is here to explain how Food Is Medicine approach works.

Alissa Wassung (00:21)

Researchers at Tufts Friedman took a lot of the medically tailored meal research and asked the question, what savings could we expect as a country if we, you know, modeled this research nationally? And they found that if every eligible patient, actually received medically tailored meals, again, we're talking high risk, high need patients at the top of the pyramid, but that our nation could serve save 13.6 billion with a B dollars.

Margaret Flinter (00:49)

Joining us are Christian Heiden, the founder and managing director of Levo International, and Alissa Wassung, the executive director of the Food Is Medicine Coalition.

Christian Heiden (00:59)

I mean, the, the case studies that we're seeing out of the Food for Health Clinic at Hartford Hospital are remarkable. I mean, people not needing heart transplants, right? Which is a multimillion dollar surgery.

Margaret (01:11)

This is conversations on Healthcare.

Mark (01:24)

Well, Alissa and Christian, welcome to Conversations on Healthcare.

Alissa (01:29)

Thank you so much, mark and Margaret. It's such a pleasure to be invited to speak with you, and to speak with you as well, Christian.

Christian (01:37)

Yeah, thanks for having, thanks for having me.

Mark (01:39)

Well, let's start with Alissa and many in our audience are familiar with the concept. Food Is Medicine. Alissa and Christian, you may not know, were part of a community health center network, and one of our founders back in 1960 H Jack Geiger, was doing a prescription for food, and sending those prescriptions to their own pharmacy, which had food. So, this is something that's deeply personal to so many of our listeners, and so good to have you. But I'm wondering, Alissa, if you could give us an overview of the concept as well.

Alissa (02:10)

Oh, absolutely. And, Dr. Geiger's story is such a famous one. And we, we also, you know, share that connection to Food Is Medicine as a, a somewhat ancient concept in, in some respects that we're kind of coming back around to in this present moment with healthcare. So I'll, I'll say a little bit about our coalition and our genesis, which will kind of set the stage, I think for the current focus on Food as Medicine. The Food as Medicine Coalition or FMIC is a national coalition of nonprofits that deliver medically tailored meals and groceries alongside medical nutrition therapy and counseling and education to people living in communities across the country who are living with severe, complex or chronic illnesses. Our goal is to advance access to these, lifesaving interventions through policy change, research evaluation, and especially as a community of, of practice through best practices. We offer that community of learning for existing practitioners of Food Is Medicine, and we also train new organizations to launch medically tailored meal programs. A little bit about our history. FMIC agencies actually created the medically tailored meal intervention, which might be a new term to some, so I will explain it about 40 years ago as a response to the HIV/AIDS pandemic. And at that time, there was no treatment for the illness and people were dying isolated and alone. And so community responded, volunteers entered people's homes, bring nourishment in the form of food, really groceries, but they quickly understood, that a person who is living with that state of illness actually needs more than just food. They need meals that are tailored to their nutrition needs and their illness to help them stay as healthy as they can be for as long as possible. And registered dieticians were part of this intervention when it was born in this way, and they've been, helping us stay current with nutrition science as the intervention evolved through mission expansion, where we now serve people living with all illnesses like cancer, cardiovascular disease, chronic kidney failure, pulmonary issues, musculoskeletal diseases, et cetera. To give you a sense of scale, last year we

cooked and home delivered more than 18.9 million meals in equivalents to 64,000 clients across the country. I think it's important to note that we feed people of all ages because illness affects everyone or could affect everyone, and our clients tend to be living with multiple illnesses at once, making their situation quite complex. Mm-hmm. So we deliver this, delicious food to them without fillers starters or preservatives. Mm-hmm. And it's important that they eat. So even though our Food Is Medicine, it doesn't taste like that. And we also support the families of our, of our clients as well.

Margaret (05:09)

Well, Alissa, that was a great explanation, also a very important part of history there that I, I did not know previously. So thank you so much for sharing that. And, and Christian, how do you and Levo International bring food as medicine to life through hydroponic farming units?

Christian (05:27)

Yeah, so Levo, has been developing an approach to hydroponic farming, that's called Simplified hydroponics. So simplified hydroponics is growing in, it's same hydroponics. It's growing in food, water rather than soil. It's a highly efficient way to grow. It saves about 90% of the water it uses about a of the space, and it actually grows faster and more, per plant than is possible. And so what we've done is we've stripped the complexity out of hydroponic farming. So we developed our technology actually for rural Haitian households in, the Central Plateau of Haiti. It started back in 2016, and we've been developing an approach, to make, make the technology accessible and make, and that's both affordability and simplicity of use, and repair. And so we have been developing that and began in 2022 and 2023 to work with, St. Francis Hospital, or, which is part of the Trinity Health, network, as well as, Hartford Healthcare to bring hydroponics into their food as medicine programs. And so the Hartford Healthcare is kind of the, the, the big one that we work with. We work with four hospitals now. And the way that we do that is our technology is really straightforward, right? We're talking about PVC, primarily PVC pipes, right? Style of hydroponic farming where, where plants sit in a PVC pipe and grow out of it. So our methodology, we've really broken it down and made it a science rather than an art form. It reduces the labor requirements as well as the complexity in growing. And so when you go work with a hospital, they have lots of potential volunteer base, like Hartford. Hartford Hospital has 8,000 employees to draw from for volunteers, but they have a real difficulty in, in training and in, and in maintaining those spaces and maximizing those spaces that they have in the hospital. So, Hartford Hospital, for example, one of our partners, has two rooftops that they've converted into hydroponic farms. And that all systems allow for the maximum bang for buck, in terms of real estate on the hospital that those vegetables then go feed into their food for Health clinic. Which is a, you know, very similar kind of a prescription of vegetables. They're referred to clinicians to the Food for Health Clinic, and then some of those vegetables and healthy food options, right? It's not just vegetables, it's the full range of meals are then, given to patients who are generally food insecure with a diet related illness. So that's, that's one of the ways that we really work with, with, in the Food for Food Is Medicine space.

Christian SOT (08:09)

The science of it's really simple. You leave an air gap. So usually stagnant water is very bad for plants. It causes the roots to rot. We get that in the circulating systems that we have here. Sometimes if the temperature gets too high and the dissolved oxygen is too low in this system, the genius of it is it doesn't actually really matter what the water temperature is, because the air gap that you leave between the top of the water and the bottom of the lid provides the oxygens for the plants roots.

Mark (08:37)

Christian, you and I had the opportunity to meet for the first time a number of months ago, and your story and Drive are very motivating. And Levo International started when you were told your ideas were, I say, too ambitious. I'm wondering if you could share that story with our listeners.

Christian (08:54)

Sure, sure. So, so Levo started as my Eagle Scout project originally. It was an extension of my Eagle Scout project. So I had basically discovered about simplified hydroponics and learned about it and wanted to do a project in Haiti. And the Boy Scouts, understandably looking back, didn't wanna sanction a 16-year-old going to Haiti. And so I did my official project for my high school, but then went down, with my father and my brother to the Central Plateau and PO in Haiti with an organization there. And we built a, hydroponic greenhouse for the organization in the Central Plateau. We then realized that one, a greenhouse in the tropics, it's not a great idea. It's already plenty warm there, but the systems themselves worked, and there was a real opportunity for us to create sustainability in the food system in, in Haiti, right, where we can build it out of things that are just locally available, where the average person has to walk a mile to get their water. So traditional agriculture is out of the

picture. Hydroponic farming is certainly in the picture. And so we, we've been developing that primarily a bucket style hydroponic system in, in Haiti. And we serve over 400 households, with hydroponics continuously, even today where Haiti has largely collapsed. And that really is the, the basis of Levo. But we've been developing the same technology, the same basic approach and stripping out the complexity for the US and, and around the world.

Margaret (10:27)

Well, Alissa, Christian and Levo International are part of the Food Is Medicine movement, that we're seeing and that you just gave us a great explanation about, but maybe pull a couple of threads together. For me, I've, often heard food of medicine, Food Is Medicine as associated with, insurance companies, managed care companies, making sure the patients leaving the hospital get tailored meals. But I've also, heard it really as something that primary care providers and healthcare providers in the field are embracing really on more of a teaching, basis and, educational basis to their patients. So, so tell me about the whole dimension of Food Is Medicine. I, I know you can become certified in it as a healthcare provider. So is it happening in lots of different ways or really does it refer specifically to the medically tailored meals that you're talking about that are delivered to people?

Alissa (11:21)

What an excellent question. Food can be medicine along a continuum from prevention to treatment. And so all those wonderful activities that you're talking about come together to make this sort of spectrum or constellation, depending on which way you put it together. A really, kind of used, rubric for this concept is a pyramid, and it talks about, from prevention at the bottom to treatment at the top, really ensuring that people have, good nutrition to promote human flourishing and health. And at the bottom you have, access to healthy food, right? In our, in our society, all the way up to when someone has a critical, complex chronic illness or multiple utilizing food as treatment. And it is at that top of the pyramid that it's most closely associated with provision through healthcare, whether it be identifying and referring on the provider side or reimbursing and coordinating on the healthcare payer side. So it's like three legs of a stool, right? Community based interventions, providers, identifying folks, and healthcare, payers coordinating all of that together. But this intervention actually grew up in community and it's still very deeply rooted there. So I think you have a lot of different players in the Food Is Medicine space coming together to fill in the spaces of that pyramid. I think a really great resource to point folks to is the Aspen Institute actually produced a Food as Medicine Research Action Plan. While it is chockfull of research, it also brought together a really broad based set of experts in the field, from payers to providers to practitioners, to clients or those receiving the services. And the first thing everybody had to agree on was, what is food as medicine? 'Cause there's a lot of concepts floating around. And so the way that they and I was part of it, they, they anchored, it was just to say Food Is Medicine is food that promotes health and has a nexus to the healthcare system. So in some way is attached to providing that treatment through the healthcare system. So medically tailored meals and groceries are at the top of the pyramid, not 'cause they're the best, even though they're the right intervention for folks living with complexity. And it's a smaller population that actually needs those really intense treatments versus everyone that should have access to good nutritious food.

Mark (13:57)

Alissa, one of the, programs that we have as part of our Moses Weitzman Health system is the Weitzman Institute, which is based in Washington DC. It's our research institute focused in on implementation and improvement science. And so this, is not surprising that we'd wanna discuss, the research about food as medicine. And you have data that demonstrates that the active tailoring each meal to meet the client's specific medical diagnosis does work and it saves money. I wonder if you could share a little more about that with our audience.

Alissa (14:30)

Absolutely. We've really seen the rise of peer-reviewed research over the last 15 years or so, and it demonstrates as, as you just said, unsurprisingly, adding this type of tailored intervention, to someone's treatment plan can lower healthcare costs, improve outcomes, and make people happy, which from a mission perspective, from a healthcare systems perspective, is really important and actually measurable in terms of outcomes. And so I think before we start talking about the research though, it's really important to first ask what are we testing? A lot of the research I've just mentioned, and I'll detail, was done on our agencies. We have about 40 agencies nationwide, that are participating in community provision and provision through healthcare. And medically tailored meals is more than just healthy food. Mm-hmm. It is a comprehensive process of delivering a tailored intervention. So a person is referred to, a community-based organization by a healthcare professional. They're then assessed by a registered dietitian nutritionist or a nutrition professional. And together they're creating a meal plan that satisfies the needs of the, the person in terms of tastes right. We're not gonna send someone fish if they don't like fish, but also encapsulates that layering of restrictions that must be accomplished so that people

can experience those outcomes. And then after it's cooked and, and delivered, folks experience ongoing nutrition counseling and education. So we're really following someone through the trajectory of their illness. That is the intervention that produces outcomes like reducing hospitalizations by 50% or decreasing er utilizations by 70%. And those are very costly healthcare interventions that are necessary sometimes, but are avoidable at other times. And these types of overall healthcare cost reduction amount to about 16% net in, in some of the studies that have been done on medically tailored meals. So that means inclusive of the cost of these very highly tailored meals. There are also other, benefits to medically tailored meals like improved mental health or better diabetes management if one has diabetes, healthier eating habits and unsurprisingly reduced food insecurity, which in and of itself promotes health as many other research studies have shown. So the, literature is growing, it seems like almost every week there is a new food as medicine study coming out. There are also some really big research vehicles and projects that are field-wide that have been put in place with this new focus on food as medicine.

Margaret (17:20)

Well, Christian, you are partnering with a growing network of food as medicine partners, as we've just heard about. And that includes hospitals that are increasingly providing free prescriptions of healthy food and recipes. In fact here in Connecticut, and this was kind of news to me recently, Hartford Hospital's hydroponic rooftop farm in 2023 was the first of its kind in the United States at a hospital. So I'm proud of that here in Connecticut. Are you seeing, the types of outcomes that Alissa talked about with the, hydroponic rooftop at Hartford Hospital as part of the picture?

Christian (17:56)

Yeah, absolutely. I mean, one of the things that I think that, is one is something that we know, right? And I'm sure Alissa can talk to this, but being involved in the food process, right. Seeing how food is produced, a lot of people, particularly from poverty right, have never been to a farm they've never seen where vegetables, they just, they just appear at the store shelves. They may be really poor taste, they may be really poor quality. And you know, everybody will tell you, right? You go to a grocery store and you buy a tomato, right? Generally that tomato is pretty poor versus if you grow in your backyard, that tomato has a whole different taste profile. Hmm. And so we have been able to provide the hospital with a means to excite there, patients, right? The way they specifically request roof, the rooftop vegetables, right. And they go up and they get to see the plants growing and engage with that. And, and, and that we build that into our educational programming that we do, not just at the hospital, but around the state, right? You get young people involved in the growing of vegetables and therefore they are more likely to consume them. And so, you know, we, it, it really is an exciting add-on to the program. I mean, at the scale we're actively working to scale up our production so we can contribute to more and more and more of the amount of vegetables and the amount of food that is given out by the clinic. But it, it is a really exciting component that they build in the community education and community interaction with the food itself. And, and, and it's exciting to be a part of it. And, and, and, you know, just it adding on the, you know, the, and talking about cost savings. I mean, the, the case studies that we're seeing out of the Food for Health clinic at Hartford Hospital are remarkable. I mean, people not needing heart transplants, right? Which is a multimillion dollar surgery, that now long just because of diet. They no longer need, major surgery that costs millions of dollars. And so it's, it's a really exciting thing to be a part of just because of, of all of the different benefits that you get to see relatively quickly, in, in the people that we're working with.

Alissa (20:10)

And just to build on what Christian just said, actually, researchers at Tufts Friedman took a lot of the medically tailored meal research and asked the question, what savings could we expect as a country if we, you know, modeled this research nationally? And they found that if every eligible patient, actually received medically tailored meals, again, we're caught talking high risk, high need patients at the top of the pyramid, but that our nation could serve save 13.6 billion with a B dollars in one year. And that's net of the cost of meals. So this is a tremendous opportunity to build a more efficient and effective healthcare system and reconnect people back to their communities. And back to some of what Christian was talking about, the experience of eating.

Mark (20:58)

Well, we always like to say building an efficient, effective, elegant and economical system is so important. And I think about it in terms of the lens of a provider. I'm wondering, you've, you've given a list of, of good outcomes. What about in, in terms of patient satisfaction, what do we hear in terms of, what's the feedback providers are getting from their patients?

Alissa (21:22)

I mean, there are ways of medic measuring satisfaction, of course, with validated tools and such, but for me it's the stories, right? People avoiding amputations, people being able to participate in activities with their

grandkids, people avoiding, as Christian said, you know, needing to have transplants or other serious medical, issues, are avoided in their lives. And also the, you know, for us as community-based mission-oriented agencies, it is that connection to community knowing that volunteers chalk the carrots that are in the meal that you're eating, people feel the love. People feel that connection in terms of satisfaction. So, for, for us, it's kind of a full circle, where you have the measured outcomes of, you know, being and feeling healthier and how that makes you feel as a human measured in research and in, in stories. But also that connection to community that we do believe is part of that, that healing.

Christian (22:21)

I think what's exciting about the Food Is Medicine concept in general, is it, it, it, a lot of times medicine can feel for the patients is really impersonal. And the things like medically tailored meals and involving them in the actual food production, right? It, it removes that adds a personal layer and makes people feel like they're, they're part of their, their health, right? Improving. It's not just a, it is not just a medical regime, me medicine regime they have to take, right? Or a treatment that they have to take. It's, it's food. It's the, you know, one of the best things about the day is your meal, right? And, and so it's, it's, it's a, it's an elegant right mark going off what you're saying, way to really engage people and, and being healthy and, and, and improving their lives.

Margaret (23:05)

Thank you. Thank you for that, Christian. And Alissa, I just wanna follow out a little more of the modeling. You talked about at the level of the, the very high complexity patient, you know, in the community space, community health space, we're always trying to go upstream on things. And we think about things like school lunch. Think about things like the WIC program, think about pregnancy, you know, and efforts have been made. Food stamps were an effort. Wic is an effort. But this, this focus on extremely, healthy and maybe even medically tailored, if you think of children as growing little people and certainly pregnancy are also priorities. What, what's going on in that space relative to food is to food as medicine?

Alissa (23:52)

Well I, I think I would say first just that the whole, nexus to healthcare. You know, doctors are some of our biggest champions 'cause they're seeing this in their patients every day. But healthcare insurers are also big champions. And so, you know, while we are really, you know, focused on the populations that I've indicated, when it comes to research, the populations are expanding. Like many of our agencies actually have medically tailored meal programs for pregnant people who are experiencing gestational diabetes or looking at the first thousand days of a, of a human's life, right? There are some wonderful, medically tailored meal and medically tailored food, programs across the country focusing on children and childhood obesity. So we're seeing the circles start to kind of go out from, you know, the focus on, avoiding high, high cost procedures and, and helping to stabilize people in, in their homes where they want to be as well. And I would say all of this research has really been the catalyst for states and, healthcare plans to leverage these interventions in their flexibilities in their state to provide it through health insurance. For medically tailored meals specifically, Medicaid has been really one of the primary sources of new cost-effective policies for coverage of food as medicine interventions. And for those of you for whom Medicaid and Medicare can get confusing it, it can, Medicaid is the, public insurance infrastructure for low income Americans. And to date, 13 states have passed waivers that include food as medicine or food as medicine adjacent services in their state. Medicaid programs and three are pending. There's also legislation, there are other flexibilities that states can draw on, and they're doing it. And it's a whole range of states. And North Carolina's actually a really great example. They, piloted in, in several counties at first and now are expanding those counties 'cause it was so successful. So I think, you know, being able to tailor an intervention for your state locality, and then being able to build upon that has just really, been a tremendous engine for answering state-based needs.

Mark (26:19)

Well, that's great. And maybe a question to both of you. You are both part of the next generation of leaders and I'm wondering if you think your drive in energy or an indication, that your generation is more willing to embrace the ideas, more than others have in the past.

Christian (26:37)

What's great about food as medicine is it makes sense and it doesn't just make sense to a, a, a young, a younger generation, bringing in energy makes sense to everybody, right? And I think that's what makes it so compelling and exciting, for all of us involved in the space, you know, young and old, right? Is that this is something that's very clear, right? There's a, there's a fundamental understanding even without the research where you're like, of course. Right? One of the major problems that we have in society for our healthcare sector, right? And health is food, right? We know we're not eating healthy in America in general. And so what's exciting is there's now

research and there's now energy behind it. And so what I find most exciting is not just people my age or close to my age, is that everybody in this space is, is we're building momentum, right? It's not just the young people that are gonna save our, the American healthcare. So it is everybody, we're all involved in it, right? We're even sitting on this in, on this podcast and talking about it, right? It's, the energy is there and it's there across generations, I think is, is what I would say and it's exciting to be a part of.

Margaret (27:42)

So, Christian, my my final question, what if somebody wants to start somewhere with hydroponics on their own, maybe not a whole farm or a rooftop garden. Is this accessible for somebody to do in a residential setting?

Christian (27:56)

Absolutely. Yeah. I mean, we, and that's what we specialize in, is, is is anything from farming to kind of the DIY do it yourself at home. And, and I would encourage anyone to go to Levo on a national.org and reach out if they're, if they're interested in hydroponics.

Alissa (28:10)

Well, I'll just say that I appreciate being associated with Christian. I have a feeling he's of an even younger generation than I. But I do feel this tremendous energy and growth of interest in food as medicine. It is bipartisan, it is, cross generation. It is an acknowledgement, I think, about the high cost of healthcare not actually resulting in the health that we're all looking for. The research combined, also the experience of, you know, the pandemic when food supply lines were cut and we needed to, to meet people in their homes. So, this renewed interest just brings a lot of, of energy, I think, to the conversation. And we're seeing multiple sectors get involved, right? We just talked about all of the different actors in this field. And so with all of this interest, I do think that it is also important to, you know, have the conversations about what are we talking about to ensure that, you know, as we bring this intervention or these interventions that grew up in community into the healthcare sector, we are ensuring that we're retaining the rigor and the connection to community. 'cause those are the things that actually produce those good outcomes. We at FMIC are, are working on that in a variety of different ways. Last year we actually put out the first standard for the intervention. There are, I can hear Christian's commitment to how hydroponics is executed. These are good conversations to have so that we are ensuring that, you know, we're not testing subpar interventions that don't result in good outcomes and then abandoning the whole project. So I think there is a, another kind of call to, recommit to those things. And to have those conversations and those educational moments too.

Mark (30:00)

Well, it's wonderful to hear bipartisan and multi-generational. That is the prescription, for everyone to come together. I want to thank Alissa and Christian and thanks to our audience for being here. Just a reminder to be sure to subscribe to our videos on YouTube and find us on Facebook and X. You can also share your thoughts and comments about this program. Take care and be well.

Margaret (30:24)

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