Episode 40: "Can Planetary Healthcare Save Lives & the Planet?"

with Dr. Andrea MacNeill, Surgical Oncologist at Vancouver General Hospital and the BC Cancer Agency

Dr. Andrea MacNeill, the Founder of UBC's Planetary Healthcare Lab, introduces us to the concept of planetary healthcare, which is a re-envisioning of the intersection between healthcare and the environment. We discuss how behaviour can contribute to problems and solutions when it comes to planetary healthcare topics like food, stewardship, and single-use equipment. Andrea ends with some actions we can all take to lessen our impact on planetary healthcare, including Choosing Wisely.

Transcript:

KIRSTIN APPELT, HOST: Welcome to this edition of Calling DIBS. I'm your host, Kirstin Appelt, Research Director with UBC Decision Insights for Business and Society, or DIBS for short. Today, we're calling DIBS on Dr. Andrea MacNeill.

Andrea is many things, a surgical oncologist at Vancouver General Hospital and the BC Cancer Agency, a clinical associate professor in UBC's Faculty of Medicine, the Regional Medical Director of Planetary Health for Vancouver Coastal Health. And she's also the founder and principal investigator for UBC's Planetary Healthcare Lab, which has the delightful acronym PHcL. Impressive titles aside, I'm honoured to be talking to Andrea today because she does such neat, impactful work and is generally a delight to chat with. So welcome to the podcast, Andrea. Thank you for joining us.

ANDREA MACNEILL: Thank you for having me, Kirstin. It's an absolute pleasure to be here.

APPELT: Why don't we start out with our awkward little opening question? Can you start by telling us a little bit about yourself?

MACNEILL: Of course, I grew up on the East Coast in the least known province of New Brunswick, and gradually made my way westward, spending eight years in Ontario and finally settling in the nirvana that is Vancouver. And my favorite place on the West Coast is the Gulf Islands.

APPELT: Nice. I will admit that being from the US I did not realize New Brunswick was a province for the first couple of years. I was like, "Oh, that's just a city in New Jersey". It was news to me. So great to meet someone from the beautiful, I'm sure, province of New Brunswick. Well, aside from wanting an excuse to get on your calendar for a chat, my inspiration for inviting you today was planetary healthcare.

Given DIBS focus on using the BI to increase environmental, economic and social sustainability, and then PHcL focus on using a diverse toolkit to tackle planetary healthcare, I think there's a lot of overlap to explore, but I also realize some of those terms might be new to folks. So let's talk terminology. Planetary healthcare. What is it? Why does it matter?

MACNEILL: Planetary health care is a word that I proudly made up and enshrined in the literature. So I think we have to start by defining planetary health, which is a better known construct, but nonetheless not entirely

mainstream yet. And it's not totally synonymous with environmental sustainability in terms of just representing the health of the planet, but the term itself explicitly refers to the interrelationship between human and environmental health. So the way that all of our health depends on healthy ecosystems, clean air, clean water, clean soil, healthy food systems, et cetera. So it captures in a single term the ecological basis of health.

So as you can imagine, coming from a health care perspective, that is a strategic lens through which to view the environment. I took that notion and kind of drew a boundary around the healthcare system and said, what if we applied that thinking just to healthcare to try to capture the environmental impacts of the care that we deliver and the way that that negatively impacts on the health of our patients and the rest of the population who can all be considered future patients and came up with planetary healthcare.

And I suggest to people that first and foremost, the practice of planetary healthcare requires a reframing of our core mission from simply treating disease to actually restoring and promoting health and wellness. And that's our starting point. We then can reimagine the way we deliver healthcare, explicitly taking into account our impacts on both local and global environments, and looking for opportunities to create health and social value, primarily through embracing an anchor institution mandate, which we can talk about later.

APPELT: Wow. I love that, and I like how there's a bit of a behavioural insights concept in there, idea of framing and how previously we think about more of prevention recovery mindset instead of a positive health promotion. It's not about not disease, it's about yes, health.

MACNEILL: Mm-Hmm.

APPELT: That's such a fascinating lens to put on it, and it makes so much sense. Well, let's dig in a little bit. So you've got a few different foci within planetary healthcare that cycle has already kind of tackled. Can you tell us a little bit about the different areas?

MACNEILL: Yeah. Right now, the lab is working on four key areas. Although there are additional areas at work within Vancouver Coastal Health, my home health authority, the lab is focusing on food, on virtual care, on stewardship, which is really where I think BI has the most applications, and on circular economy.

APPELT: And maybe for folks who are not familiar with terms like circular economy, can you just unpack those a little bit?

MACNEILL: Yes. So I think the best way to understand circular economy is actually to understand the opposite, which is a linear economy. And that refers to the typical process of manufacturing something to be used once and then thrown out. So that's a linear economy that is an inherently unsustainable relationship with the natural world and its finite resources. So the notion of infinite growth in a finite world is just inherently antithetical. It doesn't make any sense and we have to do things differently.

So a circular economy refers to the process of keeping materials in circulation at their highest value application for as long as possible. And typically, that happens through, first and foremost, an emphasis on reduction, so questioning the necessity of the material resource use altogether. But then a series of what are called cascading resource loops, beginning with reuse. So if you can reuse something a thousand times over, that's the best strategy. But then some things will need to be refurbished or repaired, eventually repurposed when no longer suitable for their original application. And eventually, the very last material resource loop is recycling to recover the base value of those materials. That's the notion or the framework that we're trying to

apply to healthcare specifically to the medical device industry, which, as you likely know over the past few decades, has really undergone a wholesale shift toward that linear economy.

And our entire supply chain is dominated by single use consumables, which do not need to be single use. And there are many reasons for that, but that's the main source of our emissions and our resource use within the health sectors is a very strategic target.

APPELT: Yeah, that makes a lot of sense. And I think it probably resonates a lot with everyone because in the last couple of years of COVID, we've all just seen single use PPE go from this thing that no one even knew what PPE meant to now we all have PPE and we've all seen PPE litter on the streets from single use. And so I think that's one that will be very clear to folks. And also, like you said, to have a huge, huge impact.

MACNEILL: Following on that, Kirstin, the other thing the pandemic showed us was how vulnerable single use dominated supply chains are to disruption. So you recall at the outset of the pandemic, when manufacturing entirely shut down in Wuhan, we were faced, well for a number of reasons that and others, with PPE shortages and that resulted in the deaths of hundreds of healthcare workers. I mean that that single concept that PPE had to be single use was responsible for many people's deaths. It had absolutely catastrophic consequences. Whereas hospitals that were equipped with Gore-Tex gowns rather than single use gowns, and reusable respirators weathered that storm much better. All they had to do was scale up their reuse processes, but they did not face the same kind of carnage that we saw in single use dominated systems.

APPELT: Wow, that's such a powerful story and really underscores, like you said, it's partly environmental impact, but it's partly health impact and just making sense of things. So let's talk a little bit about this idea of how BI can get involved here, and I know some of the issues are structural, but a lot of them have behavioural bases. So what are some examples of typical behaviours that increase the planetary impact of healthcare?

MACNEILL: So I would suggest that there are behaviours on both the patient and provider parts. Patients are easier to understand. Patients come with the notion that they want the kitchen sink thrown at them. They want to be thoroughly investigated, leave no stone unturned. And most patients don't understand that there are risks or harms to absolutely everything we do, you know, harms to the tests themselves, the risks of finding things that necessitate further investigations that become increasingly invasive and risky. Most people don't have a concept of that at the outset, so part of its patient driven. But certainly the majority of what I see is provider driven.

So I can give you a few examples of things that I see. One is around inpatient bloodwork. It is very easy, when somebody is admitted to hospital to write daily bloodwork in their order set. And so every single morning they're stabbed at four a.m. They're awoken from their slumber, by a vampire who stabs them and drains their blood that they could use for other purposes. And we get a series of test results that in many cases does not inform their management. We don't necessarily need that information every single day, but it's a lot easier from the provider's perspective to simply write that than take a thoughtful approach and reevaluate it daily.

We actually did a study looking at this in Vancouver General Hospital and showed that in 76 percent of our patients, we did unnecessary bloodwork and we quantified the cost to the patient in terms of unnecessary stabs, amount of blood loss, and the cost to the hospital and the environmental costs. We actually captured a true triple bottom line for that process. And again, this has the potential for serious harms to patients where in particular, in a critical care setting where people are admitted for a long time, we drain them of so much blood that we end up having to transfuse them and they can have adverse health effects from all of that blood loss. So that's one example is around blood work.

And I'll give you another one around unnecessary scans. So I'm a cancer surgeon, and once someone has been treated for their cancer, we transition to what we call the surveillance phase, which means we do regular tests to make sure that their cancer hasn't come back. For most patients, at least, I'll speak just to the ones that I treat, for most of my patients, that should consist of CT scans every six months. But there are other providers who will do those every three months, and there's no benefit to that, to that difference in potential detection of a recurrence and that it won't change their outcome. And patients express considerable what they call "scanxiety" or anxiety around every single scan and the notion that they live their life in three month increments that they're given a repeated life sentence.

And it also opens up the possibility of finding really unclear, equivocal things that we have to discuss with them, so that the conversation goes something like, "I don't know, your cancer might be back. It might not. You might be dying. You might not. The only thing we can do is re-scan you in three months". I think that does a terrible disservice to people, and there's no benefit to the patient's care and doing it more frequently. So that's the kind of unnecessary resource use we see from either the convenience of the way the system is structured, and the way that drives behaviours or kind of a mistaken belief around what patients want and what is best for them, and a failure to appreciate the risks and adverse consequences of the treatment we provide.

APPELT: Yeah, that's so interesting, and it does sound like there's a lot of behavioural biases at play there, like with the blood draws, just the power of like, "If it's just the default to write the draw blood every day, that I don't actually have to think well for this patient, what's the right frequency?". And so it's just easy and so busy have so much going on, and it's easy to just default just right that for every patient, draw blood every day. And then with the scans, there might be a fear of if we're not recommending something every three months, sounds like we're not doing enough. And then people have this fear of omitting an action. So all these biases come into play here, and it sounds like, "Yeah, that's a really rich place for behavioural insights to think of ways to help overcome some of these biases".

MACNEILL: I would love your help in applying BI to this and to help me change this.

APPELT: Such a rich area and you've done such neat work. So let's talk about one of the examples. So you have a really cool project with DIBS' own Dr. Jiaying Zhao and a student on sustainable foods and hospitals. So what's the problem there and how are you using BI to tackle it?

MACNEILL: I love this project. It hits on so many areas. So the shortest possible version is that we are trying to use food both as a lever to reduce our environmental impact, but also to improve patient's nutritional status and their clinical outcomes, as well as their experience of being in hospital. And the rationale for this is that food contributes about 10 percent of health care emissions. Globally, food systems are actually responsible for a third of greenhouse gas emissions now-- that was the latest U.N. report.

So it's a big area, big source and in-hospital up to 50 percent of food that we serve patients it goes immediately into the garbage because it's terrible. That's not the only reason, but it's basically inedible. So we actually have emissions from the food waste in addition to emissions from the food production, and half of our patients are malnourished when they are admitted to hospital. That only gets worse either due to their illness or the surgery that we do to them. And then we further exacerbate it by feeding them the worst food they've ever had when they need the nutrition the most.

So, and we know that malnutrition is associated with worse outcomes. So we are restricting or harming people's recovery by not seeing food as part of the therapeutic regimen as medicine. So we're trying to restore food to the therapeutic paradigm with this project where we have engaged an executive chef and dietetics

team to design what's called a planetary health diet, which is clearly established from a number of academic sources already. But generally speaking, as a plant forward and largely locally sourced diet, and we're going to implement that in a surgical population in a randomized control trial to see if we can improve patients intake, improve their nutritional status, whether that translates into an improvement in their outcomes and whether it improves their experience or their satisfaction with the hospital food.

We've also added in a layer of cultural safety as well, recognizing that our current menu is very uni-dimensionally western. So we have surveyed our hospital population and we're asking our culinary team to build an appropriate cultural diversity to reflect the composition of our inpatient population so that we can use food to enhance cultural safety within our healthcare system as well.

APPELT: Wow, that's so powerful, that reminds me of a just an anecdote of my father-in-law was getting a test in the hospital, and he actually insisted we pick him up an hour late so that he could get the salmon that was in the cafeteria because the hospital he was in actually nailed the menu. So maybe there's a few hospitals, but I love how you're pulling together these multiple lenses. We've had a few conversations with indigenous folks like Stephanie Papik talking about how Indigenous ways of knowledge and behavioural insights have some areas of overlap. And it's so neat to be seeing how you're integrating behavioural insights and cultural safety into a single randomized control trial. That's a win-win.

MACNEILL: It is, and you're asked about how we are using BI in this. And obviously this is Dr. Jiaying Zhao's field and not mine, but we're hoping to work in an element whereby we use this opportunity to introduce people to plant based eating, which they may not otherwise be familiar with, and somehow impart the tools in the hopes that they will retain that behaviour to a certain extent beyond their hospital stays. And we'll build in an element of follow up. I'm not sure what she'll recommend in terms of that intervention, but we do want to see if we can inculcate people with a planetary health eating mentality so that they understand the impacts on the environment of their food choices and hopefully retain those behaviours even once they're out of hospital.

APPELT: Yeah. Well, it also makes a lot of sense and the idea of when you're in hospital, a lot of times you're being introduced to a new diet, like a low sodium diet or low whatever will meet your health needs. But if your first introduction to it is a very terrible salmon or just asparagus, you might not follow it at home. But on the other hand, if your first introduction to, let's say, a low sodium diet is a fantastic meal, then that makes you more likely to follow the guidance at home, I would imagine.

MACNEILL: Yeah, and I think that's why our culinary team is so key. I think of my parents. They don't eat plant based. They only think of a salad. They have no, kind of, point of reference for really delicious and wholesome plant based foods that can meet all of their nutritional requirements. They've never had a lentil loaf in their life, so this is our opportunity to have people experience it and, like you say, realize that this is a possibility for them.

APPELT: Yeah, absolutely. Well, I know you're hugely passionate and knowledgeable about this area. Is there another project you'd like to tell us about?

MACNEILL: Well, I would love your help and input on the circular economy work because it's multifaceted, as you can imagine, there's a part of it that has to do with your hospital procurement policies and things of that nature. But then there is a big piece that impacts the end users. And I would love to develop a communication strategy for a clinical population, around the idea of circular economy, not necessarily having to introduce them to the language because it's quite daunting, as soon as you put the word economy in there, but to communicate to them that hierarchy, and some of those possibilities around repurposing, for example, and then devise a behavioural strategy to try to drive people toward that.

It's funny how people behave entirely differently at work than at home. You know, you would generally try to maximize the user value of something before tossing it in the garbage. But in the OR, it's as though people can only imagine the one little box that they're in, and they'll open my sterile gloves, for example, for the case, they'll open a new pair for me, and if I don't use that new pair, they'll throw them in the garbage. And then I'm expected to go to the wall and take non-sterile gloves out of the box on the wall to transfer the patient over at the end of the case, when I could have used a pair that was already open, but because I didn't use them for the intended purpose, they are discarded.

There are many, many opportunities for reuse and repurposing that we just completely ignore at work. So I think it is an enormously important area because this is the source of the majority of our emissions and it provides an opportunity to speak to people not only about emissions but about natural resources too, this idea that it's not just about the carbon footprint. We literally don't have enough trees, enough sand for the silicone based products that the world wants, that we are decimating valuable or vital ecosystems to create the stuff that we're just going to throw out. That's not a tenable situation. So I would love a strategy for communicating that and then driving the desired behaviour change.

APPELT: Yeah, I think this is an area for DIBS and PHcL to collaborate, so we're excited to partner more. And it does remind me of some, some work I've seen looking at how in high stress situations like time sensitive situations, we often don't get creative with our thoughts. We kind of just like, this is like you said, “These gloves are for this purpose”. There's not like, “Oh, what else could we use this for?” Just no, on to next. So I think it is, like you said, a ripe area for a lot of interplay between behavioural insights and other tools. So definitely a fascinating ripe area.

MACNEILL: Also, DIBS and PHcL is my favorite combined acronym ever, mainly because it elicits an image of a dill pickle.

APPELT: We'll have a deli logo, oh, I'll take a DIBS PHcL on the side! Awesome. Well, a newer addition to my arsenal of questions pulls on this idea that behavioural insights there's this intention-action gap. And so we might want to be more sustainable, but then we struggle to follow through because either we don't know which action to take or we forget or various barriers. And like today, we've talked about all these big ideas, but maybe listeners don't have an idea of what they can do. So are there one or two actions listeners can take to support planetary healthcare the next time that they're patients?

MACNEILL: I think I'm going to take you a little bit upstream and say the most impactful thing people can do is not become patients. Recognize that the increasing demand for healthcare because of our aging population, our increasing burden of disease, and the increasing technological complexity is driving our environmental footprint in the wrong direction.

And while we can continue to kind of focus on that end of the line, and put Band-Aid solutions on, ultimately a healthier population is the best solution for everyone. So I want people to know that healthy lifestyle, diet, et cetera, behavioural choices that keep them in the best possible shape and free of illness is not only good for them, which is why most of us do it, but it is good for the planet as well. So that's kind of the main message I would want people to take home.

But then I think if people do find themselves in the situation of being patients, recognizing that more is not always better, and that there are risks and harms to everything and demanding really that their provider engage in those conversations around them and help them understand the pros and cons to make a suitable decision for them, as to whether that's something that's worth those risks. There's an actual process of shared

decision making where we want to understand people's own values and preferences and help situate the available evidence within their worldview. So understanding as patients that, “Yeah, throwing the kitchen sink at you is not always the best way to go”.

There's an organization called Choosing Wisely, which is dedicated to driving stewardship in health care, and they've partnered with many, many specialties to identify areas for improvement I guess within those specialties in terms of optimizing resource use, and Choosing Wisely has produced patient materials as well so that when you go to your doctor, you have a list of questions to ask. So if you're being recommended to have a colonoscopy, for example, here are the list of questions that you should ask to help you make the decision about whether that's right for you. So I would direct people to Choosing Wisely for further information on that.

APPELT: Wow, that's really great because I think a lot of times when people are in the patient mindset, it's more of a passive mindset of this is what I've been told. This is what I'll do. And so recommending the active and take steps before you get in there, like finding the Choosing Wisely materials, I think, is really powerful. And of course, your point about doing taking steps to not be a patient is very well taken. Like we said, it shouldn't just be about recovery, it should be about prevention and the promotion of health. And so maybe folks can listen to the next podcast episode while out for a walk or something. Well, we're just about to close up, but do you have a message for our BI practitioners in training?

MACNEILL: I would like them to know that they're doing the Lord's work Kirstin, this is so important. I feel like you hold this holy grail that I want to apply to my context to try to create the most successful possible change. I don't believe that problems or solutions are ever purely technological. Everything is so socio-technical, but I recognize that that is not necessarily a widely held belief, and there is far more importance and opportunities and resources allotted to technological solutions.

So things like BI that help us optimize the use of those technological solutions or create the best possible systems for their application are absolutely vital and undervalued, so please, please know that some of us really, really appreciate the work that you do.

APPELT: That's awesome. Yeah, and I think it's a great pointer too for students that a lot of times we think of other types of challenges. And I think this is an area that doesn't spring to mind for a lot of people as a suitable application for behavioural insight. So hopefully this will inspire folks to think about how BI can be applied to health care contexts.

MACNEILL: Yeah, that would be great.

APPELT: Well, thank you so much for joining today. This was-- I could talk for hours with you about BI, sustainability, planetary health, etc. So it's been a real treat, and I hope our listeners have learned a lot about this fascinating area. So thank you for generously sharing your time.

MACNEILL: My pleasure.

APPELT: Thank you for having me. And thanks to our listeners for joining us for another episode of Calling DIBS.