EPISODE – Author Interview: **"How Should Clinicians and Organizations Assess Risks and Benefits of First-in-Human Implantation of Investigational Devices?"**

Guests: Beatrice L. Brown, MBE
Host: Tim Hoff
Transcript by: Cheryl Green

Listen to the podcast

[bright theme music]

TIM HOFF: Welcome to another episode of the Author Interview Series from the *American Medical Association Journal of Ethics*. I'm your host, Tim Hoff. This series provides an alternative format for accessing the interesting and important work being done by Journal contributors each month. Joining me for this episode is Beatrice Brown, a Research Assistant for the Program on Regulation, Therapeutics, and Law in the Division of Pharmacoepidemiology and Pharmacoeconomics of Harvard Medical School and Brigham and Women's Hospital in Boston, Massachusetts. Beatrice Brown, along with Dr Aaron Kesselheim, is the author of *How Should Clinicians and Organizations Assess Risks and Benefits of First-in-Human Implantation of Investigational Devices?* in the September 2021 issue of the Journal, *Implantable Material and Device Regulation*. To read the full article and the rest of the September 2021 issue, head to our site, JournalofEthics.org. Beatrice Brown, thank you very much for joining me on this episode. [music fades out]

BEATRICE BROWN: Thanks so much for having me, Tim. Really looking forward to it.

HOFF: So, to begin with, can you outline what the key ethics points of your article are?

BROWN: Sure, happy to. So, the key ethics point that we really make here is that there are several steps that have to be taken to ensure that devices that are cleared through the 510(k) pathway are used in a way that accords with the bioethical principles of beneficence, nonmaleficence, autonomy, and justice, including conducting benefit-risk analyses for individual patients, conducting additional post-marketing safety, such as having some sort of database to have more active surveillance, adequate informed consent, and fair distribution of these devices. And because of the nature of the 510(k) clearance pathway, we have less concrete knowledge of the benefit and risks of 501(k) cleared devices than other devices that need to go through clinical trials, for example, before coming to market. So, what we really want to do is make sure that these devices are appropriate for any given patient and that the patient is ultimately fully aware of any risks that may come with a device cleared through this pathway.

HOFF: Great. Can you very briefly outline what that pathway is for our listeners who might not be familiar?

BROWN: Yeah, of course. So, this is for low- to intermediate-risk devices. And instead of going through human clinical trials and testing the device and collecting safety and efficacy data that way, instead, what the FDA does is that the manufacturer will submit data showing substantial equivalence to a prior cleared device, and that's deemed that then the safety and efficacy profile are supposed to be at least similar to that previously cleared, or predicate, device.

HOFF: Great. Thank you. What is the most important thing for health professions students and trainees to take from your article?

BROWN: Sure. So, I think there are actually really two interrelated, important points for health professions students and trainees to take from our article. So, the first is, in general, an awareness of the limitations of this pathway, so for instance, what remains unknown at the time of clearance and some concrete issues that arise like predicate creep and split predicates that make the benefit-risk profile of these devices uncertain.

HOFF: Mmhmm.

BROWN: And then the second thing that builds off of this is the importance of making patients aware of these limitations throughout the informed consent discussion. So, for instance, some patients may be more willing to undertake this sort of risk than others, especially if there's some sort of acceptable alternative and if the device in question may not offer a substantial additional benefit to that patient. And I think that some professionals may actually be wary of explaining the limitations of the 510(k) pathway because of some sort of concern that it may confuse patients or lead them to pick what the professional thinks is an inferior option. But as we see the medical field move more and more towards shared decision making, I think it's really important to actually leave that decision in the patient's hands and give them as much information as possible for sure to make that decision, so long as that information is presented in an understandable manner. So, really, just ensuring that the patient is fully aware of what they are consenting to and really laying out the benefits and risks of the device, which includes making sure they know what data, if any, the device was cleared based on.

HOFF: Sure. Thank you. And finally, if you could add one more important point to your article, what would that be?

BROWN: So, I think I would have really liked to dig deeper into the section we have on fair distribution of these 510(k) cleared devices and what exactly this looks like.

HOFF: Mm, mmhmm.

BROWN: So, there's a lot of questions that arise when we think of the principle of justice in this context. And we touch on some of them, but I think it's important to really think through the nuts and bolts. And I think these conversations in general have been coming up a lot more in the medical field recently. So, in this context specifically, how do we ensure, for instance, that hospitals in rural areas actually get timely access to these devices? But on the flip side, how do we actually really ensure that these devices aren't disproportionately used in vulnerable communities? So, even in this context, I think a great example is COVID-19 vaccines, and it's really thinking through systematically what exactly systems in place can look like to ensure that kind of access without, you know, with making sure that those vulnerable communities, though, don't get disproportionately used, so to speak. So, we have a lot of evidence of poor access to medical technologies and the disproportionate use of them, but not really enough discussion on how to address these issues in practice. [theme music returns]

HOFF: Great. Thank you. And thank you very much for taking the time and sharing your expertise with us.

BROWN: Of course. Thanks so much for having me.

HOFF: To read the full article, along with the rest of the September 2021 issue, visit our site, JournalOfEthics.org. Follow us on Twitter and Facebook @JournalOfEthics. And we'll be back soon with another episode of *Ethics Talk* from the *American Medical Association Journal of Ethics*.