

Title: Perosphere Technologies: Decision-Making in Coagulation**Participants: Dr Sasha Bakhru****Date: 20/06/2023****Prof Sasha Bakhru**

"I'm Sasha Bakhru. I'm CEO of Perosphere Technologies. Perosphere Technologies is a medical device company focused on developing and commercialising the first universal point of care coagulometer for use in both the emergency and outpatient settings.

Unmet needs in Anticoagulation in 2023

I think the unmet needs in anticoagulation remain measurement and reversal. So, the anticoagulants that are available today, the Directoral anticoagulants, Xarelto, Eliquis, Savaysa, Pradaxa, and the like, they're safe and very effective. However, in certain situations, you really want to know how anticoagulated a person is. And then above and beyond that, if you must intervene, for example, in the emergency, you'd like to know that the intervention worked right? And so, I think measurement and then the availability of easy-to-use effective antidotes, those two things remain a significant challenge today.

Products in Development

Today there are a variety of tests available in the coagulation space. Most of them offer narrow views of the coagulation cascade. For example, PTINR is great for warfarin, the old guard oral anticoagulant that folks used to use. aPTT is great for unfractionated heparin. But there really isn't a global universal test that can give you sort of a normal, abnormal answer irrespective of what anticoagulant you're on today. Our point of care coagulometer at Perosphere Technologies. Point of care coagulometer is a universal test. So irrespective of what anticoagulant a person is taking when they present to the emergency department after, for example, trauma with associated bleeding, with a spontaneous bleed like a gastrointestinal bleed or intracranial haemorrhage or requiring emergency surgery, you can ask the question, is this person normal or abnormal? Right? And then after that, if you do intervene, you can ask the question, did the

intervention work right? Have I returned this person to normal? So that's what the test that we're developing for which we have a CE mark in Europe and are anticipating a clearance in the United States, ultimately, that's what that test offers. That's not available today. Similarly, on the reversal side, there are a variety of options available today between specific reversal agents like andexxa that's being studied for other indications like emergency surgery, and then also replacement therapies like prothrombin complex concentrates, fresh frozen plasma, and the like. But again, without a way to know that you've successfully reversed, I think even studying those things in clinical trials remains a challenge. We talk a lot about the emergency and measurement there, and I think that's a clear unmet medical need that we're trying to address. However, there's a lot of other utility that we're exploring by way of clinical trials supported by government grants and the like. Our coagulometer can measure not only drug induced anticoagulation, but also, for example, we can pick up intrinsic coagulopathies, genetic coagulopathies, hemophilias factor five, Lyden, von Willebrand's disease, things like that, also potentially acquired coagulopathies after cancer or sepsis. So, I think there's a lot of potential utility that we're exploring by way of clinical trials that will be running in Europe as well as in the United States. We hope that there are a lot of additional applications that can be realised for this device. But of course, the first focus is on the emergency department. We focus significantly on the emergency department and measurement there. But I think that another unmet need is measurement in the outpatient setting. Folks that present to the emergency department with a bleed frequently can have higher than normal levels of these anticoagulants in their blood because they're not clearing them right. They may have renal insufficiency or hepatic insufficiency, maybe low BMI or history of major bleeding or clotting. For one reason or another, you're worried about accumulation of these drugs that they're taking daily in their blood over time. If you could in the outpatient setting, measure once or twice a year, right, when they visit their prescribing physician's office or a specialist office, like a cardiologist, if you could measure and identify those folks that have unusually high clotting times, you could potentially catch that before they end up in the emergency department with a bleed. And so, I think that's another important unmet need to be addressed in anticoagulation therapy.”