Q&A with Stephane Meystre, CEO and Founder of Clinacuity, Inc. adding Intelligence, Functionality and Security to Electronic Health Records

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CEOCFO: *Dr. Meystre, what is the concept behind Clinacuity Inc?*
Dr. Meystre: The concept behind Clinacuity is adding intelligence to health records and making it possible for healthcare providers to use it proficiently or more proficiently. It unlocks rich and detailed clinical information from all the texts found in the electronic health record.

CEOCFO: *What are the challenges in creating a user friendly solution?*
Dr. Meystre: We integrate or add functionality to an existing commercial health record system such as EpicCare. We make it possible to have an automatic dynamic summary of the key information about the patient. Instead of having healthcare providers search for this information by reading multiple text notes, reports, letters and so on, which is typically the case now, we apply artificial intelligence to extract all this information automatically from all these notes and then make it available in a summary dashboard. This makes it possible to have key information about a patient in a few minutes instead of hours or even days.

CEOCFO: *How do you get all of the nuances and maybe a stray finding that a medical professional has somewhere in the mix, that may be lost in a summary?*
Dr. Meystre: Just to make that very clear, when I say summary I do not mean a text summary. What I mean is a display of groups or lists of structured, coded information about a patient. This includes the problems or allergies a patient suffers from, the medications or other treatments the patient is taking, recent investigations, recent and abnormal investigation results and so on. All of this information is structured and coded. This means that it is linked to multiple functionalities. You can see the source of it if you do not know about it or want to verify it. We do not add anything automatically to the record without verification. We always have a human in the loop to do a final validation. However, it is just one click, so it is less than a second instead of a much longer, manual process. What we add is validated and verified by our experts; always.

CEOCFO: *Are there certain types of information that are easier or harder to present or to pick up?*
Dr. Meystre: No, there is a large variety in terms of difficulty. Some information that is fairly standardized, like for example medications, is not very difficult to obtain. Other information such as medical problems is more difficult. The definition of what should be a problem varies a great deal. It varies between specialties; it varies between healthcare organizations, even between individuals. Therefore, we add something that answers the needs of the eighty percent of the majority and the remaining twenty percent may want something else and will have to do a little more manual validation, but we can still

accommodate their information. Therefore, problems are challenging, but they are a central part of the electronic health records information content, so we are tackling that.

CEOCFO: *Are providers looking for a better way in general?*
Dr. Meystre: I think so. I am not sure they are aware they could, but all of those that we talked to, and this is soon to be close to one hundred, they are all unanimous that something like what we are doing would help them tremendously. They all complain about the difficulty of finding information. The issue is that this problem is getting worse in general. The electronic health record is becoming more and more like a dump of information from multiple sources, trying to make it all available in one point without really thinking about the integration and the ease of access to the information. Therefore, we are in a transition phase now that makes it very hard for healthcare providers to acquire all of this information.

CEOCFO: *Is CliniWhiz the name of your product or is that one phase of what you can do? What is available today?*
Dr. Meystre: It is the name of the product. Today we do not have a commercial product for sale broadly yet. We are still in advanced development, so we are working with two alpha sites; the Medical University of South Carolina and the University of Utah Healthcare. There is also another product that we are preparing that might probably be ready before that. The latter is aimed at clinical researchers or users of the clinical information for secondary use; not for care of the patient, but for research, for quality improvement, for public health and all these applications. What we do for them is to make it easier to access the information and also protect the patient's privacy by automatically de-identifying the text in the electronic health record. Therefore, we apply the HIPAA privacy law with a method called Safe Harbor. We look for a list of eighteen categories of protected health information that has to be removed for information to be considered de-identified. When de-identified, the information can be used without the informed consent of the patient, which helps researchers tremendously. De-identification also protects the patient's information privacy.

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CEOCFO: *What have you learned as you have had the two sites going and people are actually working with what you have done? What changes have you made? What suggestions have you heard? What surprised you?*
Dr. Meystre: It is probably the difficulty to integrate with the commercial electronic health record systems. Even if they officially say and advertise being open and wanting to share and collaborate with others, in practice it is difficult. It is feasible, but it is difficult and more difficult than it should be, I think. It is becoming easier with new standards like HL7 FHIR, but still a significant effort.

CEOCFO: *What is your strategy as you continue and when you are ready to go to market? Do you have a plan to gain attention?*
Dr. Meystre: Yes. We are working on several channels. They depend on the commercial electronic health records system vendors. For example, Epic, the one we are working with first, just opened something like an app store. They call it the App Orchard. It is becoming the preferred source of information for everything that integrates with the Epic electronic health record system. This is a preferred channel for us to connect with all existing customers of this commercial electronic health record system. Then another channel is through the academic biomedical informatics network and organizations, through scientific publications about the work we do and demonstrating its quality to a large network of healthcare organizations, starting with the academic centers that have links with this network. Then it is more word of mouth between these organizations.

CEOCFO: *How do the accountability regulations come into play in helping people understand the importance of what you have?*
Dr. Meystre: It could be complicated. Legally, as I mentioned, we do not officially add any new information to the patient record, but we make it extremely easy for the healthcare provider to do themselves. We have also investigated that with the Food and Drug Administration that regulates medical devices, medications, and so on. What we are doing is officially

not considered a medical device by the Food and Drug Administration and is therefore not subject to any kind of regulation or limitation in this regard.

CEOCFO: *Are you funded for the next steps?*
Dr. Meystre: Yes, we are funded by federal technology transfer grants from the National Cancer Institute and the National Institute of General Medical Sciences.

CEOCFO: *Will that take you where you need to go or will you be seeking partnerships or outside funding?*
Dr. Meystre: It will take us to a point where we have sufficiently demonstrated qualities and developed our products to then raise additional funding, venture capital funding most likely.

CEOCFO: *What was the biggest challenge in putting together a system that does what it should?*
Dr. Meystre: There are multiple challenges, starting with the integration with the commercial electronic health records system. Then the technology itself is fairly complex and requires a lot of new technology and research to perform at a sufficient level of accuracy, speed and robustness. These are the main challenges. Then after that, finding experts and employees with training in our field is also difficult. Therefore, we end up having to train all of them, and then some get hired by larger companies that also do some of this kind or work.

CEOCFO: *Why are you confident that this will be successful, both as a concept and also that Clinacuity will be successful as a company? How*
Dr. Meystre: Yes, I think so! I am pretty confident because of the feedback that I receive from potential customers and users about what we are doing. It is overwhelmingly positive and encouraging. We are really trying to answer a deep pain that providers and healthcare organizations have and they are really anxiously waiting for us to help them with that.

CEOCFO: *What would be involved in implementing a system for an organization?*
Dr. Meystre: It involves multiple levels. At the users level, only very little training is needed. This is something we specifically wanted. Our system should not disturb their workflow and the way they use the electronic health records system. It completely integrates with it. They should be aware of where the information came from and how it was provided to them. In terms of functionality, it is really straightforward. This could be the most difficult part, but in our case, it is not. Besides that, at a more technical level, installation of the backend system that provides the intelligence to extract and analyze all this information from the electronic health record is another effort, as onetime effort. Our system integrates with one commercial electronic health record system, and we will have to work on integrating and interfacing with other electronic health record systems. Then after that, efforts depend on the customer, but it is most likely a semiannual verification of the accuracy, adaptations if needed, and possibly support.

CEOCFO: *There is so much to look at in healthcare and healthcare technology particularly. Why pay attention to Clinacuity Inc?*
Dr. Meystre: For at least two reasons. One is that we are providing a functionality that is strongly needed and no one else provides. Several companies or competitors are around what we are doing, but not exactly in the same field. Secondly, we come from the healthcare domain, not information technology, and have an excellent understanding of healthcare provider needs and of the system they work with.