Transcript Details
This is a transcript of an educational program. Details about the program and additional media formats for the program are accessible by visiting: https://reachmd.com/programs/medical-industry-feature/easing-the-emergency-department-pressure-with-high-sensitivity-troponin-t/11183/

ReachMD
www.reachmd.com
info@reachmd.com
(866) 423-7849

Easing the Emergency Department Pressure with High-Sensitivity Troponin T

Announcer:
Welcome to ReachMD. This medical industry feature, titled “Easing the Emergency Department Pressure with High-Sensitivity Troponin T” is sponsored by Roche Diagnostics.

Here’s your host Dr. Jennifer Caudle.

Dr. Caudle:
At a time when clinicians and healthcare administrators are being pressured to improve patient outcomes while reducing the cost of care, the U.S. healthcare system is still paying five billion dollars a year for emergency department visits for chest pain. But out of the six million ED consultations each year for chest pain and symptoms of acute myocardial infarction, or AMI, less than 4% of those visits lead to a diagnosis of AMI. Luckily, quick identification of those few patients can be enabled through the adoption of Gen-5 troponin T. So how is this assay being adopted?

This is ReachMD and I am your host Dr Jennifer Caudle. In the first episode of this three-part series, we’ll be discussing the adoption and impact of Gen-5 troponin T from an emergency department perspective. Here to share his perspective with us is Dr. Christopher Baugh, Vice Chair of Clinical Affairs at Brigham and Women’s Hospital, and Associate Professor at Harvard Medical School in Boston Massachusetts. Dr. Baugh, welcome to the program.

Dr. Baugh:
Thank you for having me, Dr. Caudle. Happy to be here.

Dr. Caudle:
To get us started, Dr. Baugh, let’s talk about the reasoning behind your organization’s decision to adopt Gen-5 troponin T.

Dr. Baugh:
So, we were following – we, meaning the clinical leadership at my hospital at Brigham and Women’s Hospital, namely a triad of operational leaders from the emergency department, cardiology, and the lab. We were following the European literature on cardiac biomarkers with great interest for the better part of the previous decade when high-sensitivity assays had been in routine use in those countries. The FDA had not approved an assay for use in the U.S. until January 2017, and so we were kind of on the sidelines until that time. As soon as the FDA had announced their decision to approve high-sensitivity assay, the local leadership group, myself from emergency medicine, and my colleagues from cardiology and the lab started having meetings as soon as February, the month following the approval announcement to try to figure out how we can plan the adoption of the assay in our own institution. Our excitement around the opportunity to change our assay was really based on our assessment of that literature showing some of the advantages of a high-sensitivity assay versus other contemporary assays that were previously used in Europe and in the United States.

Dr. Caudle:
Looking back, can you talk about your role during the pre-implementation process of this adoption?

Dr. Baugh:
Yes. My role started as the local emergency department champion at my hospital. I met with champions from the cardiology group in Dave Morrow and Ben Scirica, and then a champion from our lab named Petr Jarolim. We quickly found that there was actually interest at the health system level to make an assay changeover at a total of six hospitals. So, our local group then ended up docking into a health system wide group that was led by a project manager supported by a data analyst. We quickly brought in other stakeholders as

the group proceeded and the work product became more clear. We ended up defining what our local hospital guidance is going to be, and made an algorithm based on that guidance. The algorithm quickly identified which populations of patients would be eligible for this assay and the timeframe between sampling of troponin values. We also integrated the heart score, which is a clinical decision tool that can help identify low, intermediate, and high-risk patients. We integrated that with these troponin values to help the clinicians make sense of the results and decide on the best disposition for their patients. We ended up publishing our algorithm in *Critical Pathways in Cardiology* in the winter of 2019 and are now in the process of studying our post-implementation results. Just to take a step back for a moment, the process really started in February of 2017 for us, and we ended up going live in April of 2018, so a little over a year from when we first started meeting about the implementation to when we went live. We did have a couple of delays in our implementation date due to information services delays because the troponin assay was embedded in so many order sets, that it ended up taking more time than we thought to change over the assay. We then had one more delay around in-service, as one of our groups needed more time to make sure that their group was messaged around the implications of this change and how they should interpret their results.

Dr. Caudle:
And what was your involvement at the go-live?

Dr. Baugh:
So, I was one of the main leaders at my hospital. My hospital is part of a larger healthcare system. The decision was made at the health system level to adopt the new assay and go live on the same date at six hospitals. So, I went from being the champion at the hospital level to being champion at the health system level. As we came together as a much larger group with multiple hospitals having representation, I had the opportunity to develop a guidance for local adoption in terms of which pathway we would use and how we would educate clinicians around how to use that pathway. [We developed] an in-service that was very focused and meant to be consumed on handheld devices such as phones. I did that with my collaborator from Massachusetts General Hospital, who is Toby Nagurney. We also recorded it and so, I had input into creation of that guidance, and then the materials, the in-service decks of PowerPoint slides and videos that were created for internal use so that staff was well educated. At the time of the go-live, they could feel confident about their new change in practice, how they would implement this new assay into their clinical decision-making. As the medical director at the time for the emergency department, I also put myself out there as a resource to clinicians in real-time if they needed any at-the-elbow support. I put my cell phone out there and told people to call me day or night if you have any questions about how to interpret this assay, and I am happy to help them with those decisions. I did get a few calls, but maybe not as many as you might assume. I think me putting that out there created a vote of confidence for the clinical team that we had thought through all the questions that needed to be answered for this assay and felt like it was the right thing to do for us and our patients.

Dr. Caudle:
How has Gen-5 troponin T impacted your role as an emergency physician?

Dr. Baugh:
Well, I would split that answer into two pieces. One, as a leader of our department operations, currently vice chair, previously medical director, ultimately I'm responsible for clinical care in our department, and so I want to make sure our clinicians are delivering the highest quality, most efficient care to our patients as possible. I feel like this assay helps us accomplish that goal by allowing us to detect smaller events and events earlier than we would have otherwise with other non-high-sensitivity troponin assay. The other role that I play is that of an emergency physician. So, I see patients every week and I use this assay, I would say, at least a few times on every shift. I also want to make sure that when I'm personally delivering care to the patient, that I am using the best possible tools available to me. I feel like a high-sensitivity troponin assay is the best assay available to assess for myocardial injury. Using serial troponin measurements, this is more than one test during an ED visit helps to assess whether there is significant change in the troponin value over time, this helps us discharge patients who do not have significant changes. It helps us also identify more clearly patients who are having significant changes in their troponin values who may need inpatient care or more aggressive intervention.

Dr. Caudle:
For those just joining us, this is ReachMD. I'm your host Dr. Jennifer Caudle and today I'm speaking with Dr. Christopher Baugh about high-sensitive troponin T. So, Dr. Baugh, we spoke a bit earlier about the adoption of this assay at Brigham and Women's Hospital, but now let's shift over to the impact that you've seen post-implementation. What's the biggest benefit that you have noticed from the adoption of Gen-5 troponin T?

Dr. Baugh:
So, I'll speak on behalf of my hospital, Brigham and Women's Hospital. We have some preliminary data after the first six months of going live with the new assay. We have a manuscript in preparation with all the hospitals that went live in our health system over a larger period of time. I can tell you just in the frame of six months at my hospital, what we experienced was a relative decrease in the percent of patients being admitted to inpatient services, as well as a decrease in the percentage of patients being held in the hospital

for our ED observation unit, and a corresponding increase in the patients that we are sending directly home from the emergency department without an inpatient stay and without an observation stay. So ultimately, we're getting more patients home. We are also doing that with less stress testing, so cardiac imaging stress testing such as an exercise tolerance test or nuclear perfusion test. We saw a decrease in that after we started using this new assay and started doing serial sampling, as I previously mentioned. When I look back at our practice before adopting this new assay, we were doing a lot of single troponin measurements with the contemporary assay, and I feel like it was being used at my hospital at least more commonly as a generic test that you might order for someone where you're not sure what's going on with them. As a result, when we switched to the new assay, one of the lessons that I've really tried to hammer home is that you need to have a reasonable pretest probability for acute myocardial infarction or myocardial injury to order a high-sensitivity test. As a result, we found that we were ordering the test on fewer patients, but that ended up helping us with our discharge rate, as well.

Dr. Caudle:
And then looking at the big picture here, how has Gen-5 troponin T impacted Brigham and Women's Hospital as a whole?

Dr. Baugh:
So, I'm speaking mostly for the emergency department since I'm not using it in the perioperative or inpatient space personally, but what we've seen as a whole is a change in practice with a shift towards serial troponin measurement, and decreased reliance on cardiac imaging and cardiac stress testing that has allowed us to send more people home directly from the emergency department. In addition, our initial review of our administrative data did not produce any signal that we are missing cases of myocardial infarction that we are sending home from the emergency department. I definitely want to set a caveat that these are not patients enrolled in a prospective study with 100% follow-up like you might do in a prospective study. But just looking at the administrative data that we have available to us, I'm really encouraged that we're able to send more patients home without a signal that we're causing any harm to patients. So, both from an operations perspective, given my role in the leadership of our department and as an emergency physician, personally using this test for my patients multiple times per week, this is a test that has made us better at our job taking care of patients with suspected myocardial infarction.

Dr. Caudle:
Lastly Dr. Baugh, do you have any words of advice for institutions that are considering adopting high-sensitive troponin T?

Dr. Baugh:
I do. I would say start with a group of a triad representing emergency medicine, cardiology, and lab to kind of kick off the project. Then very quickly you're going to want to pull in stakeholders from other key groups, including your information services group. That was certainly one that ended up causing a delay in our go-live. Then internal medicine, anesthesia, and if you have trainees at your hospital, the trainee leadership who will certainly be involved in the in-service and education component of this. Plan out your strategy for messaging this to staff. You want to set a go-live date that is, I would say, at least about six months in the future from when you first start having these meetings around changing over the assay. Then you also have to decide what you're going to do with your old assay. My recommendation would be to retire it on the day that you launch the new assay. Perhaps let patients who have started a workup with an initial troponin using the old assay to finish their evaluation using that same assay, but then quickly switch over so that all new cases are using the new assay. That would ultimately make it more simple. I would also say, as a final word to develop some guidance around how to interpret results for special populations of patients including patients with a history of renal disease, as you will see these patients in the emergency department and will need to understand how to evaluate their troponin results. This is really the strength of the serial troponin measurement that I've talked about a couple of times today. Because that is going to be able to help you distinguish between a chronic troponin elevation versus an acute one associated with an event that you'd want to diagnose and treat differently.

Dr. Caudle:
Those are some great pieces of advice, and with that takeaway in mind, I would like to thank my guest, Dr. Christopher Baugh, for helping us understand the adoption and impact of Gen-5 troponin T from an emergency department perspective. Dr. Baugh, it was great speaking with you today.

Dr. Baugh:
It was my pleasure, Dr. Caudle. Thank you for having me.

Announcer:
This program was sponsored by Roche Diagnostics, doing now what patients need next. If you missed any part of this discussion or to find others in this series, visit ReachMD.com/Troponin.

This is ReachMD. Be part of the knowledge.