Supplementary Table-3: Synthesis of Cardiologists' Quotes

Domains	Select Quotes
Practice expectations	*-'We are all driven by RVUs [relative-value-units – a measure to calculate clinical-productivity]'.* *-'The more normal echocardiograms you can read, the faster you can get done. The ones that are inappropriate actually don't take much time.'*
Patient preferences and expectations	*- 'In private practice, people tend to be kind of demanding, [saying] 'I passed out and you are not doing any tests?' or 'I have an infection and you will not give antibiotics?'. They expect a return on investment if they have insurance.'*
Using tests as therapeutic interventions to allay patients' anxiety	*-'I have to say that if patients are asking for something, I will explain why it is, or is not, needed and what my rationale is, you know if a patient is requesting their echo more frequently, or a stress test that they may not need, they are physically very active, it is a grey area, it is not a test that is going to hurt the patient, the risk of the test is low, their insurance covers it, the patient is feeling uncomfortable without that information, so the test almost becomes a therapeutic test [intervention].'*
Peer expectations	*- 'The social component of trying to collaborate and cooperate with other consultant services [infectious-disease] sometimes outweighs the absolute clinical indications.'*
Protocols driving increased testing	*-'The EDs [emergency departments] have a flow chart – if the D-dimer is positive, they order a CT [computerized-tomography] angiogram, if the troponin is negative they get a stress test, if the troponin is positive, they get a cardiology consult and expect a [cardiac] catheterization.'*
Appropriate use criteria	*- 'But when you look at the appropriate-use-criteria, there is very little that falls in a black and white category of absolutely yes and absolutely no, they are really wishy washy, especially the imaging ones'* *- 'You know I still see physicians getting routine nuclear studies because they had CABG (coronary artery bypass grafting) in the past, that is not in the appropriate use criteria, I think a lot of people just ignore it. I don't know if it is force of habit or unfortunately if you are in an outpatient setting, you know people do much better financially if they order tests.'*
Handling uncertainty. Perception that misdiagnosing cardiac problems may have major consequences	*- 'The risk of missing something is so strong and you have relatively benign tests, although echocardiograms are not cheap, you know they are non-invasive, you are going to be more liberal in doing them'* *- 'If I feel like there is a lot of uncertainty in my decision and there is not enough data, then I want to be more certain, you know particularly in our world which is life or deaths; if you make the wrong choice, patients suffer in a big way.'*

Issues with Guidelines	*-'I find the European guidelines to be far easier to comprehend than the ACC [American College of Cardiology] guidelines. I know they want to be complete, but they are so overwhelming. Even the executive summaries are really complex.'*
Reasons for performing echocardiograms when not indicated based on guidelines.	*-'I know that it almost is never revealing if the physical exam is normal; on the other hand, the echo is a benign test, most people's insurance covers it. Patients are incredibly reassured by an echo, a lot of times we get an echo because the patient is very concerned even when it is purely a vasovagal episode. It is like everybody else responded; it is a ridiculous response in a way, but most people get an echo.'*
Insurance company rules influencing treatment decisions	*-'What we do around here at least my experience with the life-vest [wearable cardioverter defibrillator], and I think Medicare is the big driver for this because they are very particular what they will reimburse for when I talk to my electrophysiology colleagues , it is 90 days after CABG [coronary artery bypass grafting] here before they would even consider a device.'*
Opaque nature of Insurance	*-'For patients that do not have perfect insurance, they will get hit with charges, and there is no transparency. Essentially no transparency in terms of what they will get billed, and they may get told one thing and billed another. '*
Cost considerations	*- 'Maybe 20-30% of my patients want to know about the cost to them. It also depends on what insurance or what income category they belong to.'* *-'Even if they have insurance, if they have a high deductible, they may have to pay for most of the cost of the test out of pocket.'*
physician cost profiling	*- 'Individual providers get a report every quarter showing their cost of care and how they compare to their peers, where were the opportunities for saving, for example, for some people it may be length of stay, for others, it may be pharmacy utilization and for those who do procedures or surgeries, what is their costs compared to their peers; it changes behavior dramatically.'*
The Canadian Context	*-'I think there is also in many cases a personal financial bias that is exemplified by their chronic stable coronary patients, where many people who run a private practice have echo machines, have nuclear imaging in their office and there is self-interest in ordering these tests because they generate a lot of income. And patients, funny enough, don't seem to dislike a modest amount of excessive testing. They think they are getting better care even though they may not be.'* *-'We have had similar issues with lower socio-economic areas in Canada. So, if you go to Etobicoke, where there is a large population of poor, similar to inner cities in the US, hypertension is rampant, dyslipidemia is rampant, and people cannot afford their medications.'*