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Assessing the Value of Medical Technology

EVIDENCE-BASED TECHNOLOGY ASSESSMENT

ReachMD would like to wish you a happy and healthy New Year and with each New Year comes a fresh start. As we look ahead, ReachMD is proud to present this month' special series - Focus On Future Medicine.

Evidence-based technology assessment may be an unfamiliar term to most of us, but it is gaining momentum in the healthcare industry and may be a solution to controlling healthcare products with the support of everyone from Federal Reserve Chairman, Ben Bernanke, to the Institute Of Medicine. Welcome to ReachMD, the Channel for Medical Professionals. I am Bruce Japsen, a healthcare reporter with the Chicago Tribune and with me today is Winifred Hayes. She is the Founder and Chief Executive Officer of the Hayes Group. Hayes Inc. is a health technology, research, and consulting firm based in the Philadelphia Suburb of Lansdale, Pennsylvania and Hayes has her Doctor of Philosophy degree from the Johns Hopkins University School of Hygiene and Public Health and is also a graduate of the University of Maryland School of Nursing with primary care nurse practitioner and Master of Science degree. Under Dr. Hayes' leadership, Hayes Inc. has become a leader in evidence-based reports to health plan; hospital's manage care organizations, government agencies, and healthcare system.

MR. BRUCE JAPSEN:

So tell us Dr. Hayes what is this seemingly complicated idea of evidence-based technology assessment and quite frankly why is Ben Bernanke so excited about it?

DR. WINIFRED HAYES:

Well, I think its an expression of the whole movement towards evidence-based decision making in medicine, and health technology assessment is a term that is used to describe a systematic evaluation of the evidence and we mean by evidence clinical trials and other research data that has been generated to evaluate new emerging, evolving, even old health technologies and by health technology, I mean a drug, a biologic, a genetic test, a laboratory study, a piece of medical equipment like an imaging piece of equipment, it could be a medical device, it could be a procedure, its anything that we do in the context as health professionals in providing care to patients. So, that is what a health technology is. So, it's gaining momentum because the industry recognizes that we have to have some reliable and independent way of evaluating the clinical benefit and the cost benefit of these things that we use in providing healthcare to patients.

MR. BRUCE JAPSEN:

And so who is calling for it, I find it interesting when talking to some other people that, you know, Federal Reserve Chairman, Ben Bernanke, the Institute of Medicine, the Joint Commission, Blue Cross Blue Shield Association and others. It's interesting because we hear such a potentially complicated term you often don't hear it from the Federal Reserve chairman, but tell me a little bit about why they would be excited about it.

DR. WINIFRED HAYES:

Well, I think they are excited about it for several reasons. First of all, I think it's generally acknowledged that our healthcare system in this country is in deep trouble, it's kind of out of control, our costs are running away with us, we are approaching 17% of Gross National Product spent towards healthcare and that's far in a way higher than any other country in the industrialized world. So, we have got runaway cost and on the flip side we are not getting the value for that expenditure. We do not have the best infant mortality rate. In fact, we are one of the lowest ones again in the developed world. We don't have life expectancy at a level that many other European countries do and we have a whole segment of our population who are not accessing care either in a timely way or in a quality way, so we have this uneven distribution of healthcare services in our country and finally we have recognized that we have growing issues around healthcare safety and the appropriate use of the interventions that we employ to treat patients or to prevent disease are part of that. So it becomes imperative that we really know the value from a clinical sense as well as a cost-benefit sense of the devices and drugs and procedures that we use to manage patients. So, it is part of this solution to dealing with what has been characterized by Mark Chassin of joint commission as under-use, overuse, misuse, and waste in the utilization of health technology.

MR. BRUCE JAPSEN:

And if you could walk us through an example of how technology assessment would work that a doctor might even be familiar with now or something that's may be going on in its infancy perhaps in a place where something is further along.

DR. WINIFRED HAYES:

Okay, well, health technology assessment as a term is really defining a very systematic review of scientific evidence, so it would begin by asking the questions that we want to answer about the use of a device or drug or whatever intervention it is we are trying to evaluate.

MR. BRUCE JAPSEN:

Like robotic surgery?

DR. WINIFRED HAYES:

Exactly, so the questions one would ask about say a robotic surgery device would be, first of all, is it safe, is it effective and how effective is it as compared to the other surgical approaches that might be used for the same clinical application. We want to know are there a subset of patients that are most likely to benefit and we want to characterize that subset. Who is it going to be useful for and who might it be contraindicated for. We then want to know as we answer those questions what the quality of evidence is that addresses those questions, and quality of evidence is determined by the research design itself, how it is executed, how representative that population of subjects or patients are to a general population with the same kind of problems, was the study large enough, those are the kind of issues we look at when we look at the quality of evidence. And then finally another question that I think we should be asking more and more often is are we going to get value in the use of this technology, is it cost beneficial, is it cost effective, how does it stack up when we compare this technology with the competing technology. So, those are the fundamental questions that get addressed and the

methods that are employed begin with a systematic and comprehensive review of the scientific evidence and then there is other data sources that are also important to the process. We want to know a little bit about some of the business implications for the use of this technology. We want to know what kind of impact it might have on staffing. We want to know will it impact the time available for patients that's provided when a physician gives care. In other words, in the context of use is it going to increase physician time, is it going to decrease physician time, is it going to be an acceptable technology, does it have side effects that are going to be particularly problematic.

MR. BRUCE JAPSEN:

Well, if you are just joining us or even if you are new to our channel, you are listening to the Clinician's Roundtable on ReachMD, the Channel for Medical Professionals. I am Bruce Japsen, the healthcare reporter for the Chicago Tribune and my guest today is Dr. Winifred Hayes, who is the Founder and Chief Executive Officer of the Hayes Group and we are taking about evidence-based technology assessment and Dr. Hayes was just telling us about examples of why its necessary, do we need robotic surgery, does robotic surgery have a proper place, CT scans for cardiology, etc.

Dr. Hayes, if you could give us an example, who would do the evidence-based technology assessment because I think that's something that physicians are like, all right, who is going to be the evaluator here.

DR. WINIFRED HAYES:

Great question Bruce, the people who do this kind of work are scientists and whether their original background is as a clinician, a physician, a nurse, a pharmacist, or they began their professional career with a Ph.D., what we are looking for, what people look for in terms of qualifications are people who really understand science and how to evaluate science, so most of these people have doctoral degrees in the field of science, it might be molecular biology, it might be epidemiology, but they are scientists.

MR. BRUCE JAPSEN:

And is there some concern that also if people look at this as a cost-saving tool that perhaps we are not getting a bang for our buck and there might actually be some more expensive new technologies that aren't being used, but should be?

DR. WINIFRED HAYES:

Absolutely, and I think it works both ways. I think there are new technologies that evidence has shown provides a clinical benefit and they are not used as systematically and as regularly as they should and a good example of that might be beta-blockers following a myocardial infarction or heart attack, and then on the flip side, they are very expensive technologies for which the evidence has not shown a demonstrated clinical benefit and they might be a lot more expensive than other approaches that might be used to treat the same patient and condition. And an example of that in some settings might be the robotic surgical device and there are a lot of variables that can impact that and the variables have to do with the skill of the surgeon, the learning time that it takes a surgeon to become proficient, the volume of patients that are suitable candidates. It has to do with the facility itself and it has to do with the application. So, for example with robotic surgery, it can be used to perform minimally invasive cardiac procedures like a bypass, coronary artery bypass surgery. Generally speaking, this particular device, its limitation is generally single-vessel disease, it's very difficult to do something with a robotic device for multivessel diseases and when you compare the use of a robot against a manual minimally invasive approach, the data really doesn't demonstrate that the robotic device is superior to the other minimally invasive approach and it can cost a lot more, the OR time is usually greater, the device itself is quite expensive and the maintenance is expensive. So, that's a situation where it's unclear based on the evidence that we are really getting our bang for the buck, so to speak.

MR. BRUCE JAPSEN:

And are there some successful examples out there where perhaps a group of providers, doctors, and hospitals are working successfully on this technology assessment with perhaps an insurance company or could you give us an example of that and where this might be headed?

DR. WINIFRED HAYES:

Well, I think there are a number of examples to use where this process has been well integrated into their evidence-based technology, strategic planning, and technology acquisition decision making and one of the best I think is Kaiser Permanente. Of course, Kaiser is a bit unusual in that it's physician group which are part of the Permanente Medical Group are employees, but they have a very robust process of evaluating first and foremost the evidence that supports these technologies and then moving on to looking at the business case for the utilization of that technology. Other institutions that also do a good job, I would name Geisinger which is here in Pennsylvania, Bon Secours Health System is putting in place a rigorous approach to technology evaluation. Anova, which is in Northern Virginia, is another institution that does a good job. These are just a few of the places that have really invested in this kind of process. Technology assessment also supports another difficult area for physicians, an area that we call physician's preference items. These are typically medical technologies, a lot of times they are surgical devices for which physicians have a real preference of one brand over another and its in the interest from a cost perspective for the hospital to standardize around one brand and often times a way to get out the best brand for that hospital begins with an analysis of what does the scientific evidence say. Is their one product brand that in fact is demonstrated better than another product brand? In many cases there is not, so that then moves the discussion to a different level where the physicians and the hospital involved can really talk about pricing and other kinds of issues when there is not a superior brand from a clinical sense. If there is a superior brand from a clinical sense, then that does drive the decision.

MR. BRUCE JAPSEN:

Well, we would like to thank our guest who has been Dr. Winifred Hayes. She is the founder and CEO of the Hayes Group and we have been talking about evidence-based technology assessment, which doctors and quite frankly consumers are going to be hearing more about in the evaluation of their procedures and the technology that they used which could potentially save money and give them better care.

You have been listening to the Clinician's Roundtable on ReachMD, the Channel for Medical Professionals. I am Bruce Japsen of the Chicago Tribune. I have been your host and I would like to thank you today for listening.

Thank you for listening to ReachMD on XM160 and this month's special series – Focus On Future Medicine. Free CME on ReachMD is now easier. Link to ReachMD's free custom application for your iPhone at www.reachmd.com.