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**Over-diagnosis – THE Problem?**
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Whether you favor health reform through external governmental pressure , or healthcare transformation through the generative power of personal passion and drive, no one is in favor of the status quo in healthcare delivery in the United States. Everyone who cares about the USA wants Americans to be healthier. On these premises, would we not all embrace a method of improving health which involves no cost; which actually creates tremendous savings in healthcare, and which can be instantly implemented without delay?

Dr. H. Gilbert Welch, Professor of Medicine at the Dartmouth Institute for Health Policy and clinical Practice, has "the way." His solution is to change the "diagnostic and treatment thresholds" for illness, thus making fewer people ill by definition. He further argues in a newspaper column for the *Los Angeles Times* and the McClatchy-Tribune news service, "To have any hope of controlling health care costs, 'doctors will have to raise their diagnostic and treatment thresholds'. And higher thresholds would be good for more than the bottom line. Less diagnosis and treatment of disease would return millions of Americans to normal, healthy lives. That's right: Higher thresholds could well improve health."

The philosophical question at the root of Dr. Welch's idea is, "Do definitions create reality, or only describe or define an objective reality?" And secondly, "Would simply changing the definition of health effect objective change in the state of an individual's health?" Dr. Gilbert would have us think it does. He asserts that, "Diagnostic thresholds that are set too low lead in turn to a bigger problem: treatment thresholds that are too low. Diagnosis is the critical entry step into medical care – getting one tends to beget treatment. That's a big reason why we are treating millions more people for high blood pressure, diabetes, osteoporosis, glaucoma, depression, heart disease – and even cancer." Dr. Gilbert's colleagues and students delight in his clever and novel ideas. "Hurray," they shout, "the solution to the healthcare problem in American is as simple as a definition." If we tell you you are not sick; if we tell you you are not at risk of getting sick; you no longer have to be concerned about your health. Problem solved.

The pesky problem with this is science and facts. In 1880, no one was diagnosed with diabetes. Did the first mention of a condition which was probably diabetes in 1200 BC, or the postulation that it was due to excess sugar in the blood in the late 19$^{th}$ century create, diabetes or did these developments describe a condition that exists whether we define and acknowledge it or not? Has the expansion of our knowledge about diabetes created the diabetes epidemic in the world? Have the scientifically-based thresholds for establishing the presence of diabetes, i.e., the new definition of diabetes, further aggravated the problem?

Would people be healthier if we did not tell them they have diabetes? Would those people who are not being treated for diabetes because we raise the threshold for its diagnosis, thus telling them that by definition they don't have diabetes, truly be healthy, or would they just be unaware of their illness and deteriorating health? Would their lives be better because they are unaware

that untreated, diabetes will result in serious, irreversible consequences, which will cause their death? When Dr. Elliott Josllin founded the Joslin Diabetes Center in 1898, the life expectancy of a patient with Type 1 diabetes after diagnosis was four months. Did he create the avalanche of cost which in 2007 resulted in $174 billion in costs of diagnosed diabetes in the United States? Has the refinement of the definition of diabetes – the diagnostic threshold – aggravated this problem?

Surprisingly, the answer to Dr. Welch is found in the business-administration literature. In his seminal work, *The Fifth Disciple*, Dr. Peter Senge addresses the issue of "dynamic complexity." He concluded, "when obvious interventions produce non-obvious consequences, there is dynamic complexity." He defines it as "where cause and effect are subtle, and where the effects over time of interventions are not obvious." This is the nature of diabetes. It doesn't hurt and has few symptoms early on. The benefits of the excellent treatment of diabetes are largely seen many years after its onset. Could anything more clearly define the nature of a disease like diabetes? If we change the threshold for the definition of diabetes, fewer people will "have diabetes," by definition, but the subtle processes which are destroying their health will continue until the non-obvious consequences become obvious but only after it is too late to do anything about it. The cost of treating diabetes will go down in the short run but the cost will skyrocket as the consequences of delaying treatment due to our new threshold become abundantly obvious. Changing the threshold for the defining of the presence of an illness does not change the reality of that illness, whether it is blood pressure, diabetes, heart disease or cancer.

Dr. Welch's philosophy is the basis of his theory. He detailed it in his book, *Over-diagnosed: Making People Sick in the Pursuit of Health*. He said, "Finally, there's our medical culture. We are trained not to miss things, however unimportant those things are. And we are trained to focus on the few we might be able to help, even if it's only 1 out of 100 (the benefit of lowering cholesterol in those with normal cholesterol but elevated C-reactive protein) or 1 out of 1000 (the benefit of breast and prostate cancer screening). We believe this is what our patients – and the public – cares about. But it's time for everyone to start carrying about what happens to the other 999." Dr. Welch thinks it's the group, not the individual, which is the valued object of society. Therefore, anything which does not help "the group" should be "defined" out of existence. The group's economic benefit – lowering the cost of healthcare by lowering the number of people who are treated because we change the definition of health and illness – is paramount. Dr. Welch's proposals for changing healthcare have much more to do with his political and social philosophy than with science and evidence-based medicine.

Finally, Dr. Welch argues that the establishment of diagnostic and treatment thresholds is the result of our quest for excellence in healthcare. He states: "The movement to measure health-care quality, however well intended, exacerbates the problem. Many performance metrics measure whether diagnostic tests and treatments are being ordered. Because good grades require actions, not inactions, lower thresholds are encouraged. And the advent of electronic medical records has made these actions even easier, as more and more of us have the "one-click" option to order tests and treatments." Reputations are made and book sells are created by challenging current practice no matter how ludicrous the challenge is.

To assert that the standards of quality metrics come from the quality metrics themselves is to ignore science. The standard of 7% for hemoglobin A1C to judge the quality of diabetes care was not established by the defining of a quality metric; it was defined by science. That science is not absolute. Some argue for 6.5%, others are examining whether the standard can be stratified by age and/or by the duration of a patient having had diabetes. The quality metric will change as

our knowledge expands, but the metric and the threshold was not established as a capricious effort to make someone sick who has a benign, inconsequential condition that doesn't matter.

While the 999 , in Dr. Welch's paradigm, may decide that they do not care about the 78 who have diabetes and the 20+ who don't know they have diabetes, or while Dr. Welch may argue that the 999 shouldn't care, the good news is that our society does care and our hope is that they will continue to care.

To argue that electronic medical records (EMR) are adding to the problem because they make compliance with quality metrics easier is to ignore the patient safety and quality of care advancements which have been made possible by the use of EMRs. The problem for Dr. Welch's theories is the same as the problem for healthcare providers, the explosion of knowledge – sound, scientific, valid science – which enable us to do more to help people manage their own health than ever before in medicine. Can EMRs be abused? Absolutely, but their potential for good far outweigh that potential.

Dr. Welch has uncovered a problem in healthcare but unfortunately he has drawn the wrong conclusions and offered the wrong solutions. Advancement in healthcare, particularly in preventive care, screening care and disease management will, in the short run, increase cost. Fortunately, in the long run, they will decrease cost. Diagnosing and treating people with diabetes will increase the cost of their care, but done excellently it will prevent blindness, amputations, coronary bypass surgeries, dialysis and other expensive treatments for complications of the neglect of the treatment of diabetes. None of this addresses the value to the individual, which in our value system and culture is paramount, as it is not the collective which only has value, but each individual, no matter how poor, no matter how old, no matter how powerless – you name the "no matter…" – has absolute value as a human being.

We must control the cost of care but it is not by ignoring science, it must be done by applying science. We must stop paying for treatments which have no scientific bases, no matter how good that treatment makes a person feel. We must eliminate waste by monitoring excessive use of expensive treatment and diagnostic tests which do not add to the health of a patient. Patients must be involved in their healthcare decision making. It is OK for a patient to decide they don't want a type of care even if it is scientifically sound, but that decision is the patient's in collaboration with his/her healthcare provider, not Dr. Welch's. In collaboration with the patient, the patient and healthcare provider must rationally decide when it is time to stop testing and treating and face the fact that the highest good in life is not the indefinite and impossible preservation of a heart beat or a respiration. End of life decisions will have to be made by the healthcare team, compassionately, rationally but appropriately.

In 1985, a pediatrician published an article in which he argued that there are instances where a pig has more value than a human child who is infirmed. I oppose that idea with everything I believe and practice. The implications of Dr. Welch's ideas, I believe, derived from the same philosophy and will lead to the same conclusions. I oppose his ideas. I am sure he is a caring and competent physician but the implications of his ideas are either not obvious to him or intend to pursue an agenda which has little to do with healthcare and science.